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Search completed for: Transperineal biopsies for men being investigated for prostate cancer.

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Search details

Transperineal biopsies for men being investigated for prostate cancer.

Resources searched

NHS Evidence; TRIP Database; Cochrane Library; BNI; CINAHL; EMBASE; MEDLINE; Google Scholar

Database search terms: prostat* adj2 cancer*; prostat* adj2 neoplasm*; prostat* adj2 carcinoma*; prostat* adj2 adenocarcinoma*; prostat* adj2 tumor*; prostat* adj2 tumour*; PROSTATIC NEOPLASMS; biops*; BIOPSY; transperineal adj2 biops*; transperineal; perineal; template

Evidence search string(s): (prostate OR prostatic) (transperineal OR template) (biopsy OR biopsies)

Google search string(s): (prostate OR prostatic) (transperineal OR template) (biopsy OR biopsies)

Summary

There is a considerable amount of research on transperineal biopsy for investigating prostate cancer in men. Little in the way of direct guidance on Who and What criteria, but you may be able to deduce or infer this information from the research papers included in the Published Research sections.
Guidelines

British Association of Urological Surgeons
MDT (multi-disciplinary team) guidance for managing prostate cancer (2nd edition) 2009

NICE
Transperineal template biopsy of the prostate 2010

Royal College of Pathologists
Towards a Consensus Protocol on Prostate Biopsies: Indications, Techniques and Assessment 2003

Evidence-based reviews

Database of Abstracts of Review of Effects
The results of transperineal versus transrectal prostate biopsy: a systematic review and meta-analysis 2012
Transrectal prostate biopsy and transperineal prostate biopsy were equivalent in terms of efficiency and complications.

NHS Cancer Screening Programmes
Diagnostic Value of Systematic Prostate Biopsy Methods in The Investigation for Prostate Cancer: a Systematic Review 2005

Published research - Databases

1. Clinical-pathologic correlation between transperineal mapping biopsies of the prostate and three-dimensional reconstruction of prostatectomy specimens.

Author(s) Crawford ED, Rove KO, Barqawi AB, Maroni PD, Werahera PN, Baer CA, Koul HK, Rove CA, Lucia MS, La Rosa FG

Citation: Prostate, May 2013, vol./is. 73/7(778-87), 0270-4137;1097-0045 (2013 May)

Publication Date: May 2013

Abstract: BACKGROUND: Extended transrectal ultrasound guided biopsies (TRUSB) of the prostate may not accurately convey true morphometric information and Gleason score (GS) of prostate cancer (PCa) and the clinical use of template-guided (5-mm grid) transperineal mapping biopsies (TPMBs) remains controversial.METHODS: We correlated the clinical-pathologic results of 1,403 TPMB cores obtained from 25 men diagnosed with PCa with 64 cancer lesions found in their corresponding radical prostatectomy (RP) specimens. Special computer models of three-dimensional, whole-mounted radical prostatectomy (3D-WMRP) specimens were generated and used as gold standard to determine tumor morphometric data. Between-sample rates of upgrade and downgrade (highest GS and a novel cumulative GS) and upstage and downstage (laterality) were determined. Lesions>=0.5 cm(3) or GS>=7 were considered clinically significant.RESULTS: From 64 separate 3D-WMRP lesions, 25 had significant volume (mean 1.13 cm(3)) and 39 were insignificant (mean 0.09 cm(3)) (P < 0.0001); 18/64 lesions were missed by TPMB, but only one was clinically significant with GS-8 (0.02 cm(3)). When comparing the cumulative GS of TPMB versus RP, 72% (n = 18) had identical scores, 12% (n = 3) were upgraded, and only 16% (n = 4) were downgraded. Laterality of TPMB and RP was strongly correlated, 80% same laterality, 4% were up-staged, and 16% down-staged.CONCLUSIONS: Our clinical-pathology correlation showed very high accuracy of TPMB with a 5-mm grid template to detect clinically significant PCa lesions as compared with 3D-WMRP, providing physicians and patients with a reliable assessment of grade and...
stage of disease and the opportunity to choose the most appropriate therapeutic options. Copyright 2012 Wiley Periodicals, Inc.

Source: Medline

2. Transperineal template-guided mapping biopsy as a staging procedure to select patients best suited for active surveillance.

Author(s) Taira AV, Merrick GS, Bennett A, Andreini H, Taubenslag W, Galbreath RW, Butler WM, Bittner N, Adamovich E

Citation: American Journal of Clinical Oncology, April 2013, vol./is. 36/2(116-20), 0277-3732;1537-453X (2013 Apr)

Publication Date: April 2013

Abstract: OBJECTIVES: Patients with clinically insignificant prostate cancer are candidates for active surveillance. However, uncertainty regarding the true extent of disease limits enthusiasm. In this study, we report our initial findings in patients with transrectal ultrasound (TRUS)-detected clinically insignificant prostate cancer undergoing transperineal template-guided mapping biopsy (TTMB) as a staging procedure.METHODS: Sixty-four patients who met the Epstein criteria for clinically insignificant prostate cancer underwent TTMB. Each biopsy core position was recorded in 3 dimensions with documentation of location of each positive biopsy core, Gleason score, percentage of involvement of each core, and presence/absence of perineural invasion.RESULTS: Mean pre-TRUS prostate specific antigen was 4.7 ng/mL with a Gleason score of 6 involving a median of 5% of 1 TRUS core. The mean number of TTMB biopsy cores was 58.5, with 6.6 cores positive for malignancy. Ten patients had clinically insignificant prostate cancer (15.7%), 8 had no TTMB-detected cancer (12.5%), and 46 (71.9%) had clinically significant cancer. Of patients with cancer, 37 (66.1%) had bilobar involvement and 25 (44.6%) harbored a Gleason score of >=7. In a multivariate analysis, tobacco consumption was found to be most closely related to clinically significant disease on TTMB.CONCLUSIONS: TRUS biopsy underestimates disease extent and Gleason score in some patients. TTMB provides a more accurate assessment of the presence of aggressive histology.

Source: Medline

3. Transperineal magnetic resonance image targeted prostate biopsy versus transperineal template prostate biopsy in the detection of clinically significant prostate cancer.


Citation: Journal of Urology, March 2013, vol./is. 189/3(860-6), 0022-5347;1527-3792 (2013 Mar)

Publication Date: March 2013

Abstract: PURPOSE: Multiparametric magnetic resonance imaging can be used to guide prostate biopsy by targeting biopsies to areas in the prostate at high risk for cancer. We compared the detection of clinically significant and insignificant cancer by transperineal magnetic resonance imaging targeted biopsy and transperineal template guided prostate biopsy.MATERIALS AND METHODS: A total of 182 men with a lesion suspicious for cancer on multiparametric magnetic resonance imaging underwent transperineal magnetic resonance imaging targeted biopsy using a cognitive registration technique, followed by systematic transperineal template guided prostate biopsy. The primary outcome was the detection rate of clinically significant prostate cancer. Clinical significance was defined using maximum cancer core length 4 mm or greater and/or Gleason grade 3 + 4 or greater (University College London definition 2). We secondarily evaluated other commonly used thresholds of clinically significant disease, including maximum cancer core length 6 mm or greater and/or Gleason grade 4 + 3 or greater, maximum cancer core length 3 mm or greater and/or Gleason grade 4 + 3 or greater, and maximum cancer core length 2 or greater mm and/or Gleason grade 3 + 4 or greater. Strategies were statistically compared with the McNemar test.RESULTS: Mean +/- SD patient age was 63.3 +/- 7.2 years. Median prostate specific antigen was 6.7 ng/ml (IQR 4.7-10.0). Clinically significant cancer was
detected by magnetic resonance imaging targeted biopsy and template guided prostate biopsy in 103 (57%) and 113 of the 182 men (62%) (p = 0.174), and clinically insignificant cancer was detected in 17 (9.3%) and 31 (17.0%), respectively (p = 0.024). CONCLUSIONS: Prostate biopsy targeted to suspicious lesions on multiparametric magnetic resonance imaging has encouraging rates of detection of clinically significant cancer while also decreasing the detection rate of clinically insignificant cancer. This is achieved with fewer biopsy cores than for systematic template guided biopsy. Further prospective, multicenter, comparative trials of the performance of targeting strategies are needed to consider magnetic resonance imaging targeted biopsy an alternative to conventional systematic biopsy. Copyright 2013 American Urological Association Education and Research, Inc. Published by Elsevier Inc. All rights reserved.

Source: Medline
Available in fulltext from Journal of Urology at the ULHT Library and Knowledge Services’ eJournal collection

4. Computer-aided (HistoScanning) biopsies versus conventional transrectal ultrasound-guided prostate biopsies: do targeted biopsy schemes improve the cancer detection rate?.

Author(s) Hamann MF, Hamann C, Schenk E, Al-Najar A, Naumann CM, Junemann KP

Citation: Urology, February 2013, vol./is. 81/2(370-5), 0090-4295;1527-9995 (2013 Feb)

Publication Date: February 2013

Abstract: OBJECTIVE: To define potential improvement in prostate cancer detection by application of a computer-aided, targeted, biopsy regimen using HistoScanning.MATERIALS AND METHODS: We analyzed 80 patients who underwent systematic transrectal, targeted transrectal, and targeted perineal biopsies. Each patient was diagnosed preoperatively by HistoScanning, defining a maximum of 3 suspicious areas. These areas were biopsied, both transrectally and via the perineum, with a maximum of 3 cores per location. RESULTS: We detected prostatitis in 30 patients (37.5%), premalignant lesions in 10 (12.5%), and prostate cancer in 28 (35%). The transrectal technique was used to detect 78.6% of all cancers using 14 cores by systematic biopsy. With a maximum of 9 targeted cores, 82.1% of all cancers were detected with the targeted perineal approach and 53.6% were detected with the targeted transrectal approach. Although our data did not show significant difference in the performance of targeted transperineal compared with systematic transrectal biopsies, the detection rate of targeted transrectal biopsies was significantly lower. CONCLUSION: The presented targeted biopsy scheme achieved an overall detection rate of 85% of prostate-specific antigen-relevant pathologic lesions within the prostate. Thus, the presented procedure shows an improved detection rate compared with standard systematic prostate biopsies, and the number of cores required is reduced. Furthermore, the perineal HistoScanning-aided approach seems to be superior to the transrectal approach with respect to the prostate cancer detection rate. The presented procedure might be a step toward reliable ultrasound-based tissue characterization and toward fulfilling the requirements of novel therapeutic strategies. Copyright 2013 Elsevier Inc. All rights reserved.

Source: Medline

5. Transperineal MR-guided stereotactic prostate biopsy utilizing a commercially available anorectal biopsy device.

Author(s) Wolter K, Decker G, Willinek WA

Citation: Rofo: Fortschritte auf dem Gebiete der Rontgenstrahlen und der Nuklearmedizin, February 2013, vol./is. 185/2(116-20), 1438-9010;1438-9010 (2013 Feb)

Publication Date: February 2013

Abstract: PURPOSE: To evaluate the feasibility of transperineal MR-guided prostate biopsy using a stereotactical targeting system originally designed for anorectal usage. MATERIALS AND METHODS: A commercially available DynaTRIM MR targeting system (Invivo corp., Gainesville FL, USA) originally designed only for anorectal application
was used on a 70 cm wide-bore, whole-body 3 Tesla MR-system (Ingenia, Philips Healthcare, Best, NL). Transperineal biopsy was performed following multiparametric MR imaging for targeting of the lesion. RESULTS: The anorectal device allowed for correct localization and successful MR-guided transperineal biopsy of the targeted lesion. CONCLUSION: MR-guided transperineal biopsy is feasible using a commercially available anorectal stereotactic biopsy device. This may lead to a broader acceptance of this approach for targeted prostate biopsies. Georg Thieme Verlag KG Stuttgart. New York.

Source: Medline

6. Transrectal ultrasound (TRUS) and TRUS-biopsy accuracy in potential candidates for PRIAS active surveillance protocol.

Author(s) Lacetera V, Galosi AB, Cantoro U, Catanzariti F, Mazzaferro D, Cantoro D, Quaresima L, Conti A, Raqban R, Montironi R, Muzzonigro G

Citation: Archivio Italiano di Urologia, Andrologia, December 2012, vol./is. 84/4(272-5), 1124-3562;1124-3562 (2012 Dec)

Publication Date: December 2012

Abstract: AIM: Evaluate the transrectal ultrasound (TRUS) and TRUS-guided Biopsy (TRUS-Bx) accuracy in patients with low risk prostate cancer (PCA) that were potential candidate for PRIAS active surveillance (AS) protocol but underwent to immediate radical prostatectomy (RP). METHODS: 616 men were extracted from our institutional RP database. We selected the patients who met PRIAS inclusion criteria. The primary outcome was to evaluate the positive predictive value (PPV) and the specificity of suspected lesions at TRUS. The secondary outcome was to evaluate the TRUS-Bx accuracy in term of pathological upstaging and pathological upgrading with respect of RP specimen pathology report. RESULTS: 147 men of 616 (23.8%) in our RP database met PRIAS criteria; in this group we found 66 suspected lesions at TRUS examination (66/147: PPV 44.8%). Prostate cancer was really present in the biopsy specimen in only 32/66 of suspected lesions; in 28/66 the suspect lesion at TRUS was in the same position of the index lesion at final pathology. TRUS/biopsy specificity was 48% and TRUS/surgical specimen specificity 39%. TRUS-Bx staging accuracy: upgrading between biopsy and RP was recorded in 57/147 (38%) whereas 30/147 (20%) were upstaged on final pathology up to N1. CONCLUSIONS: TRUS and TRUS-Bx are insufficient tools to detect the grade, the location and the extent of PCA. New emerging techniques, such as US-MRI fusion biopsy and 3D template-guided transperineal saturation biopsy are promising to minimize the risk of misclassification and therefore to better select the best option of treatment (radical treatments or focal therapies or active surveillance) in each patient with low risk prostate cancer.

Source: Medline

7. Image registration for targeted MRI-guided transperineal prostate biopsy.

Author(s) Fedorov A, Tuncali K, Fennessy FM, Tokuda J, Hata N, Wells WM, Kikinis R, Tempany CM

Citation: Journal of Magnetic Resonance Imaging, October 2012, vol./is. 36/4(987-92), 1053-1807;1522-2586 (2012 Oct)

Publication Date: October 2012

Abstract: PURPOSE: To develop and evaluate image registration methodology for automated re-identification of tumor-suspicious foci from preprocedural MR exams during MR-guided transperineal prostate core biopsy. MATERIALS AND METHODS: A hierarchical approach for automated registration between planning and intra-procedural T2-weighted prostate MRI was developed and evaluated on the images acquired during 10 consecutive MR-guided biopsies. Registration accuracy was quantified at image-based landmarks and by evaluating spatial overlap for the manually segmented prostate and sub-structures. Registration reliability was evaluated by simulating initial mis-registration and analyzing the convergence behavior. Registration precision was characterized at the planned biopsy targets. RESULTS: The total computation time was compatible with a clinical setting, being at most 2 min. Deformable registration led to a significant improvement in spatial overlap of
the prostate and peripheral zone contours compared with both rigid and affine registration. Average in-slice landmark registration error was 1.3 +/- 0.5 mm. Experiments simulating initial mis-registration resulted in an estimated average capture range of 6 mm and an average in-slice registration precision of +/-0.3 mm. CONCLUSION: Our registration approach requires minimum user interaction and is compatible with the time constraints of our interventional clinical workflow. The initial evaluation shows acceptable accuracy, reliability and consistency of the method. Copyright 2012 Wiley Periodicals, Inc.

Source: Medline

8. High detection rate of significant prostate tumours in anterior zones using transperineal ultrasound-guided template saturation biopsy

Author(s) Mabjeesh N.J., Lidawi G., Chen J., German L., Matzkin H.

Citation: BJU International, October 2012, vol./is. 110/7(993-997), 1464-4096;1464-410X (October 2012)

Publication Date: October 2012

Abstract: Study Type - Diagnostic (exploratory cohort) Level of Evidence 2b What's known on the subject? and What does the study add? Men with persistent suspicion for prostate cancer after previous negative standard transrectal biopsy series are offered saturation biopsy either transrectally or transperineally to increase cancer detection rate. A high-risk group of men with at least two previous negative transrectal biopsies underwent transperineal template-guided saturation biopsy. Prostate cancer was detected in 26%, predominantly in the anterior zones. PSA velocity or doubling time were the most powerful factors to predict cancer. OBJECTIVE To evaluate the detection rate and the regional location of prostate cancer in men undergoing transperineal template-guided saturation biopsy (TTSB). PATIENTS AND METHODS In all, 92 consecutive men with at least two previous negative transrectal biopsy series who underwent a multiple-core prostate TTSB at our centre were included in the study. Univariable and multivariable logistic regression analyses were used to address the relationship between parameters before TTSB and prostate cancer-detection rate. Covariates consisted of age at biopsy, free and total prostate-specific antigen (PSA), prostate volume, digital rectal examination findings, histological findings on previous biopsy, PSA velocity (PSAV), PSA-doubling time (PSADT) and the number of previous negative biopsy sets. RESULTS Prostate cancer was diagnosed in 26% of the men. A median of 30 cores was taken by TTSB. Adenocarcinoma in >2 cores was detected in 58.5% and Gleason score >=7 was detected in 46% of the diagnosed men. Most of the tumours (83.3%) were found in the anterior zones of the gland, with a significantly higher number of positive cores vs the posterior zones (mean 4.9 vs 1.5, P= 0.015). PSADT and PSAV were the only independent predictors of prostate cancer detection at multivariate analyses with odds ratios of 0.71 (P= 0.014) and 1.58 (P= 0.025), respectively. CONCLUSIONS TTSB has a high prostate cancer-detection rate, especially in the anterior zones. Men after at least two previous negative transrectal biopsy series and persistent suspicion of prostate cancer, as evidenced by rapid PSA dynamics, should be offered TTSB. 2012 BJU International.

Source: EMBASE

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9. A biopsy simulation study to assess the accuracy of several transrectal ultrasonography (TRUS)-biopsy strategies compared with template prostate mapping biopsies in patients who have undergone radical prostatectomy.


Citation: BJU International, September 2012, vol./is. 110/6(812-20), 1464-4096;1464-410X (2012 Sep)

Publication Date: September 2012

Abstract: UNLABELLED: What's known on the subject? and What does the study add?
Transrectal ultrasonography (TRUS)-guided biopsies can miss prostate cancer and misclassify risk in a diagnostic setting; the exact extent to which it does so in a repeat biopsy strategy in men with low-intermediate risk prostate cancer is unknown. A simulation study of different biopsy strategies showed that repeat 12-core TRUS biopsy performs poorly. Adding anterior sampling improves on this but the highest accuracy is achieved using transperineal template prostate mapping using a 5 mm sampling frame.

OBJECTIVE: To determine the effectiveness of two sampling strategies; repeat transrectal ultrasonography (TRUS)-biopsy and transperineal template prostate mapping (TPM) to detect and exclude lesions of >=0.2 mL or >=0.5 mL using computer simulation on reconstructed three-dimensional (3-D) computer models of radical whole-mount specimens.

PATIENTS AND METHODS: Computer simulation on reconstructed 3-D computer models of radical whole-mount specimens was used to evaluate the performance characteristics of repeat TRUS-biopsy and TPM to detect and exclude lesions of >=0.2 mL or >=0.5 mL. In all, 107 consecutive cases were analysed (1999-2001) with simulations repeated 500 times for each biopsy strategy. TPM and five different TRUS-biopsy strategies were simulated; the latter involved a standard 12-core sampling and incorporated variable amounts of error, as well as the addition of anterior cores. Sensitivity, specificity, negative and positive predictive values for detection of lesions with a volume of >=0.2 mL or >=0.5 mL were calculated.

RESULTS: The mean (SD) age and PSA concentration were 61 (6.4) years and 8.5 (5.9) ng/mL, respectively. In all, 53% (57/107) had low-intermediate risk disease. In all, 665 foci were reconstructed; there were 149 foci >=0.2 mL and 97 >= 0.5 mL in the low-intermediate risk group. Overall, TPM accuracy (area under the receiver operating curve, AUC) was 0.90 compared with AUC 0.70-0.80 for TRUS-biopsy. In addition, at best, TRUS-biopsy missed 30-40% of lesions of >=0.2 mL and >=0.5 mL whilst TPM missed 5% of such lesions. CONCLUSION: TPM under simulation conditions appears the most effective re-classification strategy, although augmented TRUS-biopsy techniques are better than standard TRUS-biopsy. 2012 THE AUTHORS. BJU INTERNATIONAL 2012 BJU INTERNATIONAL.

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10. Identifying candidates for active surveillance: an evaluation of the repeat biopsy strategy for men with favorable risk prostate cancer.

Author(s) Barzell WE, Melamed MR, Cathcart P, Moore CM, Ahmed HU, Emberton M

Citation: Journal of Urology, September 2012, vol./is. 188/3(762-7), 0022-5347;1527-3792 (2012 Sep)

Publication Date: September 2012

Abstract: PURPOSE: Active surveillance is increasingly recommended to reduce overtreatment in men with favorable risk prostate cancer. A repeat confirmatory biopsy has become the standard recommendation for these men to increase the precision of this risk attribution. We investigate the usefulness of this approach by comparing the current practice standard, repeat transrectal ultrasound biopsy, with template prostate mapping.

MATERIALS AND METHODS: A total of 124 men who were attributed a favorable risk prostate cancer status based on transrectal ultrasound guided biopsy and who were considering a policy of active surveillance underwent combined transrectal ultrasound biopsy and template prostate mapping as a confirmatory strategy. Maximum Gleason grade and disease burden were compared between the 2 confirmatory tests.

RESULTS: Depending on the definition used between 8% and 22% of men had prostate cancer reclassified as clinically important by repeat transrectal ultrasound biopsy whereas template guided prostate mapping reclassified the disease in 41% to 85% of the men. Repeat transrectal ultrasound biopsy failed to detect up to 80% of clinically important cancers detected by the reference standard. The sensitivity of repeat transrectal ultrasound biopsy to identify clinically important disease varied from 9% to 24% with the negative predictive value ranging from 23% to 60%.

CONCLUSIONS: When applied to a population of men initially deemed to have favorable risk prostate cancer, transrectal ultrasound biopsy will miss a large proportion of clinically important cancers compared to template guided prostate mapping. The usefulness of repeat transrectal ultrasound biopsy in ruling out
clinically important prostate cancer needs to be reconsidered. Copyright 2012 American Urological Association Education and Research, Inc. Published by Elsevier Inc. All rights reserved.

**Source:** Medline

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### 11. Transperineal prostate biopsy detects significant cancer in patients with elevated prostate-specific antigen (PSA) levels and previous negative transrectal biopsies.

**Author(s)** Dimmen M, Vlatkovic L, Hole KH, Nesland JM, Brennhovd B, Axcrona K

**Citation:** BJU International, July 2012, vol./is. 110/2 Pt 2(E69-75), 1464-4096;1464-410X (2012 Jul)

**Publication Date:** July 2012

**Abstract:** UNLABELLED: Several authors have previously reported that transrectal prostate biopsy has a false-negative rate of 20-30%, and that a number of prostate cancers missed on transrectal biopsy can be detected by transperineal biopsy. It has also been shown that most of these tumours are located anteriorly in the prostate gland. The present study showed a high rate of prostate cancer in patients with previous negative transrectal biopsies but elevated PSA levels, and that the cancers were located anteriorly in the prostate gland. Also, most of these cancers were clinically significant in patients that underwent RP, i.e. a high proportion of cancers were high-grade/high-stage tumours. We also showed that the transperineal biopsy technique can be applied successfully to patients with a closed anal orifice after previous surgery for rectal cancer. Transperineal biopsy can be done safely without routine antibiotic prophylaxis. OBJECTIVE: To investigate the outcomes of transperineal prostate biopsies in patients with elevated prostate-specific antigen (PSA) levels and negative transrectal biopsies. The aim of this retrospective study was to evaluate the diagnostic yield of the transperineal biopsy approach in these patients, and to evaluate the pathology findings in subsequent radical prostatectomy (RP) specimens in patients undergoing RP. PATIENTS AND METHODS: In all, 69 consecutive patients with previous negative transrectal biopsies but elevated PSA levels investigated at urological units in Norway who had been referred to The Norwegian Radium Hospital were included. The patients had undergone a mean (median; range) of 2.42 (2; 0-7) transrectal biopsies. The mean (range) age was 63.1 (42-78) years. The median (range) PSA level was 12 (4.3-229) ng/mL. The patients were examined with transperineal biopsy of the prostate between July 2007 and February 2009. The results of the transperineal biopsies were reviewed for Gleason biopsy score, and these were compared with the histopathology results of the RP specimens, i.e. final Gleason scores. Pathological stage of the prostate specimens and tumour volume were also reviewed. RESULTS: Prostate cancer was found in the biopsies of 38 of 69 patients (55%). In all, 20 of 38 patients had a Gleason score estimated at \( >3 + 4 = 7 \). In all, 26 patients underwent RP. The surgical specimens revealed pathological stage pT2c in 65%, pT3a in 27% and pT3b in 8% of the cases. In all, 23 of the 26 RP specimens showed a final Gleason score of \( \geq 7 \). The vast majority of cancers detected were situated in the anterior/ventral portion of the prostate. CONCLUSIONS: Transperineal biopsy of the prostate in patients with an elevated PSA level after negative transrectal prostate biopsies appears to be a feasible and important option for further investigation to detect prostate cancer. The present study shows that the transperineal biopsy allows good access of the anterior/ventral part of the prostate. Histopathology reports on the RP specimens obtained from the patients that underwent RP revealed significant cancer. 2011 THE AUTHORS. BJU INTERNATIONAL 2011 BJU INTERNATIONAL.

**Source:** Medline

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### 12. A case of prostatic cancer with a low PSA level accompanied with cystic

A 70-year-old man with the complaint of macrohemituria and hematospermia was admitted to our hospital for further examination of a cystic formation of the right seminal vesicle, 3.6 cm in diameter, detected by magnetic resonance imaging (MRI). Cystoscopy revealed no remarkable change, but urine cytology was class III. The serum concentration of prostate specific antigen (PSA) was within the normal range of 1.83 ng/ml. Transperineal needle biopsy of the prostate and cystic tumor of the seminal vesicle revealed adenocarcinoma of the prostate and seminal vesicle, but immunostaining for PSA was negative, so we diagnosed the case as primary adenocarcinoma of the seminal vesicle. Bloody fluid of the cyst was obtained by transperineal aspiration, but no cancer cells were detected by cytological examination. Total prostatectomy was performed, and pathological findings was infiltration of prostate cancer into the seminal vesicle (pT3b) because immunostaining of the PSA was positive.

Source: EMBASE

13. The role of transperineal template prostate biopsies in restaging men with prostate cancer managed by active surveillance.

Author(s) Ayres BE, Montgomery BS, Barber NJ, Pereira N, Langley SE, Denham P, Bott SR

Citation: BJU International, April 2012, vol./is. 109/8(1170-6), 1464-4096;1464-410X (2012 Apr)

Publication Date: April 2012

Abstract: OBJECTIVE: To evaluate the role of transperineal template prostate biopsies in men on active surveillance. PATIENTS AND METHODS: In all, 101 men on active surveillance for prostate cancer underwent restaging transperineal template prostate biopsies at a single centre. Criteria for active surveillance were <=75 years, Gleason <=3+3, prostate-specific antigen (PSA) <=15 ng/mL, clinical stage T1-2a and <=50% ultrasound-guided transrectal biopsy cores positive for cancer with <=10 mm of disease in a single core. The number of men with an increase in disease volume or Gleason grade on transperineal template biopsy and the number of men who later underwent radical treatment were assessed. The role of PSA and PSA kinetics were studied. RESULTS: In all, 34% of men had more significant prostate cancer on restaging transperineal template biopsies compared with their transrectal biopsies. Of these men, 44% had disease predominantly in the anterior part of the gland, an area often under-sampled by transrectal biopsies. In the group of men who had their restaging transperineal template biopsies within 6 months of commencing active surveillance 38% had more significant disease. There was no correlation with PSA velocity or PSA doubling time. In total, 33% of men stopped active surveillance and had radical treatment. CONCLUSIONS: Around one-third of men had more significant prostate cancer on transperineal template biopsies. This probably reflects under-sampling by initial transrectal biopsies rather than disease progression. 2011 THE AUTHORS. BJU INTERNATIONAL 2011 BJU INTERNATIONAL.

Source: Medline

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14. [Ultrasound-guided transperineal 24-core saturation prostate biopsy is superior to the 14-core scheme in detecting prostate cancer in patients with PSA < 20 microg/L].

Author(s) Zhang FB, Shao Q, Du Y, Tian Y
OBJECTIVE: To compare the detection rates of prostate cancer (PCa) and complications of the transrectal ultrasonography (TRUS)-guided 24-core saturation scheme versus 14-core scheme for transperineal prostate biopsy in patients with total PSA < 20 microg/L.

METHODS: We performed TRUS-guided 24-core saturation transperineal biopsy for 136 patients suspected of PCa (24-core group) and 14-core biopsy for another 116 (14-core group). We compared the PCa detection rates and post-biopsy complications, such as gross hematuria, urinary system infection, and acute urinary retention between the two groups.

RESULTS: The baseline characteristics of the two groups were comparable with regard to the mean age, prostate volume and PSA level (P>0.05). The positive rates of PCa detection were 48.53% (66/136) in the 24-core group and 17.24% (20/116) in the 14-core group (P<0.001), and the positive rates of samples were 8.09% and 2.83%, respectively (P=0.012). The detection rate of PCa in the apex zone was significantly higher in the former (11.76%) than in the latter (1.72%) (P<0.05). There were no statistically significant differences in such post-biopsy complications as gross hematuria, urinary system infection, and acute urinary retention between the two groups (P>0.05).

CONCLUSION: TRUS-guided 24-core saturation transperineal biopsy of the prostate is superior to the 14-core scheme for its higher detection rate of PCa, particularly PCa in the apex zone, and lower incidence of complications in patients with PSA < 20 microg/L.

Source: Medline

15. The clinical value of 3 tesla diffusion-weighted magnetic resonance imaging in the diagnosis of prostate cancer


Citation: Acta Urologica Japonica, March 2012, vol./is. 58/3(143-148), 0018-1994 (31 Mar 2012)

Publication Date: March 2012

Abstract: Diffusion-weighted imaging (DWI) is a magnetic resonance imaging (MRI) method and is considered potentially useful for detecting prostate cancer. We evaluated the clinical value of DWI with apparent diffusion coefficient (ADC) maps in addition to T2-weighted imaging (T2WI) using 3 tesla (3 T) MRI. Thirty-three patients with elevated prostate specific antigen were evaluated by MRI with T2WI and DWI prior to transperineal template-guided mapping biopsy. The MRI findings were compared with the pathology of biopsy specimens in six parts of prostate: both sides of outer peripheral zones, inner peripheral zones, and transition zones. The sensitivities, specificities and accuracies were 42.1, 84.4 and 76.3% in T2WI, 57.1, 84.7 and 80.8% in T2WI/DWI, and 85.2 and 85.4% in DWI/ADC using 0.951 x 10^-3 mm^2/s as cutoff ADC value. The hazard ratio of patients whose ADC values were under the cutoff was 25.86 by multivariate analysis. Mean ADC values were significantly different between cancer positive and negative cores (p < 0.001). The ADC value showed a negative correlation with increasing tumor length (p = 0.0047). Although further study with a large number of patients is necessary, DWI/ADC using 3 T MRI is a useful tool for detecting prostate cancer.

Source: EMBASE

16. The role of a standardized 36 core template-assisted transperineal prostate biopsy technique in patients with previously negative transrectal ultrasonography-guided prostate biopsies.

Author(s) Pal RP, Elmussareh M, Chanawani M, Khan MA

Citation: BJU International, February 2012, vol./is. 109/3(367-71), 1464-4096;1464-410X (2012 Feb)

Publication Date: February 2012
Abstract: OBJECTIVE: To determine the efficacy and safety of a standardized 36 core template-assisted transperineal biopsy technique for detecting prostate cancer in patients with previously negative transrectal ultrasonography-guided prostate biopsies and elevated prostate-specific antigen (PSA) levels. PATIENTS AND METHODS: Between April 2008 to September 2010, a total of 40 patients with a mean (range) age of 63 (49-73) years, a mean (range) elevated PSA level of 21.9 (4.7-87) ng/mL and two previous sets of negative TRUS-guided prostate biopsies underwent standardized 36 core template-assisted transperineal prostate biopsies under general anaesthetic as a day case procedure. The cancer detection rate and complications for all cases were evaluated. RESULTS: In total, 27 of 40 (68%) patients were found to have adenocarcinoma of the prostate, two patients (5.0%) had atypical small acinar proliferation, one had high-grade prostatic intraepithelial neoplasia (2.5%), four (10%) had chronic active inflammation and six (15%) had benign histology. Gleason scores were in the range 6-9, with a median Gleason score of 7. There were no cases of urosepsis, urinary tract infections or haematuria. A single patient experienced acute urinary retention, with a subsequent successful trial without a catheter, and haematospermia was common, although minor. CONCLUSIONS: Our standardized 36 core template-assisted transperineal prostate biopsy technique is safe and associated with a high detection rate of prostate cancer. This technique should be considered in patients with elevated PSA levels and previously negative TRUS-guided prostate biopsies. 2011 THE AUTHORS. BJU INTERNATIONAL 2011 BJU INTERNATIONAL.

Source: Medline
Available in fulltext from BJU International at EBSCOhost
Available in fulltext from BJU International (was British Journal of Urology) at the ULHT Library and Knowledge Services' eJournal collection


Author(s) Kuru TH, Tulea C, Simpfendorfer T, Popeneciu V, Roethke M, Hadaschik BA, Hohenfellner M
Citation: Urologe (Ausg. A), January 2012, vol./is. 51/1(50-6), 0340-2592;1433-0563 (2012 Jan)
Publication Date: January 2012

Abstract: BACKGROUND: A key challenge for prostate cancer (PC) therapy is to exactly diagnose tumor lesions. In this context we describe a new stereotactic prostate biopsy system, which integrates pre-interventional MRI with peri-interventional ultrasound for targeted perineal prostate biopsies. Furthermore, the novel system allows exact documentation of biopsies in three dimensions. PATIENTS AND METHODS: Stereotactic biopsy was performed in 50 consecutive men with suspicion of PC [median age 67 years (42-77), mean PSA 8.9+/-.6.8 ng/ml, and mean prostate volume 51+/-.23.7 ml]. Twenty-five of these patients (50%) had already had a negative transrectal ultrasound (TRUS)-guided biopsy. All men underwent multiparametric, contrast-enhanced 3T MRI without endorectal coil. Suspicous lesions were marked before the obtained data were transferred to a novel stereotactic biopsy system. Using a custom-made biplane TRUS probe mounted on a stepper, 3-D ultrasound data were generated and fused with the MRI. As a result, suspicious MRI lesions were superimposed onto the TRUS data. Next, 3-D biopsy planning was performed including systematic biopsies from the peripheral zone of the prostate. According to local standards patients were treated with perioperative quinolone antibiotics and applied a rectal enema the evening before the procedure. Perineal biopsies were taken under live US imaging, and the location of each biopsy was documented in an individual 3-D model. Feasibility, safety, target registration error, and cancer detection were evaluated. RESULTS: The median number of biopsies taken per patient was 24 (12-36). In 27 men of the initial cohort of 50 consecutive patients presented here, biopsy samples showed PC (54%). In patients undergoing their first biopsy, cancerous lesions were diagnosed in 13 of 19 patients (68%). The result was positive in 36% of men undergoing a re-biopsy without previous cancer diagnosis (9/25). A positive correlation between MRI findings and histopathology was found in 72%. In MRI lesions marked as highly suspicious, the tumor detection rate was 100% (13/13). Looking at single cores from highly suspicious
lesions, 40 of 75 (53%) biopsies were positive. The target registration error of the first 1,159 biopsy cores was 1.7 mm. Regarding adverse effects, one patient experienced urinary retention and one patient a perineal hematoma. Urinary tract infections did not occur.

CONCLUSION: Perineal stereotactic prostate biopsies guided by the combination of MRI and ultrasound allow effective examination of suspicious MRI lesions. Each biopsy core taken is documented accurately for its location in 3-D enabling MRI validation and tailored treatment planning. The morbidity of the procedure was minimal.

Source: Medline

18. PCA3 score and prostate cancer diagnosis at repeated saturation biopsy. Which cut-off: 20 or 35?

Author(s) Pepe P., Fraggetta F., Galia A., Skonieczny G., Aragona G.

Citation: International Braz J Urol, 2012, vol./is. 38/4(489-495), 1677-5538;1677-6119 (2012)

Publication Date: 2012

Abstract: Purpose: To compare PCA3 score cut-off of 35 vs 20 in PCa diagnosis in patients undergoing repeated saturation prostate biopsy (SPBx). Material and Methods: From January 2010 to May 2011, 118 patients (median 62.5 years) with primary negative extended biopsy underwent a transperineal SPBx (median 30 cores) for persistent suspicion of PCa. The indications for repeated biopsy were: persistently high or increasing PSA values; PSA > 10 ng/mL, PSA values between 4.1-10 or 2.6-4 ng/mL with free/total PSA <= 25% and <= 20%, respectively; moreover, before performing SPBx urinary PCA3 score was evaluated. Results: All patients had negative DRE and median PSA was 8.5 ng/mL (range: 3.7-24 ng/mL). A T1c PCa was found in 32 patients (27.1%): PCA3 score was 59 (median; range: 7-201) in the presence of PCa and 35 (median; range: 3-253) in the absence of cancer (p < 0.05). In the presence of ASAP and HGPIN median PCA3 score was 109 (range: 42-253) and 40 (range: 30-140), respectively. Diagnostic accuracy, sensitivity, specificity, PPV and NPV of PCA3 score cut-off of 20 vs 35 in PCa diagnosis were 44.9 vs 50%, 90.6 vs 71.9%, 27.9 vs 41.8%, 31.9 vs 31.5% and 88.9 vs 80%, respectively. ROC analysis demonstrated an AUC for PCA3 >= 20 vs >= 35 of 0.678 and 0.634, respectively. Conclusions: Our data suggest that PCA3 is more useful as an exclusion tool; moreover, setting a PCA3 cut-off at 20 vs 35, would have avoided 22.9 vs 38.1% of biopsies while missing 9.4% and 28% diagnosis of PCa.

Source: EMBASE

19. A novel stereotactic prostate biopsy system integrating pre-interventional magnetic resonance imaging and live ultrasound fusion.


Citation: Journal of Urology, December 2011, vol./is. 186/6(2214-20), 0022-5347;1527-3792 (2011 Dec)

Publication Date: December 2011

Abstract: PURPOSE: We developed an effective way to precisely diagnose prostate cancer using a novel prostate biopsy system that integrates pre-interventional magnetic resonance imaging with peri-interventional ultrasound for perineal navigated prostate biopsy.MATERIALS AND METHODS: A total of 106 men with findings suspicious for prostate cancer (median age 66 years, prostate specific antigen 8.0 ng/ml and prostate volume 47 ml) underwent multiparametric 3 Tesla magnetic resonance imaging. Suspicious lesions were marked and data were transferred to the novel biopsy system. Using a custom-made biplane transrectal ultrasound probe mounted on a stepper we gathered 3-dimensional ultrasound data and fused them with magnetic resonance imaging data. As a result, suspicious magnetic resonance imaging lesions were superimposed over the transrectal ultrasound data. Three-dimensional biopsy planning was done, including systematic biopsies. Perineal biopsies were taken under live ultrasound guidance and the precise site of each biopsy was documented in 3 dimensions. We evaluated feasibility,
safety and cancer detection.

RESULTS: Prostate cancer was detected in 63 of 106 patients (59.4%). Magnetic resonance imaging findings correlated positively with histopathology in 71 of 103 patients (68.9%). In magnetic resonance imaging lesions marked as highly suspicious, the detection rate was 95.8% (23 of 24 cases). Lesion targeted cores had a significantly higher positivity rate than nontargeted cores. The procedural targeting error of the first 2,461 biopsy cores was 1.7 mm. Regarding adverse effects, 2 patients experienced urinary retention and 1 had a perineal hematoma. Urinary tract infections did not develop.

CONCLUSIONS: Perineal stereotactic prostate biopsies guided by the combination of magnetic resonance imaging and ultrasound enable effective examination of suspicious magnetic resonance imaging lesions. Each biopsy core taken is documented accurately for its location in 3 dimensions, enabling magnetic resonance imaging validation and tailored treatment planning. The morbidity of the procedure was minimal. Copyright A 2011 American Urological Association Education and Research, Inc. Published by Elsevier Inc. All rights reserved.

Source: Medline

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20. Prostate cancer in a young adult: A case report

Author(s) Yasuda M., Matsumura N., Okuda Y., Shimizu N., Yamamoto Y., Minami T., Hayashi T., Tsuji H., Nozawa M., Ishii T., Yoshimura K., Uemura H.

Citation: Acta Urologica Japonica, October 2011, vol./is. 57/10(585-588), 0018-1994 (October 2011)

Publication Date: October 2011

Abstract: We report a case of prostate cancer in a 41-year-old male. The patient initially visited another institution with a chief complaint of left breech pain. He was referred to our hospital for further investigation. Serum level of PSA was 267ng/ml and multiple bone metastases were found on bone scintigram. Digital rectal examination revealed a stony-hard prostate. Computed tomography showed multiple lung and lymph node metastases. Transperineal needle biopsy of the prostate revealed moderately differentiated adenocarcinoma (Gleason score 4 + 5) from bilateral lobes (the 3rd Edition). The patient was diagnosed with cT4N1M1c prostate cancer and maximal androgen blockade therapy was commenced.

Source: EMBASE

21. Characterizing clinically significant prostate cancer using template prostate mapping biopsy.

Author(s) Ahmed HU, Hu Y, Carter T, Arumainayagam N, Lecornet E, Freeman A, Hawkes D, Barratt DC, Emberton M

Citation: Journal of Urology, August 2011, vol./is. 186/2(458-64), 0022-5347;1527-3792 (2011 Aug)

Publication Date: August 2011

Abstract: PURPOSE: Definitions of prostate cancer risk are limited since accurate attribution of the cancer grade and burden is not possible due to the random and systematic errors associated with transrectal ultrasound guided biopsy. Transperineal prostate mapping biopsy may have a role in accurate risk stratification. We defined the transperineal prostate mapping biopsy characteristics of clinically significant disease. MATERIALS AND METHODS: A 3-dimensional model of each gland and individual cancer was reconstructed using 107 radical whole mount specimens. We performed 500 transperineal prostate mapping simulations per case by varying needle targeting errors to calculate sensitivity, specificity, and negative and positive predictive value to detect lesions 0.2 ml or greater, or 0.5 ml or greater. Definitions of clinically significant cancer based on a combination of Gleason grade and cancer burden (cancer core length) were derived. RESULTS: Mean +/-SD patient age was 61 +/-6.4 years (range 44 to 74) and mean prostate specific antigen was 9.7 +/-5.9 ng/ml (range 0.8 to 36.2). We reconstructed 665
foci. The total cancer core length from all positive biopsies for a particular lesion that detected more than 95% of lesions 0.5 ml or greater and 0.2 ml or greater was 10 mm or greater and 6 mm or greater, respectively. The maximum cancer core length that detected more than 95% of lesions 0.5 ml or greater and 0.2 ml or greater was 6 mm or greater and 4 mm or greater, respectively. We combined these cancer burden thresholds with dominant and nondominant Gleason pattern 4 to derive 2 definitions of clinically significant disease.CONCLUSIONS: Transperineal prostate mapping may provide an effective method to risk stratify men with localized prostate cancer. The definitions that we present require prospective validation. Copyright 2011 American Urological Association Education and Research, Inc. Published by Elsevier Inc. All rights reserved.

Source: Medline

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22. Obesity does not correlate with adverse pathologic findings on transperineal template-guided mapping biopsy of the prostate.

Author(s) Bittner N, Merrick GS, Stewart R, Andreini H, Taubenslag W, Curtis R, Butler WM, Wallner KE

Citation: Urologic Oncology, July 2011, vol./is. 29/4(398-404), 1078-1439;1873-2496 (2011 Jul-Aug)

Publication Date: July 2011

Abstract: BACKGROUND: Obesity has correlated with adverse pathologic features on prostate biopsy and may predispose to a higher rate of prostate cancer-related death after radical prostatectomy. In this study, we examine the potential relationship between body mass index (BMI) and histopathologic findings on transperineal template-guided mapping biopsy of the prostate (TTMB).METHODS: From January 2005 to January 2008, 244 consecutive patients underwent TTMB using an anatomic-based technique. The criteria for TTMB included previously negative transrectal ultrasound (TRUS) biopsy with persistently elevated PSA and/or diagnosis of ASAP, or HG-PIN. The study population was divided into 4 different BMI cohorts (BMI < 25, BMI 25-29.9, BMI 30-34.9, and BMI >= 35 kg/m(2)). Biopsy findings were compared between the various BMI cohorts using one-way analysis of variance (ANOVA) and the (2) test.RESULTS: Pre-TTMB clinical parameters, including PSA and prostate volume, were not significantly different between the various BMI cohorts. On average, the study population had undergone 1.7 TRUS biopsies before TTMB. Of the 244 study patients, 112 (45.9%), were diagnosed with prostate adenocarcinoma on TTMB. There was no difference in the rate of cancer detection between the different BMI cohorts. Among patients diagnosed with prostate cancer, BMI did not correlate with Gleason score or percent of positive biopsy cores. When the geography of biopsy-positive cores was analyzed, there were no statistically significant differences in cancer location among the different BMI groups.CONCLUSIONS: In this study, obesity did not predispose toward higher Gleason score, larger cancer volume, or geographic cancer distribution on repeat biopsy with TTMB. Copyright 2011 Elsevier Inc. All rights reserved.

Source: Medline

23. The role of 3-dimensional mapping biopsy in decision making for treatment of apparent early stage prostate cancer.

Author(s) Barqawi AB, Rove KO, Gholizadeh S, O'Donnell CI, Koul H, Crawford ED

Citation: Journal of Urology, July 2011, vol./is. 186/1(80-5), 0022-5347;1527-3792 (2011 Jul)

Publication Date: July 2011

Abstract: PURPOSE: We determined the impact of a grid based, transperineal 3-dimensional mapping biopsy on decision making for primary management of early stage prostate cancer.MATERIALS AND METHODS: We prospectively performed 3-dimensional mapping biopsy on 180 consecutive men who presented to our clinic between 2006 and 2009 with early stage, organ confined prostate cancer based on transrectal ultrasound
guided 10 to 12-core biopsy, and on 35 with prior negative transrectal ultrasound biopsies. RESULTS: At presentation median patient age was 60.5 years (range 43 to 77), median prostate specific antigen was 4.8 ng/ml (range 0.5 to 72.4) and median prostate volume was 35 cc (range 9 to 95). The median number of cores acquired by transrectal ultrasound and 3-dimensional mapping biopsy was 12 and 56, and the median number of positive cores was 1 and 2, respectively. We documented Gleason score upgrade in 49 of 180 cases (27.2%) and up-stage in 82 (45.6%). The incidence of urinary retention catheter requirement of greater than 48 hours was 3.2% and the incidence of transient orthostatic hypotension was 5%. No urinary tract infections were documented. A total of 38 men received radical extirpative therapy, 11 radiation and 45 cryotherapy while 60 enrolled in a targeted foci study and 5 underwent other focal investigational treatments. Post-mapping data on 12 men were not available for analysis. CONCLUSIONS: Three-dimensional mapping biopsy revealed that a significant portion of men initially diagnosed with apparently low risk disease harbored clinically significant cancers requiring more aggressive therapy. The technique also enabled a number of men with low risk disease to elect surveillance or another less morbid option.

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Author(s) Patel V, Merrick GS, Allen ZA, Andreini H, Taubenslag W, Singh S, Butler WM, Adamovich E, Bittner N

Citation: Urology, May 2011, vol./is. 77/5(1148-52), 0090-4295;1527-9995 (2011 May)

Publication Date: May 2011

Abstract: OBJECTIVES: To report the incidence of transition zone (TZ) cancer in patients undergoing transperineal template-guided mapping biopsy (TTMB) of the prostate gland. METHODS: Five hundred thirty-nine consecutive patients underwent TTMB by means of an anatomic technique with sampling of 24 defined prostate regions. The position of each biopsy core was recorded in 3 dimensions. For every patient, the location of each positive biopsy core, the number of positive cores, the Gleason score, the percentage involvement of each core, and the presence/absence of perineural invasion was documented. RESULTS: The median volumetric prostate volume was 56.0 cm(3) with an ellipsoid TZ volume of 20.1 cm(3). The median number of TTMB cores was 58 with a median of 11 TZ cores. Two hundred eighty-seven (53.2%) were diagnosed with prostate cancer. TZ cancer was detected in 130 (45.3%) of patients with prostate cancer but only 6 (4.6%) were confined to the TZ. Overall, 38.9% of TZ cores were positive for malignancy. Of the TZ cancers, 37 (28.5%), 64 (49.2%), and 29 (22.3%) were assigned Gleason scores 6, 7, and 8-10. Compared with a standard 12-core biopsy approach, the results of the TZ biopsy upgraded the Gleason score in 24.6% of patients. Only 4 cancers (3.1%) involving the TZ were classified as clinically insignificant. CONCLUSIONS: Although only 4.6% of cancers were confined to the TZ, 45.3% of all prostate cancer patients had TZ involvement. Copyright 2011 Elsevier Inc. All rights reserved.

Source: Medline

25. Trans-rectal versus trans-perineal saturation rebiopsy of the prostate: is there a difference in cancer detection rate?.


Citation: Urology, April 2011, vol./is. 77/4(921-5), 0090-4295;1527-9995 (2011 Apr)

Publication Date: April 2011

Abstract: OBJECTIVE: To test the hypothesis that there is no significant difference in the
rate of prostate cancer (PCa) detection rate between the transrectal and transperineal approach in men undergoing a saturation (24-core) prostate rebiopsy. METHODS: We evaluated 472 consecutive men who underwent a 24-core prostate rebiopsy at 2 tertiary referral centers. Of these, 70% (332) underwent a transrectal biopsy, and 30% (140) underwent a transperineal biopsy. Propensity score was used to match 280 patients with homogeneous characteristics; those represented the final study cohort. Univariable and multivariable logistic regression analyses were used to address the relationship between biopsy approach and PCa detection rate. Covariates consisted of age at biopsy, prostate-specific antigen, total prostate volume, digital rectal examination findings, histologic findings on previous biopsy, and the number of previous negative biopsy sets. RESULTS: Overall, PCa detection rate was 28.6%. There was no statistically significant difference in PCa detection rate between the transrectal and transperineal approach (31.4% vs 25.7%, respectively; P = .3). The type of approach was not an independent predictor of PCa detection rate at multivariable analyses (odds ratio = 0.61, P = .1). CONCLUSIONS: Transrectal and transperineal prostate saturation biopsies have a similar PCa detection rate in men undergoing a saturation rebiopsy. Both approaches can be offered to men undergoing a prostate rebiopsy without undermining the rate of PCa detection. Copyright 2011 Elsevier Inc. All rights reserved.

Source: Medline

26. Performance characteristics of different transrectal (TRB) and transperineal mapping prostate biopsy (TPB) strategies: A simulation on 96 cystoprostatectomy specimens (CPTs)

Author(s) Lecornet E., Ahmed H.U., Hu Y., Moore C.M., Nevoux P., Barratt D., Hawkes D., Villers A., Emberton M.

Citation: European Urology, Supplements, March 2011, vol./is. 10/2(177-178), 1569-9056 (March 2011)

Publication Date: March 2011

Abstract: Introduction & Objectives: The accuracy of TRUS-guided biopsies is acknowledged as being poor. However, the real accuracy remains unknown. This is because it has been tested either against itself (resulting in apparent over-performance) or against a reference standard that incorporates work-up bias (radical prostatectomy, where men must first test positive on TRUS biopsy). We report a simulation study in whole mount prostate assessment from a cystoprostatectomy series, which avoids each of these biases. Materials & Methods: A 3D model of the prostate and tumour foci was created using tumor and prostate volumes from 96 cancer containing prostates taken from 346 cystoprostatectomy specimens. Simulations compared 12-core standard TRUS biopsies, optimised TRUS biopsy (standard+2 transition zone cores) and template prostate mapping (TPM). Random localisation errors (RLE) of 5mm, 10mm and 15mm were included to simulate deviation due to errors from needle deflection and prostate movement. Area under receiver operating characteristics curves (AUC) were calculated for each sampling strategy, for the detection of significant prostate cancer (>=Gleason 7 and lesion volume >=0.2cc or >=0.5cc). Detection rates for a single lesion were also assessed. (Graph presented) Results: 215 prostate cancer foci were present in 96 prostates. The AUC for detecting significant cancer within a prostate is summarised in the Figures a-c. The detection rate of the 21 significant lesions >=0.5cc was 100%, 74% and 47% for TPM, 14-core TRUS, and 12-core TRUS, respectively. For the 24 lesions 0.2- 0.5cc, detection rates were 90%, 35% and 19%, respectively (Figure d). Conclusions: Against a reference standard that closely represents disease found in a screened population, TRUS-guided biopsy performed poorly. Some improvement could be achieved by use of additional cores and also by anterior sampling. Template Prostate Mapping misses very few clinically significant cancers due to its ability to reduce the random error and fix the systematic error to a 5mm sampling frame. Source: EMBASE


Author(s) Chun FK, Epstein JI, Ficarra V, Freedland SJ, Montironi R, Montorsi F, Shariat
SF, Schroder FH, Scattoni V

Citation: European Urology, December 2010, vol./is. 58/6(851-64), 0302-2838;1873-7560 (2010 Dec)

Publication Date: December 2010

Abstract: CONTEXT: The number and location of biopsy cores and the interpretation of prostate biopsy in different clinical settings remain the subjects of continuing debate. OBJECTIVE: Our aim was to review the current evidence regarding the performance and interpretation of initial, repeat, and saturation prostatic biopsy. EVIDENCE ACQUISITION: A comprehensive Medline search was performed using the Medical Subject Heading search terms prostate biopsy, prostate cancer, detection, transrectal ultrasound (TRUS), nomogram, and diagnosis. Results were restricted to the English language, with preference given to those published within the last 3 yr. EVIDENCE SYNTHESIS: At initial biopsy, a minimum of 10 but not >18 systematic cores are recommended, with 14–18 cores in glands >= 50 cm³. Biopsies should be directed laterally, and transition zone (TZ) cores are not recommended in the initial biopsy setting. Further biopsy sets, either as an extended repeat or as a saturation biopsy (>= 20 cores) including the TZ, are warranted in young and fit men with a persistent suspicion of prostate cancer. An immediate repeat biopsy is not indicated for prior high-grade prostatic intraepithelial neoplasia diagnosis given an adequate extended initial biopsy. Conversely, biopsies with atypical glands that are suspicious but not diagnostic of cancer should be repeated within 3–6 mo. Overall recommendations for further biopsy sets (a third set or more) cannot be made. Transrectal ultrasound-guided systematic biopsies represent the standard-of-care method of prostate sampling. However, transperineal biopsies are an up-to-standard alternative. CONCLUSIONS: The optimal prostatic biopsy regimen should be based on the individualized clinical setting of the patient and should follow the minimum standard requirements reported in this paper. Copyright 2010 European Association of Urology. All rights reserved.

Source: Medline

28. A case of primary malignant lymphoma of the prostate presenting as urinary retention

Author(s) Kinouchi T., Kinoshita T., Kobayashi M., Ueda T., Inoue H., Takada T., Hara T.

Citation: Acta Urologica Japonica, October 2010, vol./is. 56/10(589-592), 0018-1994 (October 2010)

Publication Date: October 2010

Abstract: We report a case of primary malignant lymphoma of the prostate. An 84-year-old man was referred to our hospital with a chief complaint of urinary retention. Magnetic resonance imaging showed a large mass below the bladder and in front of the rectum. Histological and immunocytochemical studies of transperineal biopsy of the prostate showed diffuse large B-cell non-Hogkin’s lymphoma. Radiological assessment of the disease confirmed stage IV according to the Ann Arbor classification. Although the tumor was markedly reduced in size after four cycles of combination chemotherapy with cyclophosphamide, Adriamycin, vincristine, and prednisolone, he died with brain metastasis 4 months after the diagnosis.

Source: EMBASE

29. Can Sonovue targeted biopsy replace extended or saturation biopsy in prostate cancer diagnosis? Our experience at primary and repeat biopsy

Author(s) Pepe P., Candiano G., Pennisi M., Aragona F.

Citation: Archivio italiano di urologia, andrologia : organo ufficiale [di] Societa italiana di ecografia urologica e nefrologica / Associazione ricerche in urologia, September 2010, vol./is. 82/3(155-159), 1124-3562 (Sep 2010)

Publication Date: September 2010

Abstract: To evaluate the detection rate of prostate cancer (PCa) at initial and repeat
biopsy in patients submitted to Sonovue targeted biopsy vs extended or saturation prostate biopsy (SPBx). From November 2007 to April 2008 60 patients aged 64 years (median) underwent extended TRUS-guided transperineal prostate biopsy. Indications to biopsy were: abnormal DRE, PSA > 10 ng/mL; PSA included between 2.6 and 4.0 and 4.1 and 10 ng/mL with %free/total PSA < or = 20% and < or = 25%, respectively. In 45 and 15 men prostate biopsy was performed as primary and repeated procedure respectively; median PSA was 8.3 ng/mL vs 11.8 ng/mL and digital rectal examination was positive in 9 vs 3 patients, respectively. Before performing extended or SPBx scheme in case of primary (19 cores) and repeated (28 cores) procedure, prostate areas characterized by absence of enhancement after Sonovue (2.4 mg) administration on gray scale during continuous harmonic imaging (HI) contrast-enhanced ultrasound (CEUS) were considered suspicious for PCa and submitted to targeted biopsy. 3.5 (median) targeted biopsies were performed in the peripheral zone of 22 men. In patients who underwent primary and repeated biopsy PCa was detected in 20/45 (44.5%) and 3/15 (20%) cases, but Sonovue detected only 6/20 (30%) and 1/3 (33.4%) of cancers, respectively. Sensitivity and specificity of Sonovue in diagnosing PCa was equal to 30.0% and 61.5% (primary biopsy) vs 33.4% and 54.5% (repeated biopsy). Based on its low diagnostic accuracy, Sonovue CEUS HI targeted biopsy can not replace extended or SPBx in diagnosing PCa.

Source: EMBASE

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30. Detection rate and factors predictive the presence of prostate cancer in patients undergoing ultrasonography-guided transperineal saturation biopsies of the prostate.

Author(s) Novara G, Boscolo-Berto R, Lamon C, Fracalanza S, Gardiman M, Artibani W, Ficarra V

Citation: BJU International, May 2010, vol./is. 105/9(1242-6), 1464-4096;1464-410X (2010 May)

Publication Date: May 2010

Abstract: OBJECTIVES: To assess the prostate cancer detection rate and predictive factors for prostate cancer after transrectal ultrasonography (TRUS)-guided transperineal saturation re-biopsies of the prostate, using a 24-core scheme.PATIENTS AND METHODS: We evaluated 143 consecutive patients undergoing TRUS-guided transperineal saturation re-biopsy of the prostate using a 24-core scheme. The inclusion criteria were a previous negative biopsy and a prostate-specific antigen (PSA) level of > or =10.0 ng/mL, or of 4.0-10.0 ng/mL with a free/total ratio of <20% or an abnormal digital rectal examination or previous high-grade prostatic intraepithelial neoplasia (HGPIN) or atypical small acinar proliferation (ASAP).RESULTS: The mean (sd) age of the patients was 66.5 (6.1) years and the median (interquartile range) PSA level was 9.0 (6.1-12.8) ng/mL. The number of previous biopsies was one in 59% of patients, two in 26% and three or more in 15%. We detected prostate cancer in 26%, ASAP in 5.6% and HGPIN in 2.1%. The cancer detection rate was 47%, 25.5% and 14% for prostate volumes of <40, 40-60 and > or =60 mL, respectively (P = 0.002). On a multivariate analysis the total prostate volume (40-60 vs <40 mL, hazard ratio 5.683; >60 vs <40 mL, hazard ratio 6.965; P = 0.01) was the only significant predictor of prostate cancer at saturation biopsy.CONCLUSIONS: TRUS-guided transperineal saturation re-biopsy of the prostate using a 24-core scheme resulted in a high cancer detection rate also in patients who had had two or more previous biopsies. The total prostate volume was the only predictor of prostate cancer.

Source: Medline

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31. Performance of transperineal template-guided mapping biopsy in detecting prostate cancer in the initial and repeat biopsy setting.

Author(s) Taira AV, Merrick GS, Galbreath RW, Andreini H, Taubenslag W, Curtis R, Butler WM, Adamovich E, Wallner KE
Abstract: Transrectal ultrasound (TRUS) biopsy can miss 20-30% of clinically significant cancers. We evaluate an alternative approach-transperineal template-guided mapping biopsy (TTMB) in the initial and repeat biopsy setting. From January 2005 through September 2008, 373 consecutive men underwent TTMB (294 men with ≥1 prior negative biopsy and 79 men as the initial biopsy). The location of each positive biopsy core, number of positive cores, and percent involvement of each core was recorded. Cancer detection rate for the initial biopsy was 75.9%. For men with 1, 2, and ≥3 prior negative biopsies detection rates were 55.5%, 41.7%, and 34.4%, respectively. In all, 55.5% of the cancers identified were Gleason ≥7. The majority of the cancers were multifocal. There was no significant change in the number of positive cores or Gleason score as the number of prior biopsies increased. The anterior and apical aspects of the prostate were among the most common cancer locations. TTMB provides a high rate of cancer detection as initial and repeat biopsy. TTMB was particularly effective at diagnosing anterior and apical cancer. TTMB may have particular application for men considering active surveillance, with prior negative TRUS biopsies, and those considering subtotal gland or other minimally invasive treatments.

Source: Medline
Available in fulltext from Prostate Cancer and Prostatic Diseases at EBSCOhost

32. Histological correlation between transperineal template guided prostate biopsy and radical prostatectomy specimens

Author(s) Katz D.J., Godoy G., Nogueira L., Scardino P.T., Eastham J.A., Coleman J.A.

Citation: BJU International, February 2010, vol./is. 105/(17), 1464-4096 (February 2010)

Abstract: Introduction: Our objective was to determine the accuracy of stereotactic transperineal prostatic mapping biopsy (TPMBx) in identifying and localizing prostate tumours. Materials and methods: 36 men underwent TPMBx and of these 12 proceeded to radical prostatectomy (RP). Biopsy data and whole-mount RP tumour maps were arranged into 8 discrete matching octants (right/left; base/apex; anterior/posterior). Therefore 96 regions were analysed. In each octant, the tumours were assessed for size and grade. Biopsy accuracy characteristics were performed for eachoctant including sub-analysis by location. Results: Of 96 octants, 49 and 52 contained tumour in the RP and biopsy specimens, respectively. TPMBx had an overall 84% sensitivity, 77% specificity, 79% PPV, 82% NPV, and 80% accuracy for detection of tumours in all octants. TPMBx failed to identify tumour in 8 octants (16%), 6 of which were anterior. Undetected octants occurred in 6 men, 5 of which had tumours detected in at least one ipsilateral octant. Median size between detected (11 mm, Interquartile range [IQR]: 7-16) and undetected tumours in each octant (12 mm, IQR: 11-13) was not statistically significant (P = 0.6). Per octant, Gleason grade concordance between biopsy and RP was 68% (n = 28). Upgrading on RP occurred in 10/13 discordant sectors (77%). Per specimen, the biopsy missed the highest Gleason grade in 2 patients. Sub-analysis by hemi-section (anterior/posterior, right/left, and apex/base) revealed lowest accuracy for tumour detection in the anterior portion of the gland (75%). Conclusion: TPMBx appears accurate for localization and characterization of tumours. It performs well for laterality and less well in detecting anterior based tumours.

Source: EMBASE
Available in fulltext from BJU International at EBSCOhost
Available in fulltext from BJU International (was British Journal of Urology) at the ULHT Library and Knowledge Services’ eJournal collection

**Author(s)** Yunkai Z, Yaqing C, Ren W, Yongchang Z

**Citation:** Clinical Imaging, January 2010, vol./is. 34/1(43-6), 0899-7071;1873-4499 (2010 Jan-Feb)

**Publication Date:** January 2010

**Abstract:** PURPOSE: The purpose of this study was to determine the utility of routine transperineal transition zone (TZ) biopsies. MATERIALS AND METHODS: A total of 1028 consecutive patients underwent transrectal ultrasound-guided prostate biopsies for the first time. Sextant biopsies and additional two-core TZ biopsies were performed. RESULTS: Prostate cancer detection rate was increased by sampling two additional cores from TZ. CONCLUSIONS: Transition zone biopsies might be reserved to improve the detection rate of prostate cancer in transperineal biopsy protocol. Copyright 2010 Elsevier Inc. All rights reserved.

**Source:** Medline

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34. [On extended biopsy of the prostatic gland]

**Author(s)** Chepurov A.K., Vladimirov V.G., Zarinskaia S.A., Meshkov V.V., Kobaladze K.M., Iremashvili V.V.

**Citation:** Urologii &x0361;a (Moscow, Russia : 1999), January 2010, vol./is. /1(52-55), 1728-2985 (2010 Jan-Feb)

**Publication Date:** January 2010

**Abstract:** The aim of our trial was to investigate correlation between the size of the prostate and probability of cancer detection with transperineal biopsy. Transperineal 12-sample biopsy of the prostate was made in 203 men aged 48-58 years (mean age 68.0 +/- 8.6 years) suspected of having prostatic cancer (PC). Total detection of cancer was 33.5%. PC patients had higher levels of PSA, more frequent alterations at rectal palpation and transrectal ultrasound investigation, while mean size of the prostate was the same in cancer and cancer-free patients. Differences in PC detection rate in patients with different sizes of the prostate were statistically insignificant. Use of sextant biopsy could not detect PC in 15 males (22.1%) cases. Thus, there is no correlation between the size of the prostatic gland and diagnostic value of transperineal biopsy obtaining 12 tissue samples. The above data do not support the necessity of extended biopsy in patients with large prostate.

**Source:** EMBASE

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**Author(s)** Suzuki M, Kawakami S, Asano T, Masuda H, Saito K, Koga F, Fujii Y, Kihara K

**Citation:** International Journal of Urology, December 2009, vol./is. 16/12(930-5), 0919-8172:1442-2042 (2009 Dec)

**Publication Date:** December 2009

**Abstract:** OBJECTIVES: To examine whether the transrectal ultrasound-guided transperineal 14-core prostate biopsy can be carried out safely in diabetic men and to determine adequate antimicrobial prophylaxis protocol in this setting. METHODS: The present study included 539 men, 135 with concurrent diabetes mellitus (DM) and 404 without DM, who underwent transperineal extended 14-core biopsy due to elevated prostate-specific antigen > or = 2.5 ng/mL and/or abnormal digital rectal examination. Any complication requiring prolonged hospitalization or rehospitalization during the 4-week post-biopsy period was considered major. All other complications were considered minor. Intensity of antimicrobial prophylaxis was prospectively reduced in a stepwise manner down to single dose of oral levofloxacin. RESULTS: Except for DM, there was no significant difference in clinical background between the diabetic and non-diabetic men. The procedure was completed in all revealing prostate cancer in 42% of the diabetic men and 36% of the non-diabetic men (P = 0.23). Incidence of minor or major complications was not significantly different between the two groups. Minor complications were observed in 15.6% and 16.6% of each group, respectively, with voiding disturbance being the most common.
No infectious major complication was observed regardless of the presence of DM. In the diabetic men, there was no statistical difference in incidence of biopsy-related complications according to modality of DM treatment, HbA1c level or antimicrobial prophylaxis protocol.

**CONCLUSIONS:** Transperineal 14-core biopsy can be carried out without major infectious complications in diabetic men. Oral levofloxacin 300 mg once before the procedure seems to represent an effective antimicrobial prophylaxis in diabetic men without other risk of infection.

**Source:** Medline

Available in fulltext from *International Journal of Urology* at EBSCOhost

### 36. Local anesthesia with block of the sexual nerve in conduction of transperineal biopsy of the prostate

**Author(s)** Chepurov A.K., Vladimirov V.G., Zarinskaia S.A., Meshkov V.V., Kabaladze K.M., Iremashvili V.V.

**Citation:** Urologia (Moscow, Russia : 1999), November 2009, vol./is. /6(35-38), 1728-2985 (2009 Nov-Dec)

**Publication Date:** November 2009

**Abstract:** We studied 137 males (mean age 68 +/- 8.6 years) with suspected prostatic cancer who had undergone transperineal biopsy of the prostate (12 tissue samples). The biopsy was made under local anesthesia either as paraprostatic block (n=76, group 1) or paraprostatic block in combination with block of the sexual nerve (n=61, group 2). Pain intensity was evaluated with visual analogue scales. Induction of anesthesia was more painful in group 2, three other stages--in group 1. Mean pain at biopsy was significantly (p < 0.001) lower in group 2. Thus, addition of sexual nerve blockade to standard paraprostatic block increases efficacy of anesthesia in conduction of transperineal biopsy of the prostate.

**Source:** EMBASE

### 37. Three-dimensional prostate mapping biopsy has a potentially significant impact on prostate cancer management.

**Author(s)** Onik G, Miessau M, Bostwick DG

**Citation:** Journal of Clinical Oncology, 10 September 2009, vol./is. 27/26(4321-4326), 0732183X

**Publication Date:** 10 September 2009

**Abstract:** PURPOSE: To compare a new staging, three-dimensional prostate mapping biopsy (3D-PMB) method with traditional transrectal ultrasound (TRUS) biopsy and assess its possible impact on patient management. PATIENTS AND METHODS: One hundred eighty patients with unilateral cancer on TRUS biopsy, who were considering conservative management, underwent restaging with 3D-PMB. The 3D-PMB was carried out transperineally using a brachytherapy grid under TRUS guidance. Biopsies were taken every 5 mm throughout the volume of the prostate, and labeling of the specimen coordinates allowed accurate reconstruction of the location and extent of a patient's cancer. RESULTS: 3D-PMB obtained a median of 50 cores (standard deviation, +/- 20.61). One hundred ten patients (61.1%) were positive bilaterally, and 41 patients (22.7%) had Gleason scores increased to 7 or higher. Thirty-six patients had negative results on 3D-PMB. Complications of 3D-PMB were self-limited and included 14 patients (7.7%) who required short-term indwelling catheter drainage and two patients with hematuria, one of whom required overnight bladder irrigation. CONCLUSION: 3D-PMB is a transperineal biopsy that can be safely used to accurately stage prostate cancer patients. At the present time, when patient management is increasingly based on the extent and characteristics of prostate cancer, 3D-PMB could have a profound effect on patient management.

**Source:** CINAHL

Available in fulltext from *Journal of Clinical Oncology* at the ULHT Library and Knowledge Services’ eJournal collection
38. Prostate carcinoma spatial distribution patterns in Chinese men investigated with systematic transperineal ultrasound guided 11-region biopsy.

Author(s) Yan W, Li H, Zhou Y, Huang Z, Rong S, Xia M, Ji Z, Chen J, Jiang Y

Citation: Urologic Oncology, September 2009, vol./is. 27/5(520-4), 1078-1439;1873-2496 (2009 Sep-Oct)

Publication Date: September 2009

Abstract: OBJECTIVES: To evaluate prostate cancer spatial distribution patterns with transperineal ultrasound navigated 11-region prostate biopsy template in a Chinese screening population.

METHODS: From May 2004 to December 2007, 215 patients with a median prostate-specific antigen (PSA) level of 21.0 ng/ml were diagnosed with prostate cancer through transperineal ultrasound guided 11-region template prostate biopsy at Peking Union Medical College Hospital. The characteristics of our sample cancer spatial distribution were assessed in relation with different PSA levels.

RESULTS: The mean positives for the cancer of regions 1-10 and region 11 (the apical region) were 61.2% vs. 66.4% in patients whose PSA > 20 ng/ml (P = 0.29), and 35.7% vs. 47.6% in patients with PSA <or= 20 ng/ml (P = 0.001). The positives for cancer contained within the anterior and posterior parts were 96.5% vs. 90.9% (P = 0.10) in patients with PSA > 20 ng/ml and 75.2% vs. 75.2% in patients with PSA <or= 20 ng/ml (P = 1.00).

CONCLUSIONS: The current study suggests that prostate carcinoma foci are more frequently localized in the apical region in patients with normal to moderately increased PSA. Special attention should be paid to the apical region during the selection process of biopsy regions for this group of patients.

Source: Medline

39. The comparison between transperineal and transrectal ultrasound-guided prostate needle biopsy

Author(s) Chae Y., Kim Y.-J., Kim T., Yun S.J., Lee S.-C., Kim W.-J.

Citation: Korean Journal of Urology, February 2009, vol./is. 50/2(119-124), 2005-6737;2005-6745 (February 2009)

Publication Date: February 2009

Abstract: Purpose: Prostate biopsy is a conventional method for the detection of prostate cancer in men with suspicious findings. However, there is no universal agreement on which method is the better approach to the prostate, with regard to cancer detection rate and complication rate. In this prospective randomized study, we compared cancer detection rates and complication rates between transperineal (TP) and transrectal (TR) prostate biopsy.

Materials and Methods: Between March 2006 and December 2007, we analyzed 200 Korean men. One hundred patients underwent randomized TP prostate biopsy and 100 patients underwent TR prostate biopsy. All biopsies were extended 12-core biopsies. With both approaches, 12 biopsy specimens were obtained systematically from the peripheral and transitional zones, including the apex, base, and transitional zone. The patient's subjective pain scale was measured by use of visual analogue scales. Immediately after the biopsy, the pain score was independently recorded by the patients. One week later, various complications were measured by answer note. Results: The overall cancer detection rate was 22% (22 of 100 patients) with TR prostate biopsy and 29% (29 of 100 patients) with TP prostate biopsy. Considering the prostate cancer detection rate, there were no significant differences between the groups for prostate-specific antigen (PSA), age, body mass index (BMI), and prostate volume. Apart from the cancer detection rate and complication rate, the pain scale, in each different approach, was statistically meaningful.

Conclusions: There were no significant differences in the cancer detection rate or complication rate between TP and TR prostate needle biopsy. However, with regard to pain relief and complication rates, TR prostate needle biopsy is preferable. The Korean Urological Association, 2009.

Source: EMBASE
40. Stereotactic transperineal prostate biopsy.

**Author(s)** Moran BJ, Braccioforte MH  
**Citation:** Urology, February 2009, vol./is. 73/2(386-8), 0090-4295;1527-9995 (2009 Feb)  
**Publication Date:** February 2009  
**Abstract:** This study investigates the detection rate of nonpalpable, isoechoic occult prostate malignancy using a stereotactic transperineal prostate biopsy (STPB) technique in patients with a previously negative transrectal ultrasound-guided prostate biopsy.  
**Source:** Medline

41. Evaluating Localized Prostate Cancer and Identifying Candidates for Focal Therapy

**Author(s)** Sartor A.O., Hricak H., Wheeler T.M., Coleman J., Penson D.F., Carroll P.R., Rubin M.A., Scardino P.T.  
**Citation:** Urology, December 2008, vol./is. 72/6 SUPPL.(S12-S24), 0090-4295;1527-9995 (December 2008)  
**Publication Date:** December 2008  
**Abstract:** Can focal therapy successfully control prostate cancer? Also, if so, which patients should be considered eligible? With limited data available from relatively few patients, these questions are difficult to answer. At this writing, the most likely candidates for focal therapy are patients with low-risk, small-volume tumors, located in 1 region or sector of the prostate, who would benefit from early intervention. The difficulty lies in reliably identifying these men. The larger number of cores obtained in each needle biopsy session has increased both the detection of prostate cancer and the potential risk of overtreating many patients whose cancers pose very little risk to life or health. Urologists typically perform at least a 12-core template biopsy. Although the debate continues about the optimal template, laterally and peripherally directed biopsies have been shown to improve the diagnostic yield. However, as many as 25% of tumors arise anteriorly and can be missed with peripherally directed techniques. Prostate cancer tends to be multifocal, even in its earliest stages. However, the secondary cancers are usually smaller and less aggressive than the index cancer. They appear similar to the incidental cancers found in cystoprostatectomy specimens and appear to have little effect on prognosis in surgical series. When a single focus of cancer is found in 1 core, physicians rightly suspect that more foci of cancer are present in the prostate. Assessing the risk in these patients is challenging when determined by the biopsy data alone. To predict the presence of a very low-risk or "indolent" cancer, nomograms have been developed to incorporate clinical stage, Gleason grade, prostate-specific antigen levels, and prostate volume, along with the quantitative analysis of the biopsy results. Stereotransal "mapping" or "saturation" biopsies have been advocated to detect cancers missed or underestimated by previous transrectal biopsies. This approach could provide the accurate staging, grading, and tumor localization needed for a focal therapy program. Nevertheless, for men with minimal cancer who are amenable to active surveillance or focal therapy, consensus about the most accurate biopsy strategy has not yet been reached. Imaging, particularly magnetic resonance imaging and magnetic resonance spectroscopic imaging, has been used to assess men with early-stage prostate cancer. Large-volume cancers can be seen reasonably well, but small lesions have been difficult to detect reliably or measure accurately. Factors such as voxel resolution, organ movement, biopsy artifact, and benign changes have limited the consistent estimation of the quantitative tumor volume. Nevertheless, magnetic resonance imaging and magnetic resonance spectroscopic imaging can aid in evaluating patients with prostate cancer being considered for focal therapy by providing additional evidence that the patient does not harbor an otherwise undetected high-risk, aggressive cancer. In some cases, imaging can usefully identify the location of even a limited-sized index cancer. When imaging findings are substantiated by mapping biopsy results, confidence in the accurate characterization of the cancer is enhanced. Correlating the imaging results with tissue changes during and after treatment can be of use in monitoring the ablative effects in the prostate and in assessing for tumor recurrence. More work is necessary before staging studies can uniformly characterize a prostate cancer before therapy, much less reliably identify and locate small-volume cancer within the prostate. However, exploring the role of
focal ablation as a therapeutic option for selected men with low-risk, clinically localized, prostate cancer need not await the emergence of perfectly accurate staging studies, any more than the application of radical surgery or radiotherapy have. Modern biopsy strategies, combined with optimal imaging and nomograms to estimate the pathologic stage and risk, taken together, provide a sound basis for the selection of appropriate patients for entry into prospective clinical trials of focal therapy. 2008 Elsevier Inc. All rights reserved.

Source: EMBASE

42. Evaluation of a novel precision template-guided biopsy system for detecting prostate cancer.

Author(s) Megwalu II, Ferguson GG, Wei JT, Mouraviev V, Polascik TJ, Taneja S, Black L, Andriole GL, Kibel AS

Citation: BJU International, August 2008, vol./is. 102/5(546-50), 1464-4096;1464-410X (2008 Aug 5)

Publication Date: August 2008

Abstract: OBJECTIVE: To explore the ability of a novel transrectal ultrasonography (TRUS) device (TargetScan, Envisioneering Medical Technologies, St. Louis MO) that creates a three-dimensional map of the prostate and calculates an optimal biopsy scheme, to accurately sample the prostate and define the true extent of disease, as standard TRUS-guided prostate biopsy relies on the operator to distribute the biopsy sites, often resulting in under- and oversampling regions of the gland. PATIENTS AND METHODS: In a multicentre retrospective chart review evaluating patients who had a TargetScan prostate biopsy between January 2006 and June 2007, we determined the overall cancer detection rate in all patients and in subgroups based on prostate specific antigen level, digital rectal examination, and indication for biopsy. We assessed the pathological significance of cancer detected, defined as a Gleason score of > or = 7, positive margins, extracapsular disease or > 20% tumour volume in the prostatectomy specimen. We also evaluated the concordance in Gleason score between the biopsy and prostatectomy specimen. RESULTS: Cancer was detected in 50 (35.7%) of the 140 patients biopsied, including 39 (47.6%) with no previous biopsies. Of 23 prostatectomy specimens, 20 (87%) had pathologically significant disease. The biopsy predicted the prostatectomy Gleason score in 12 patients (52%), overestimated in two (9%), underestimated in eight (35%), and biopsy Gleason score could not be assigned in one (4%). CONCLUSIONS: Template-guided biopsy potentially produces a higher cancer detection rate and more accurate assessment of grade. Prostatectomy specimens did not have a high rate of pathologically insignificant disease.

Source: Medline

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Available in print at Lincoln County Hospital Professional Library

Available in print at Grantham Hospital Staff Library

43. Examination of prostate biopsy among Japanese with less than 4.0 ng/ml prostate specific antigen - Usefulness of free/total PSA ratio

Author(s) Tsukigi M., Suzuki K.-I., Numahata K., Ono K., Sugano O., Hoshi S., Tomita Y.

Citation: Acta Urologica Japonica, August 2008, vol./is. 54/8(531-536), 0018-1994 (August 2008)

Publication Date: August 2008

Abstract: The low specificity of the prostate specific antigen (PSA) test is considered to be a problem when PSA measurement alone is performed to detect cancer. Therefore, we examined a method to decrease the number of unnecessary biopsies while maintaining the power of the test by using PSA, PSA free/total ratio (PSAf/t), and digital rectal examination (DRE). The subjects were 232 patients with PSA levels of 4.0 ng/ml or less who underwent
biopsy for prostate cancer. An endorectal ultrasound perineal biopsy was conducted, and the average biopsy core number was 21. Cancer was detected in 37 of the 232 subjects. Receiver operating characteristic curves of PSA and PSAf/t were subsequently determined. Although the area under the curve (AUC) was 0.56 for PSA alone, the AUC increased to 0.75 when the factor of positive data in DRE was taken into account. Although the AUC was 0.62 for PSAf/t alone, when the factor of positive data in DRE was added as for PSA, the AUC increased to 0.79. In addition, as a result of examining the combination of PSA, PSAf/t and DRE, the condition of the biopsy for prostate cancer in the cases with PSA of 4.0 ng/ml was determined as follows: PSA should be 3.1 ng/ml or more and PSAf/t 27% or less, or the result of DRE should be positive. Based on these criteria, the sensitivity, specificity and detection rate of cancer increased to 0.919, 0.436 and 23.2%, respectively. We consider that this approach will be useful.

Source: EMBASE

44. The morbidity of transperineal template-guided prostate mapping biopsy.

Author(s) Merrick GS, Taubenslag W, Andreini H, Brammer S, Butler WM, Adamovich E, Allen Z, Anderson R, Wallner KE

Citation: BJU International, June 2008, vol./is. 101/1(1524-9), 1464-4096;1464-410X (2008 Jun)

Publication Date: June 2008

Abstract: OBJECTIVE: To evaluate the effect of transperineal template-guided prostate mapping biopsy (TTMB) on urinary, bowel and erectile function. PATIENTS AND METHODS: In all, 129 men had TTMB; a median of 56 biopsy cores were obtained per patient. Tamsulosin (0.8 mg daily) was initiated 2 days before TTMB and continued for 2 weeks. The International Prostate Symptom Score (IPSS), Rectal Function Assessment Score (R-FAS), International Index of Erectile Function (IIEF)-6 and the postvoid residual volume (PVR) were assessed at baseline and after 30 days, except for the IPSS, which was also assessed at 7 days. Several variables were evaluated as predictors of TTMB-induced morbidity. RESULTS: The mean patient age was 64.7 years with a mean prostate volume of 74.3 mL; 60 men (46.5%) were diagnosed with prostate cancer. After TTMB, 39.4%, 7.1% and 1.6% of patients remained catheter-dependent at 0, 3 and 6 days. The median catheter-dependency was 0, 1, 2 and 3 days for prostate volumes of <60, 60-90, 90-120 and >120 mL, respectively. No patient remained catheter-dependent for >12 days or required a transurethral resection secondary to TTMB. The mean IPSS before TTMB was 10.4, and was 4.6 and 3.8 at 7 and 30 days. At baseline and 30 days the mean PVR was 35 and 40 mL, and the median R-FAS and IIEF scores for patients potent before TTMB were 2.0 and 2.2, and 27.0 and 26.0, respectively. CONCLUSIONS: TTMB is a promising procedure for diagnosing prostate cancer. TTMB-related morbidity differs from that of standard TRUS biopsy primarily in the incidence of temporary urinary retention, and is comparable in terms of urinary, bowel and erectile function.

Source: Medline

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45. Optimal approach for prostate cancer detection as initial biopsy: prospective randomized study comparing transperineal versus transrectal systematic 12-core biopsy.

Author(s) Hara R, Jo Y, Fujii T, Kondo N, Yokoyama T, Miyaji Y, Nagai A

Citation: Urology, February 2008, vol./is. 71/2(191-5), 0090-4295;1527-9995 (2008 Feb)

Publication Date: February 2008

Abstract: OBJECTIVES: Transperineal and transrectal prostate biopsy are both used for
prostate cancer detection. However, which approach is superior remains unknown. In this study, we performed a prospective randomized study to compare the efficacy of transperineal versus transrectal 12-core initial prostate biopsy.

**METHODS:** From May 2003 to October 2005, a prospective randomized study of transperineal versus transrectal 12-core biopsy (126 and 120 patients, respectively) was conducted in 246 patients with a prostate-specific antigen level of 4.0 to 20.0 ng/mL. All procedures were performed with the patient in the lithotomy position, with the transperineal and transrectal approach performed with spinal anesthesia (0.5% bupivacaine) or a caudal block (1% lidocaine), respectively. With both approaches, eight biopsy specimens were obtained systematically from the peripheral zone, including the apex, and four from the transition zone.

**RESULTS:** The cancer detection rate was 42.1% (53 of 126 patients) with the transperineal approach and 48.3% (58 of 120 patients) with the transrectal approach (P = 0.323). For all patients undergoing transperineal and transrectal biopsy, the cancer core rate (cancer core number/biopsy core number) was 13.7% (207 of 1512 cores) and 14.4% (208 of 1440 cores), respectively (P = 0.566). Apart from headache, presumably related to the spinal anesthesia, no significant differences were found in the complications between the two groups.

**CONCLUSIONS:** No significant differences were found in the cancer detection rate, cancer core rate, or complications between the two approaches. We believe that the preferred approach as an initial prostate biopsy is the transrectal approach, which does not require spinal anesthesia or another burdensome process.

**Source:** Medline

46. A prospective randomized comparison of diagnostic efficacy between transperineal and transrectal 12-core prostate biopsy.

**Author(s)** Takenaka A, Hara R, Ishimura T, Fujii T, Jo Y, Nagai A, Fujisawa M

**Citation:** Prostate Cancer & Prostatic Diseases, 2008, vol./is. 11/2(134-8), 1365-7852;1476-5608 (2008)

**Publication Date:** 2008

**Abstract:** The aim of this study is to elucidate the diagnostic efficacy between transperineal and transrectal 12-core prostate biopsy for prostate cancer. We prospectively randomized 200 consecutive men into two groups to undergo systematic prostate biopsy. Overall positivity for cancer was similar (47% by transperineal and 53% by transrectal; P=0.480). However, in case with ‘gray zone’ PSA (from 4.1 to 10.0 ng/ml), significantly more cores were positive when approach was transperineal, especially among transition zone cores. Therefore, urologist preferences are sufficient for choosing an approach, except for a possible small advantage of transperineal biopsy when PSA is in gray zone.

**Source:** Medline

Available in fulltext from Prostate Cancer and Prostatic Diseases at EBSCOhost

47. Appropriate patient selection in the focal treatment of prostate cancer: the role of transperineal 3-dimensional pathologic mapping of the prostate--a 4-year experience.

**Author(s)** Barzell WE, Melamed MR

**Citation:** Urology, December 2007, vol./is. 70/6 Suppl(27-35), 0090-4295;1527-9995 (2007 Dec)

**Publication Date:** December 2007

**Abstract:** This study was undertaken to evaluate the usefulness of transperineal mapping biopsy of the prostate as a staging procedure in the appropriate selection of patients for treatment with focal cryoablation. Between October 2001 and January 2006, a total of 80 patients underwent extensive template-guided transperineal pathologic mapping of the prostate (3-DPM), in conjunction with repeat transrectal ultrasound (TRUS)-guided biopsies. Before 3-DPM was performed, the following clinical variables were recorded: age, prostate-specific antigen (PSA), percent free PSA, total prostate volume, transition zone volume, Gleason score, TNM stage, number of positive cores, and maximum percent of positive cores. Results of 3-DPM were compared with those of TRUS-guided biopsies to
determine patient suitability for focal cryoablation; this served as the study end point. Of 80 study patients, 43 (54%) were deemed unsuitable for focal cryoablation. When compared with 3-DPM in assessing patient suitability for focal cryoablation repeat TRUS-guided biopsies yielded a false-negative rate of 47%, a sensitivity of 54%, and a negative predictive value of 49%. None of the pre-3-DPM variables correlated significantly with patient suitability for focal ablation. Treatment selected by the 80 study patients included total gland cryoablation (30%), expectant management (23%), radical prostatectomy (18%), focal cryoablation (11%), external irradiation (10%), brachytherapy (6%), and combined external irradiation and brachytherapy (1%); 1% were undecided about treatment selection. In this study, we demonstrated that 3-DPM (1) effectively excluded patients with clinically significant unsuspected cancer outside the area destined to be ablated, (2) appeared to do so more effectively than repeat TRUS-guided biopsies, and (3) was able to precisely locate the site of the cancer to be selectively ablated.

Source: Medline
Available in print at Pilgrim Hospital Staff Library


Author(s) Li H, Yan W, Zhou Y, Ji Z, Chen J

Citation: Urology, December 2007, vol./is. 70/6(1157-61), 0090-4295;1527-9995 (2007 Dec)

Publication Date: December 2007

Abstract: OBJECTIVES: To assess the prostate cancer detection rate and safety of transperineal ultrasound-guided saturation biopsies of the prostate using an 11-region template of the gland in a Chinese screening population.METHODS: A total of 303 patients (mean age, 69.7 years) were prospectively enrolled in this study to undergo an 11-region template-guided transperineal saturation biopsy of the prostate. The inclusion criteria included a prostate-specific antigen level of 4.0 ng/mL or greater, suspicious findings on the digital rectal examination, or abnormal prostate gland findings on ultrasonography, computed tomography, or magnetic resonance imaging. The median prostate-specific antigen level was 13.7 ng/mL (range, 0.2 to 100), and the median prostate volume was 47.0 cm3 (range, 7 to 190).RESULTS: A mean of 23.7 cores (range, 11 to 44) were obtained, with an overall prostate cancer detection rate of 37.6% (114 of 303). The cancer detection rate in the groups with a prostate-specific antigen level of 0 to 4.0, 4.1 to 10.0, 10.1 to 20.0, 20.1 to 30.0, 30.1 to 70.0, and greater than 70.1 ng/mL was 22.2% (4 of 18), 8.2% (6 of 73), 21.6% (22 of 102), 48.4% (15 of 31), 68.4% (26 of 38), and 100% (41 of 41), respectively. No serious complications occurred during the procedure.CONCLUSIONS: Transperineal ultrasound-guided saturation biopsy of the prostate is safe and feasible. Moreover, the application of an 11-region template of the prostate resulted in an encouraging cancer detection rate.

Source: Medline
Available in print at Pilgrim Hospital Staff Library

49. Improved accuracy in predicting the presence of Gleason pattern 4/5 prostate cancer by three-dimensional 26-core systematic biopsy.

Author(s) Numao N, Kawakami S, Yokoyama M, Yonese J, Arisawa C, Ishikawa Y, Ando M, Fukui I, Kihara K

Citation: European Urology, December 2007, vol./is. 52/6(1663-8), 0302-2838;0302-2838 (2007 Dec)

Publication Date: December 2007

Abstract: OBJECTIVES: To evaluate whether three-dimensional 26-core (3D26) prostate biopsy improves the accuracy in predicting the presence of Gleason pattern 4/5 cancer compared with extended transrectal 12-core (TR12) or transperineal 14-core (TP14) biopsy schemes.METHODS: We studied 143 consecutive men in whom prostate cancer was diagnosed by the 3D26 biopsy and who underwent radical prostatectomy (RP) without

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neoadjuvant treatment. All histologic grading was reevaluated by a single pathologist according to the 2005 International Society of Urological Pathology Consensus Conference on Gleason Grading. Cancer grade was categorized into high grade (Gleason pattern 4/5 cancer present) and non-high grade (absent) in both biopsy and RP specimens. Since TR12 and TP14 biopsy schemes represent subsets of the 3D26 biopsy, we could compare these schemes directly in an identical patient cohort.

RESULTS: There was a grade agreement between 3D26 biopsy and RP in 132 (92.3%) cancers. Grade concordance between biopsy and RP was significantly better in 3D26 biopsy than in TR12 (83.5%, p=0.025) biopsy. Risk of underestimation of cancer grade by 3D26 biopsy (26.5%) was significantly lower than that by TP14 (51.4%, p=0.034). Grade concordance between 3D26 biopsy and RP was not according to clinical variables including prostate volume, clinical stage, prostate-specific antigen (PSA), and PSA density.

CONCLUSIONS: We demonstrated that the 3D26 biopsy can accurately predict the presence of Gleason pattern 4/5 cancer on RP specimens with a high concordance rate of 92.3%, a value significantly higher than that between extended TR12 biopsy and RP specimens.

Source: Medline

50. Prostate cancer distribution in patients diagnosed by transperineal template-guided saturation biopsy.


Citation: European Urology, September 2007, vol./is. 52/3(715-23), 0302-2838:0302-2838 (2007 Sep)

Publication Date: September 2007

Abstract: OBJECTIVES: To determine the prostate cancer incidence, anatomic distribution, Gleason score profile, and tumor burden in patients diagnosed by transperineal template-guided saturation biopsy (TTSB).

MATERIALS AND METHODS: One hundred and two patients underwent TTSB; all but one patient had undergone at least one prior negative TRUS biopsy. Criteria for inclusion included an elevated PSA and/or the diagnosis of ASAP or high-grade PIN on prior biopsy. The prostate gland was divided into 24 regional biopsy locations. The median number of biopsy cores was 50. Multiple clinical parameters were evaluated as predictors for prostate cancer diagnosis.

RESULTS: The mean patient age was 64.8 yr with a mean PSA of 9.1 ng/ml and a prostate volume of 78.6 cm(3). On average, patients had undergone 2.1 prior negative TRUS biopsies with a mean of 22.4 core biopsies. Prostate cancer was diagnosed in 43 patients (42.2%) with a Gleason score distribution of 6-9. No anatomic region of the prostate gland was spared of cancer. In patients with prostate cancer, an average of 9.9 cores were involved. In multivariate analysis, prostate volume was the best predictor for prostate cancer diagnosis.

CONCLUSIONS: TTSB diagnosed prostate cancer in 42.2% of patients. Considerable anatomic variability in prostate cancer distribution was documented. On the basis of this and other reports, cancer eradication will depend on treatment of the entire prostate gland.

Source: Medline

51. Transperineal prostate biopsy under magnetic resonance image guidance: a needle placement accuracy study

Author(s) Blumenfeld P., Hata N., DiMaio S., Zou K., Haker S., Fichtinger G., Tempany C.M.

Citation: Journal of magnetic resonance imaging : JMRI, September 2007, vol./is. 26/3(688-694), 1053-1807 (Sep 2007)

Publication Date: September 2007

Abstract: PURPOSE: To quantify needle placement accuracy of magnetic resonance image (MRI)-guided core needle biopsy of the prostate.

MATERIALS AND METHODS: A total of 10 biopsies were performed with 18-gauge (G) core biopsy needle via a percutaneous transperineal approach. Needle placement error was assessed by comparing the coordinates of preplanned targets with the needle tip measured from the intraprocedural coherent gradient echo images. The source of these errors was
subsequently investigated by measuring displacement caused by needle deflection and needle susceptibility artifact shift in controlled phantom studies. Needle placement error due to misalignment of the needle template guide was also evaluated. RESULTS: The mean and standard deviation (SD) of errors in targeted biopsies was 6.5 +/- 3.5 mm. Phantom experiments showed significant placement error due to needle deflection with a needle with an asymmetrically beveled tip (3.2-8.7 mm depending on tissue type) but significantly smaller error with a symmetrical bevel (0.6-1.1 mm). Needle susceptibility artifacts observed a shift of 1.6 +/- 0.4 mm from the true needle axis. Misalignment of the needle template guide contributed an error of 1.5 +/- 0.3 mm. CONCLUSION: Needle placement error was clinically significant in MRI-guided biopsy for diagnosis of prostate cancer. Needle placement error due to needle deflection was the most significant cause of error, especially for needles with an asymmetrical bevel. (c) 2007 Wiley-Liss, Inc.

Source: EMBASE

52. Direct comparison between transrectal and transperineal extended prostate biopsy for the detection of cancer.

Author(s) Kawakami S, Yamamoto S, Numao N, Ishikawa Y, Kihara K, Fukui I

Citation: International Journal of Urology, August 2007, vol./is. 14/8(719-24), 0919-8172;0919-8172 (2007 Aug)

Publication Date: August 2007

Abstract: AIM: To establish whether extended transrectal (TR) and extended transperineal (TP) biopsies are equivalent in detecting prostate cancer.METHODS: Due to an elevated prostate-specific antigen (PSA) greater than 2.5 ng/mL or abnormal digital rectal examination findings, 783 men underwent a transrectal ultrasound-guided three-dimensional 26-core biopsy, a combination of TR 12-core and TP 14-core biopsies. Using recursive partitioning, the best combination of sampling sites that gave the highest cancer detection rate at a given number of biopsy cores was selected either with a TR or a TP approach. The cancer detection rate and characteristics of detected cancers were compared between the TP 14-core and the TR 12-core biopsies and between selected subset biopsy schemes.RESULTS: Prostate cancer was detected in 283 of the 783 men (36%). There was no statistical difference in cancer detection rate or in the characteristics of detected cancers between TP 14-core and TR 12-core biopsies. As far as the best combination of sampling sites was selected, there was no statistical difference in cancer detection rates or in the characteristics of detected cancers between the TP and the TR subset biopsy schemes up to 12 cores. TP and TR biopsies performed equally, regardless of a history of negative biopsy, a digital rectal examination finding, the PSA level or the prostate volume.CONCLUSIONS: We demonstrated for the first time that extended TP biopsy is as effective as its TR counterpart in detecting cancer and the characteristics of detected cancers, as far as sampling sites are selected to maximize the cancer detection rate.

Source: Medline
Available in fulltext from International Journal of Urology at EBSCOhost


Citation: European Urology, March 2007, vol./is. 51/3(675-82; discussion 682-3), 0302-2838;0302-2838 (2007 Mar)

Publication Date: March 2007

Abstract: OBJECTIVES: To explore an optimal combination of sampling sites to detect prostate cancer in a repeat biopsy setting.METHODS: A transrectal ultrasound-guided systematic three-dimensional 26-core biopsy (3D26PBx), a combination of transrectal 12 and transperineal 14 core biopsies, was performed in 235 Japanese men with prior negative biopsy. Using recursive partitioning, we evaluated cancer detection of all possible
combinations of sampling sites and selected the combination that provides the highest cancer detection rate at a given number of biopsy cores. RESULTS: Prostate cancer was detected in 87 of the 235 (37%) men. The 3D26PBx improved cancer detection by 89% relative to the conventional transrectal sextant biopsy. Neither Gleason score nor percentage of Gleason 4/5 cancers differed between cancers with and without positive cores within the transrectal sextant-sampling sites. A three-dimensional combination of transrectal and transperineal approaches outperformed either transrectal or transperineal approach alone. Recursive partitioning revealed that a three-dimensional 16-core (transrectal eight cores plus transperineal eight cores) biopsy could detect all the cancers with the minimum number of cores. CONCLUSIONS: We propose a three-dimensional combination of transrectal eight cores taken from the far lateral peripheral zone and the parasagittal base, and transperineal eight cores taken from the anterior and posterior apex and the transition zone as an optimal set of sampling sites for repeat biopsy.

Source: Medline

54. Extensive transperineal template biopsies of prostate: modified technique and results.

Author(s) Bott SR, Henderson A, Halls JE, Montgomery BS, Laing R, Langley SE

Citation: Urology, November 2006, vol./is. 68/5(1037-41), 0090-4295;1527-9995 (2006 Nov)

Publication Date: November 2006

Abstract: OBJECTIVES: To describe the modified technique and results of extensive transperineal template prostate biopsies in men with a high risk of prostate cancer in whom repeated transrectal biopsies are not diagnostic. METHODS: Men who had a rising prostate-specific antigen (PSA) level and had at least two sets of benign octant biopsies or two or more prior biopsies containing high-grade prostatic intraepithelial neoplasia or atypical small acinar proliferation were included. A biplanar transrectal ultrasound probe was attached to a brachytherapy stepping unit and a standard 0.5-cm brachytherapy template was positioned over the perineum. In the transverse image, the prostate was divided into right and left and anterior, middle, and posterior regions, and three to five transperineal biopsy cores were taken in each of the six regions through the template. RESULTS: Sixty men underwent extensive transperineal template biopsies. Their mean age was 64 years (SD 6.4), the median PSA level was 12.9 ng/mL (range 4.6 to 35.7), and the median prostate volume was 54 cm3 (range 34 to 199). Cancer was detected in 23 men (38%), of whom 17 (74%) had Gleason grade 6, 5 (21%) Gleason grade 7, and 1 (4%) Gleason grade 9 disease. Cancer was identified in the anterior region of the prostate alone in 12 men (60%). One man required overnight admission for hematuria and two developed urinary retention; no cases of sepsis developed. CONCLUSIONS: In men with a clinical suspicion of prostate cancer, but benign or equivocal prostate biopsies, extensive transperineal template biopsy of the prostate is a useful diagnostic tool. It allows sampling of the whole prostate in a systematic and safe fashion.

Source: Medline

Available in print at Pilgrim Hospital Staff Library

55. Re-biopsy of the prostate using a stereotactic transperineal technique.

Author(s) Moran BJ, Braccioforte MH, Conterato DJ

Citation: Journal of Urology, October 2006, vol./is. 176/4 Pt 1(1376-81; discussion 1381), 0022-5347;0022-5347 (2006 Oct)

Publication Date: October 2006

Abstract: PURPOSE: In this study we investigated the detection rate and morbidity of stereotactic transperineal prostate re-biopsy with 3-dimensional mapping for diagnosis of nonpalpable isoechoic occult prostate malignancy. MATERIALS AND METHODS: A total of 180 consecutive patients with continued increasing total prostate specific antigen and at least 1 prior benign transrectal prostate biopsy underwent stereotactic transperineal
prostate biopsy at a single outpatient institution between April 2004 and March 2006. Similar to a prostate brachytherapy procedure, patients were placed in the dorsal lithotomy position. With the patient under general anesthesia, and using transrectal ultrasound, a perineal brachytherapy template and stabilizing device, the prostate was positioned on the implant grid. It was equally divided into 8 sections (octants) according to x and y coordinates on the mid gland axial image. The midplanes of axial and sagittal prostate gland images for each patient determined the x, y and z coordinates that would occupy each octant. Tissue cores were initially obtained from the apical octants, followed by identical x and y coordinates of the basilar octants. Specimens from each specific octant were placed in 1 of 8 specimen jars and pathological review was reported accordingly.

RESULTS: Stereotactic transperineal prostate biopsy yielded positive biopsies identifying adenocarcinoma in 68 of 180 (38%) patients. Acute urinary retention developed in 18 of 180 (10%) patients requiring an indwelling urinary catheter upon discharge home. In all patients estimated blood loss was less than 5 cc and median pain score was 1 of 10.

CONCLUSIONS: Stereotactic transperineal prostate biopsy is extremely well tolerated and useful for diagnosis of nonpalpable isoechoic occult prostate malignancy. Additionally, stereotactic transperineal prostate biopsy provides comprehensive tissue sampling with accurate 3-dimensional mapping of malignancy in this select group of patients.

Source: Medline

Available in fulltext from Journal of Urology at the ULHT Library and Knowledge Services' eJournal collection

56. Needle core length is a quality indicator of systematic transperineal prostate biopsy.

Author(s) Ficarra V, Martignoni G, Novella G, Cerruto MA, Galfano A, Novara G, Pea M, Artibani W

Citation: European Urology, August 2006, vol./is. 50/2(266-71), 0302-2838;0302-2838 (2006 Aug)

Publication Date: August 2006

Abstract: OBJECTIVE: To analyse the length of needle cores sampled as a quality indicator in systematic transperineal prostate biopsy. We assessed the correlation of core length with the other clinical and topographic parameters.

MATERIAL AND METHODS: We prospectively evaluated data from 509 consecutive patients who underwent a first set of transrectal ultrasound-guided transperineal prostate biopsy for suspected prostate cancer. Fourteen cores were sampled from each patient. Needle cores were stretched and placed in tissue cassettes between two nylon meshes according to the pre-embedding methods of prostate needle biopsy specimens. For single biopsy core, the measurement of length (in millimetres) and any percentage of cancer in the biopsy specimen were reported.

RESULTS: The mean length of 7,126 analysed cores was 14.14+/−4.35mm. All cores were longer than 10mm. The mean length of needle cores sampled did not correlate with patient age, total prostate-specific antigen value, digital rectal examination, and prostate volume. The whole mean length of the six samples from the peripheral zone of the right lobe was higher than the mean corresponding value of the six samples from the left lobe peripheral zone (p<0.001). The transperineal approach allows a greater sampling of the prostate apex than of the midgland and prostate base (p<0.001).

CONCLUSIONS: The length of the needle cores sampled during transperineal prostate biopsy fulfils the parameters of quality required by pathologists for an appropriate evaluation of the biopsy specimen.

Source: Medline


Citation: European Urology, May 2006, vol./is. 49/5(827-33), 0302-2838;0302-2838 (2006 May)
**58. Role of transperineal six-core prostate biopsy in patients with prostate-specific antigen level greater than 10 ng/mL and abnormal digital rectal examination findings.**

**Author(s)** Luciani LG, De Giorgi G, Valotto C, Zanin M, Bierti S, Zattoni F

**Citation:** Urology, March 2006, vol./is. 67/3(555-8), 0090-4295;1527-9995 (2006 Mar)

**Abstract:** OBJECTIVES: To define whether six-core biopsies still have a role in patients presenting with prostate-specific antigen (PSA) levels greater than 10 ng/mL and abnormal digital rectal examination (DRE) findings. Recent studies have suggested that the six-core biopsy is inadequate for the diagnosis of prostate cancer; however, it remains controversial whether an increased number of cores is justified in all patients. METHODS: From June 2002 to February 2005, 122 (18.8%) of 650 patients underwent prostate biopsy because of a PSA level greater than 10 ng/mL and abnormal DRE findings. All patients underwent transperineal ultrasound-guided prostate biopsy in a standardized fashion: a six-core biopsy was performed first, followed by six additional cores during the same session, four in the peripheral and two in the transition zone. RESULTS: The detection rate in patients with a PSA level greater than 10 ng/mL and abnormal DRE findings was 72.1% (88 of 122) and 75.4% (92 of 122) using the 6-core and 12-core biopsy, respectively. One case of tumor was missed by the six-core biopsy among patients with a PSA level greater than 15 ng/mL and abnormal DRE findings. No cases of tumor were missed by six-core biopsy in the group with a PSA level greater than 20 ng/mL and abnormal DRE findings. CONCLUSIONS: Six-core biopsy provided a similar cancer detection rate compared with 12-core biopsy in patients with PSA levels greater than 10 ng/mL and abnormal DRE findings. An initial approach with 6-core biopsy is reasonable in patients with a PSA level greater than 10 ng/mL and abnormal DRE findings and is advocated in those with PSA greater than 20 ng/mL and abnormal DRE findings.

**Source:** Medline

Available in print at Pilgrim Hospital Staff Library

**59. Transperineal extended biopsy improves the clinically significant prostate cancer detection rate: a comparative study of 6 and 12 biopsy cores.**

**Author(s)** Takenaka A, Hara R, Hyodo Y, Ishimura T, Sakai Y, Fujioka H, Fujii T, Jo Y, Fujisawa M

**Citation:** International Journal of Urology, January 2006, vol./is. 13/1(10-4), 0919-8172;0919-8172 (2006 Jan)

**Abstract:** BACKGROUND: We evaluated the improvement in the rate of prostate cancer...
detection when using a 12-core transperineal biopsy protocol including transitional zone biopsy.

METHODS: Between April 2003 and November 2004, 247 consecutive men underwent transperineal systemic 12-core biopsy of the prostate. Six cores were obtained at the peripheral zone, four at the transitional zone and two at the apex. We examined the cancer detection rate in each of the 12 cores, and also determined the improvement of cancer detection resulting from the extensive 12-core versus standard 6-core biopsy.

RESULTS: Using the extensive 12-core biopsy, prostate cancer was detected in 98 cases (39.7%). Prostate-specific antigen (PSA), PSA density, the positive rate in digital rectal examination and transrectal ultrasound findings were significantly higher in the prostate cancer group than in the non-prostate cancer group, and prostate volume was larger in non-prostate cancer group. Every site showed almost the same positive rate, between 17.8 and 21.5%. There were 20 cases which were positive in the extended biopsy, but negative in the sextant. The detection improved significantly (20.4%). The improvement of cancer detection in extended biopsy was better in men with PSA levels of 10 ng/mL or less (28.9%), PSA density 0.3 or less (25.8%), negative digital rectal examination (23.3%), and negative transrectal ultrasound (21.6%). Of these twenty patients, no cases with insignificant tumor were detected in the six prostatectomy cases. In particular, three cases of the six were transitional-zone-only cancer.

CONCLUSION: Transperineal extended 12-core biopsy including 4 transitional zone cores is a more useful procedure than transperineal 6-core biopsy. Routine transitional zone biopsy, that is different from transrectal biopsy, might be useful for detecting biologically significant cancer.

Source: Medline
Available in fulltext from International Journal of Urology at EBSCOhost

60. [Analysis of efficacy of extensive systematic transperineal TRUS-guided cor biopsy of the prostate].

Author(s) Nazarenko G.I., Darenkov S.P., Khitrova A.N., Zyrianova O.N., Kuchin G.A., Mel'chenko D.S., Bogdanova E.G.

Citation: Urologiia (Moscow, Russia), January 2006, vol./is. /1(50-5), 1728-2985;1728-2985 (2006 Jan-Feb)

Publication Date: January 2006

Abstract: The paper presents the technique of extensive systemic transperineal TRUS-guided cor biopsy of the prostate. Some aspects of the patients' safety and quality of biopsy cores are considered. The analysis of TNM stages of the detected cancers (55 cases out of 142 patients who have undergone systemic biopsy) showed 65.4% of local cancer (T1-2). The quality of cores was adequate for histological examination in 92.8% cases. None serious complications was reported. Only in two of ten patients subjected to radical prostatectomy stage T2 was changed to stage T3 in the absence of metastases to regional lymph nodes and distant metastases.

Source: Medline

61. Analysis of efficacy of extensive systematic transperineal TRUS-guided cor biopsy of the prostate

Author(s) Nazarenko G.I., Darenkov S.P., Khitrova A.N., Zyrianova O.N., Kuchin G.A., Mel'chenko D.S., Bogdanova E.G.

Citation: Urologiia, January 2006, vol./is. /1(50-55), 1728-2985 (2006 Jan-Feb)

Publication Date: January 2006

Abstract: The paper presents the technique of extensive systemic transperineal TRUS-guided cor biopsy of the prostate. Some aspects of the patients' safety and quality of biopsy cores are considered. The analysis of TNM stages of the detected cancers (55 cases out of 142 patients who have undergone systemic biopsy) showed 65.4% of local cancer (T1-2). The quality of cores was adequate for histological examination in 92.8% cases. None serious complications was reported. Only in two of ten patients subjected to radical prostatectomy stage T2 was changed to stage T3 in the absence of metastases to regional lymph nodes and distant metastases.
62. The potential impact of prostate volume in the planning of optimal number of cores in the systematic transperineal prostate biopsy.

**Author(s)** Ficarra V, Novella G, Novara G, Galfano A, Pea M, Martignoni G, Artibani W

**Citation:** European Urology, December 2005, vol./is. 48/6(932-7), 0302-2838;0302-2838 (2005 Dec)

**Publication Date:** December 2005

**Abstract:** OBJECTIVES: We compared the detection rates of different transperineal prostate biopsy protocols with the aim to optimize the number of cores to sample according to prostate volume. MATERIAL AND METHODS: From October 2002 to October 2004 we evaluated 480 consecutive patients with PSA between 2.5 and 20 ng/ml undergoing the first set of prostate biopsy. All patients underwent a 14-core TRUS-guided transperineal prostate biopsy, including 12 cores in the peripheral and two in the transitional zone. The detection rate of the 14-core scheme was compared to the one of the other biopsy schemes obtained through the exclusion of pairs of cores. Data were stratified according to the different TRUS estimated prostate volumes. RESULTS: The detection rate of the standard sextant was 35.2%, while those of the 8-core schemes ranged from 37.1 to 38.8%. The 10-core schemes yielded detection rates of 39.6-40.8% and the protocol with 12 biopsies in the peripheral zone diagnosed prostate cancer in 42.1% of the patients. In patients with <30 cc prostate volume, the detection rate of the 14-core scheme was 43.8% and resulted statistically overlapping to the 8-peripheral cores protocol. In patients with 30.1-50 cc prostate volume a 12-peripheral core biopsy reproduced the results of the 14-core sampling. In prostates larger than 50 cc, an even more extensive procedure was mandatory, considering the low detection rate of the 14-core scheme (24.2%). CONCLUSION: Transperineal prostate biopsy is a safe procedure with a very low complication rate and high cancer detection rate. Prostate volume is the most relevant variable in the planning of the optimal number of cores in the extensive first biopsy set. A protocol with more than 8 peripheral cores) is recommended only in patients with prostate volume larger than 30 cc.

Source: Medline

63. Clinical staging of prostate cancer: a computer-simulated study of transperineal prostate biopsy.


**Citation:** BJU International, November 2005, vol./is. 96/7(999-1004), 1464-4096;1464-4096 (2005 Nov)

**Publication Date:** November 2005

**Abstract:** OBJECTIVE: To identify the precise location of prostate cancer within the gland and thus possibly permit more aggressive therapy of the lesion, while potentially sparing the noncancerous gland from ablative therapy. MATERIALS AND METHODS: Three-dimensional "solid" computer models were reconstructed for 86 autopsy specimens and 20 stage T1c radical prostatectomy specimens. Transperineal biopsies were simulated for grid sizes of 5-mm (method A) and 10-mm (method B) with an 18 G, 23-mm long biopsy needle. One or two biopsies per grid point were obtained for a total of 12-108 biopsies, depending on the size of the prostate. Clinically threatening cancers were defined as having volumes of \( > 0.5 \) mL or Gleason sum \( > 7 \). RESULTS: Method A detected significantly more carcinomas than method B in both the autopsy and prostatectomy specimens (autopsy, 72 vs 51; prostatectomy, 50 vs 32, both \( P < 0.001 \)). Method A also detected more clinically threatening cancers found at autopsy (38/40 vs 31/40, \( P = 0.008 \)). Among autopsy patients with negative sextant biopsies whose disease was localized to one side, method A detected 72% and method B detected 29-43% (\( P < 0.001 \)). CONCLUSIONS: The results of this computer simulation show that 5- and 10-mm grid biopsies detect three-quarters and a third, respectively, at autopsy, of patients with the disease localized to one side of the prostate, which may be useful when planning highly selective ablative treatments in the
64. Extensive biopsy using a combined transperineal and transrectal approach to improve prostate cancer detection.

**Author(s)** Watanabe M, Hayashi T, Tsushima T, Irie S, Kaneshige T, Kumon H

**Citation:** International Journal of Urology, November 2005, vol./is. 12/11(959-63), 0919-8172;0919-8172 (2005 Nov)

**Publication Date:** November 2005

**Abstract:** PURPOSE: Previous studies have indicated that 6-core transrectal prostate biopsy misses a considerable number of cancers. We performed an extensive biopsy protocol of 12-core sampling using both transperineal and transrectal approaches to determine the impact on the cancer detection rate.MATERIALS AND METHODS: We prospectively evaluated 402 men who underwent 6-core transperineal and 6-core transrectal biopsies simultaneously due to abnormal digital rectal examination (DRE) and/or elevated prostate-specific antigen (PSA) levels of 4.0 ng/mL or greater. Using the transperineal approach we obtained four cores from the bilateral peripheral zone targeting the lateral and parasagittal areas and two cores from the bilateral transition zone. The following transrectal biopsy was performed traditionally. We compared cancer detection rate between the extended 12-core procedure and conventional 6-core transperineal and transrectal groups in terms of total PSA and DRE findings.RESULTS: Using the extensive combined method, prostate cancer was detected in 195 cases (48.5%) and the detection rate significantly increased 7.2% and 8.5% compared to the transperineal and transrectal groups, respectively. According to PSA levels and DRE findings, the cancer detection rate by the combined method, prostate cancer was detected in 195 cases (48.5%) and the detection rate significantly increased 7.2% and 8.5% compared to the transperineal and transrectal groups, respectively. CONCLUSIONS: The extensive 12-core method significantly improved the overall cancer detection rate and was especially efficient for men with PSA levels of 4-10 ng/mL accompanied by a negative DRE finding.

**Source:** Medline

Available in fulltext from International Journal of Urology at EBSCOhost

65. Cancer core distribution in patients diagnosed by extended transperineal prostate biopsy.

**Author(s)** Satoh T, Matsumoto K, Fujita T, Tabata K, Okusa H, Tsuboi T, Arakawa T, Irie A, Egawa S, Baba S

**Citation:** Urology, July 2005, vol./is. 66/1(114-8), 0090-4295;1527-9995 (2005 Jul)

**Publication Date:** July 2005

**Abstract:** OBJECTIVES: To perform systemic 22-core transperineal ultrasound-guided template prostate biopsies in patients with previous negative transrectal ultrasound-guided prostate biopsy findings and evaluate the cancer core distribution.METHODS: Between April 2001 and December 2003, 128 men underwent systemic ultrasound-guided biopsy using the transperineal template technique. All patients had undergone at least one previous set of biopsies. Prostate biopsy was performed transperineally using an 18-gauge biopsy needle driven by a spring-loaded device. Four biopsies were obtained anterior to posterior from each of four coronal planes in the mid-region, and three biopsies were obtained anterior to posterior from each of two coronal planes in the apical...
RESULTS: Of the 128 patients, 29 (22.7%) had cancer according to an extended transperineal biopsy. Patients with prostate cancer had significantly greater prostate-specific antigen (PSA) levels (11.4 versus 7.6 ng/mL, \( P = 0.0125 \)), smaller transition zone volumes (12.7 versus 21.2 cm\(^3\), \( P = 0.0012 \)), smaller prostate glands (31.5 versus 44.0 cm\(^3\), \( P = 0.0015 \)), and greater PSA density (0.36 versus 0.19 ng/mL/cm\(^3\), \( P < 0.0001 \)). The cancer core rates in the mid and apical parts of the anterior region (5.3% and 8.0%) were significantly greater than in the mid and apical parts of the posterior region (3.3% and 3.6%, \( P = 0.0297 \) and \( P = 0.0132 \), respectively).

CONCLUSIONS: The results of our study have shown that transperineal approaches are appropriate for sampling from the anterior half of the prostate gland. In patients in whom the diagnosis of prostate cancer is suspected, we believe that systematic 22-core transperineal ultrasound-guided template prostate biopsy might be the next optional diagnostic step after an initial negative prostate biopsy.

Source: Medline
Available in print at Pilgrim Hospital Staff Library

66. Differences in tumor core distribution between palpable and nonpalpable prostate tumors in patients diagnosed using extensive transperineal ultrasound-guided template prostate biopsy.

Author(s) Demura T, Hioka T, Furuno T, Kaneta T, Gotoda H, Muraoka S, Sato T, Mochizuki T, Nagamori S, Shinozaka N

Citation: Cancer, May 2005, vol./is. 103/9(1826-32), 0008-543X;0008-543X (2005 May 1)

Publication Date: May 2005

Abstract: BACKGROUND: The authors performed extensive transperineal ultrasound-guided template prostate biopsies to investigate carcinoma core distribution.METHODS: Between August 2000 and May 2004, 371 men underwent template biopsies. Three hundred twelve patients had not undergone a previous biopsy (first group) and 59 had undergone previous transrectal sextant biopsies (repeat group). Of the 312 patients in the first group, 236 had normal digital rectal examination (DRE) findings (DRE- first group) and 76 patients had an abnormal DRE (DRE+ first group). A mean of 20.1 biopsy cores (range, 9-38 cores) was taken from the entire prostate. The region > 2.0 cm from the rectal face of the prostate was defined as the anterior region and the remaining area was defined as the posterior region.RESULTS: In the DRE- first group, the carcinoma core rate (number of tumor cores/number of biopsy cores) in the anterior region (7.2%) did not differ from that of the posterior region (7.3%) (\( P = 0.9635 \)). However, in the DRE+ first group, the carcinoma core rate in the posterior region (22.0%) was found to be higher than in the anterior region (13.2%) (\( P < 0.0001 \)). In the repeat group, the carcinoma core rate in the posterior region (3.1%) was significantly (\( P = 0.0008 \)) lower than that exhibited in the anterior region (7.2%).CONCLUSIONS: The results of the current study suggest that nonpalpable prostate carcinoma is distributed equally within the entire prostate, although palpable carcinoma is distributed mainly in the posterior region and many of the tumor foci in the anterior region may be missed by a transrectal sextant biopsy. The examination of radical prostatectomy specimens is required to prove these results. (c) 2005 American Cancer Society.

Source: Medline
Available in print at Lincoln County Hospital Professional Library


Author(s) Pinkstaff DM, Igel TC, Petrou SP, Broderick GA, Wehle MJ, Young PR

Citation: Urology, April 2005, vol./is. 65/4(735-9), 0090-4295;1527-9995 (2005 Apr)

Publication Date: April 2005

Abstract: OBJECTIVES: To review the technique of transperineal saturation prostate biopsy and to update our results on patients at high risk of prostate cancer.METHODS: A total of 210 men who met the study inclusion criteria underwent systematic transperineal ultrasound-guided template biopsy of the prostate. All patients had previously undergone at least one set of transrectal prostate biopsies and 170 (81%) had undergone two or more.
The mean number of prostate cores obtained before the template biopsy was 17.4. A mean of 21.2 cores (range 12 to 41) were obtained at the template biopsy, depending on prostate size. The study inclusion criteria included prostate-specific antigen level of 10 ng/mL or greater, prostate-specific antigen velocity of 0.75 ng/mL per year or greater, or the presence of prostatic intraepithelial neoplasia and/or atypical small cell acinar proliferation on the previous biopsy. RESULTS: Adenocarcinoma was detected in 78 men (37%). Cancer was detected in the transition zone in 60 (77%) of these 78 men, including 36 (46%) in whom cancer was identified uniquely in the transition zone. Gleason sum 6 (range 3 to 9) was the most common biopsy grade. Thirty patients underwent radical prostatectomy, and 27 (90%) had pathologic Stage pT2 disease as the final pathologic stage. Complications from biopsy were limited to postprocedural urinary retention in 11% of patients. CONCLUSIONS: A systematic transperineal template biopsy provides uniform sampling of the entire prostate. This technique appears to enhance the identification of transition zone cancers not detected by previous transrectal prostate biopsy in patients at high risk of prostate adenocarcinoma.

Source: Medline
Available in print at Pilgrim Hospital Staff Library

68. Transperineal ultrasound-guided 12-core systematic biopsy of the prostate for patients with a prostate-specific antigen level of 2.5-20 ng/ml in Japan.

Author(s) Yamamoto S, Kin U, Nakamura K, Hamano M, Nishikawa Y, Takenouchi T, Maruoka M

Citation: International Journal of Clinical Oncology, April 2005, vol./is. 10/2(117-21), 1341-9625:1341-9625 (2005 Apr)
Publication Date: April 2005

Abstract: BACKGROUND: The aim of this study was to investigate the cancer detection rate in patients with a prostate-specific antigen (PSA) level of 2.5 to 20 ng/mL using transperineal ultrasound-guided systematic biopsy of the prostate. METHODS: Three hundred consecutive patients with PSA levels of 2.5 to 20 ng/mL underwent transperineal ultrasound-guided 12-core systematic biopsy of the prostate. RESULTS: Prostate cancer was detected in 108 of the 300 patients (36.0%). The cancer detection rates in patients with total PSA levels of 2.5-4.0, 4.01-10.0 and 10.01-20.0 ng/mL were 18.2%, 31.0%, and 50.0%, respectively. The cancer detection rates in patients with prostate volumes of less than 30 cc and over 50 cc were almost 50%, and 13.3%, respectively. The cancer detection rate in patients with a PSA density (PSAD) of less than 0.10 ng/mL per cc was only 5.6%, and no prostate cancer was detected in patients with a free-to-total PSA ratio (% f PSA) over 40%. CONCLUSION: We demonstrated a high prostate cancer detection rate by the transperineal ultrasound-guided 12-core systematic biopsy method in patients with PSA levels of 2.5 to 20 ng/mL. Accordingly, if the number of core biopsies is further increased overall, except in patients with a large prostate volume, and if the indication for biopsy is decided based on the PSAD and %f PSA, then the cancer detection rate by the present method may be further improved, with fewer unnecessary biopsies.

Source: Medline
Available in fulltext from International Journal of Clinical Oncology at EBSCOhost

69. Prostate needle biopsy: 12 vs. 18 cores -- is it necessary?

Author(s) Pepe P., Aragona F.

Citation: Urologia Internationalis, 2005, vol./is. 74/1(19-22), 0042-1138 (2005)
Publication Date: 2005

Abstract: INTRODUCTION: The aim of this study is to compare the histological results of a prostate needle biopsy scheme of 12 and 18 cores used in 372 consecutive patients submitted to an early stage diagnosis programme for prostate cancer (PCa). MATERIALS AND METHODS: From February 2002 to July 2003 a transperineal TRUS-guided prostate needle biopsy was performed in 372 patients aged 40-73. Indications for biopsy were: suspected DRE, total PSA (PSAt) >10 ng/mI; PSAt equal to 4-10, 2.6-3.9, < or =2.5 ng/ml
and PSA F/T <25%, <20% and <15%, respectively. In 256 patients, we performed 12 cores and in 116 cases 18 cores. RESULTS: 159 (42.7%) patients were diagnosed with PCa, 138 (37%) with BPH, 58 (15.7%) with chronic prostatitis, 15 (4%) with HGPIN, 2 (0.6%) with ASAP. In patients that underwent 12 and 18 cores the incidence of PCa was 39.8 and 49%; the incidence of PCa in patients with PSA < or =10 and >10 ng/ml submitted to 12 and 18 cores was 35 vs. 47% and 57.8 vs. 52%, respectively. The preponderance of clinical stage T1c was 50% (12 cores) vs. 72% (18 cores). The median biopic Gleason score in both groups resulted 6.6 (12 cores) and 6 (18 cores). In 110 (12 bioptic cores) and in 30 (18 bioptic cores) patients that underwent a RRP, the pTNM proved a significant clinical neoplasm (Gleason score > or =6 and/or tumoral volume >0.5 cm(3)) in the first group in all cases, while in the second group in 28/30 (94%) cases. CONCLUSIONS: Extended schemes of prostate needle biopsy of 18 or more cores increases the PCa diagnosis in early stage and should be adopted for young patients with a PSA <10 ng/ml, negative DRE and in case of rebiopsies.

Source: EMBASE
Available in fulltext from Urologia Internationalis at EBSCOhost

70. Complications of transrectal versus transperineal prostate biopsy.

Author(s) Miller J, Perumalla C, Heap G
Citation: ANZ Journal of Surgery, January 2005, vol./is. 75/1-2(48-50), 1445-1433;1445-1433 (2005 Jan-Feb)
Publication Date: January 2005
Abstract: BACKGROUND: There are two established techniques of prostate biopsy: the more widely used transrectal technique, and the transperineal technique. Although the transrectal technique is faster, it is reported to have an increased risk of septic complications, which may be life threatening. The present study compares complication rates of both techniques at Nambour General Hospital.METHODS: The present retrospective study was performed by reviewing all available medical charts of men who underwent prostate biopsy during the years 1996-2001. The following data were recorded in a database: date of birth; digital rectal examination findings; serum prostate specific antigen (PSA); biopsy technique; number of cores taken; number of positive cores; Gleason grade and score; complications. Results were tabulated and simple statistical analysis performed to compare both groups.RESULTS: A total of 197 biopsies was included in the study, with 81 transperineal biopsies in 75 men, and 116 transrectal biopsies in 103 men. There was no statistically significant difference in complication rates, including sepsis, between transrectal biopsy and transperineal biopsy. The rate of sepsis was 1.2% for the transperineal technique, and 0% for the transrectal technique (P = 0.411, Fisher exact test). Overall complication rates were 22.2% for transperineal technique and 19.8% for transrectal technique (P = 0.773, Fisher exact test).CONCLUSION: Although the present study was limited by retrospective design and size it suggests that both techniques are equally safe. A review of medical literature supports a tranperineal approach to patients who will tolerate sepsis poorly, or who have a suspected inflammatory cause of their raised PSA.

Source: Medline
Available in fulltext from ANZ Journal of Surgery at EBSCOhost

71. Transrectal ultrasound-guided transperineal 14-core systematic biopsy detects apico-anterior cancer foci of T1c prostate cancer.

Author(s) Kawakami S, Kihara K, Fujii Y, Masuda H, Kobayashi T, Kageyama Y
Citation: International Journal of Urology, August 2004, vol./is. 11/8(613-8), 0919-8172:0919-8172 (2004 Aug)
Publication Date: August 2004
Abstract: AIM: The optimal biopsy strategy for prostate cancer detection, especially in men with isolated prostate-specific antigen (PSA) elevation, remains to be defined. We evaluated diagnostic yield and safety of transrectal ultrasound (TRUS)-guided transperineal
systematic 14-core biopsy and compared the spatial distribution of cancer foci detected with this technique in men with and without abnormality on digital rectal examination (DRE).

**METHODS:** In a prospective study, 289 men aged between 50 and 87 years (median age, 70 years) underwent TRUS-guided transperineal systematic 14-core prostate biopsy because of elevated PSA and/or abnormal DRE findings. Using the fan technique, 12 cores from the peripheral zone and two cores from the transition zone were obtained systematically. To characterize the spatial distribution of cancer positive cores, site-specific overall and unique cancer detection rates were compared between stage T1c and T2 cancers.

**RESULTS:** Prostate cancer was detected in 105 of the 289 patients (36%). Major complications requiring prolonged hospital stay or re-hospitalization during a 4-week postbiopsy period were rare (1.4%). Sixty-seven stage T1c cancers were identified. These cancers were associated with significantly lower PSA and a smaller number of cancer positive cores when compared with stage T2 cancers (n= 38). The overall cancer detection rate was highest at the anterior peripheral zone and the posterior peripheral zone in stage T1c and stage T2 cancers, respectively. The unique cancer detection rate at the anterior peripheral zone was significantly higher in stage T1c cancers than in stage T2 cancers. Therefore, when the prostate is extensively biopsied using the transperineal approach, cancer positive cores are characteristically distributed anteriorly in stage T1c cancers and posteriorly in stage T2 cancers.

**CONCLUSIONS:** TRUS-guided transperineal systematic 14-core biopsy showed an apico-anterior distribution of cancer foci in stage T1c prostate cancers.

**Source:** Medline
Available in fulltext from International Journal of Urology at EBSCOhost

**72. Acute urinary retention after transperineal template-guided prostate biopsy.**

**Author(s)** Buskirk SJ, Pinkstaff DM, Petrou SP, Wehle MJ, Broderick GA, Young PR, Weigand SD, O'Brien PC, Igel TC

**Citation:** International Journal of Radiation Oncology, Biology, Physics, August 2004, vol./is. 59/5(1360-6), 0360-3016;0360-3016 (2004 Aug 1)

**Publication Date:** August 2004

**Abstract:** PURPOSE: Urinary retention occurs in 5%-36% of patients with prostate cancer after implantation of radioactive seeds for brachytherapy. We used transperineal biopsy as a model to determine the influence of needle trauma on urinary retention.

**METHODS AND MATERIAL:** We retrospectively reviewed medical records of 157 men with high risk of prostate cancer who underwent systematic ultrasound-guided biopsy of the prostate with the transperineal template technique and an 18-gauge automated biopsy device.

**RESULTS:** Eighteen of 157 patients (11.5%; 95% confidence interval, 6.9%-17.5%) had urinary retention within 48 hours after biopsy. Median age was 68.5 years in patients with retention vs. 67.0 years in patients without (p = 0.319); median calculated prostate volume, 76.5 vs. 51.5 mL (p = 0.015); and median number of biopsy cores, 22.0 vs. 20.0 (p = 0.038). Age distribution differed between groups (p = 0.047), with more younger men in the no-retention group. On multivariate analysis, only number of biopsy cores significantly predicted urinary retention (p = 0.003). Four patients required transurethral resection; 1 had an indwelling catheter until radical prostatectomy; and 13 were catheter-free within 1-5 days.

**CONCLUSIONS:** Needle trauma alone may cause urinary retention in men undergoing transperineal procedures. The number of needle incursions and prostate size are predictors of postprocedure urinary retention.

**Source:** Medline

**73. Difference of cancer core distribution between first and repeat biopsy: In patients diagnosed by extensive transperineal ultrasound guided template prostate biopsy.**

**Author(s)** Furuno T, Demura T, Kaneta T, Gotoda H, Muraoka S, Sato T, Nagamori S, Shinohara N, Koyanagi T

**Citation:** Prostate, January 2004, vol./is. 58/1(76-81), 0270-4137;0270-4137 (2004 Jan 1)

**Publication Date:** January 2004
Abstract: BACKGROUND: We performed extensive transperineal ultrasound guided template prostate biopsy and evaluated cancer core distribution. METHODS: From August 2000 to May 2002, 113 men with prostate specific antigen levels between 4.0 and 10.0 ng/ml underwent template biopsy. Eighty-six had no previous biopsy (first group) and 27 had previous transrectal sextant biopsies (repeat group). A mean of 18.4 biopsy cores were taken. We defined the region over 2 cm from the rectal face of the prostate as the anterior region and the other as the posterior. RESULTS: Cancer was detected in 49 of 113 (43%) men. Forty-two were in the first group and seven in the repeat group. In the first group, the cancer core rate (cancer core number/biopsy core number) in the anterior region (7.0%) had no difference from that in the posterior region (8.6%) (P = 0.7111). But in the repeat group, the cancer core rate in the anterior region (4.6%) was higher than in the posterior (1.5%) (P < 0.0001). CONCLUSIONS: These results suggest that transrectal sextant biopsies miss more cancers in the anterior region than in the posterior. We believe template technique has an advantage to be able to detect cancer equally in the anterior and posterior. Copyright 2003 Wiley-Liss, Inc.

Source: Medline

74. Best approach for prostate cancer detection: a prospective study on transperineal versus transrectal six-core prostate biopsy.

Author(s) Emiliozzi P, Corsetti A, Tassi B, Federico G, Martini M, Pansadoro V

Citation: Urology, May 2003, vol./is. 61/5(961-6), 0090-4295;1527-9995 (2003 May)

Publication Date: May 2003

Abstract: OBJECTIVES: To compare the efficacy of transperineal versus transrectal six-core prostate biopsy. Transrectal sextant biopsy is the most common method for prostate cancer detection. However, the cancer detection rate with this technique is increasingly considered inadequate. Different prostate biopsy procedures, mainly based on addition of additional transrectal cores to traditional sextant biopsy, have been proposed to increase the cancer diagnosis rate. The efficacy of the transperineal approach has not yet been fully established. METHODS: In a prospective study, 107 patients with elevated prostate-specific antigen levels (greater than 4.0 ng/mL) underwent prostate biopsy with six transperineal cores, using a "fan" scheme, plus six transrectal cores, according to the sextant technique. The median prostate-specific antigen level was 8.2 ng/mL (range 4.1 to 240). RESULTS: The overall cancer detection rate was 40% (43 of 107); prostate cancer was found in 38% (41 of 107) of patients with the transperineal approach and in 32% (34 of 107) of patients with the transrectal approach. Of 43 diagnosed cancers, 41 (95%) were found with the transperineal approach and 34 (79%) with the transrectal approach (P = 0.012). No patient had low-grade cancer (Gleason score 2 to 4), 25 patients had intermediate-grade cancer (Gleason score 5 to 6), and 18 patients had high-grade cancer (Gleason score 7 to 10). CONCLUSIONS: This is the first report comparing in vivo two different approaches to prostate biopsy. Transperineal biopsy seems superior to transrectal biopsy to detect prostate cancer. Both the transperineal and the transrectal approach should be familiar to the urologist who needs to obtain an adequate cancer detection rate. Transrectal sextant biopsy cannot be considered the standard technique for prostate cancer detection.

Source: Medline

Available in print at Pilgrim Hospital Staff Library

75. Transperineal prostate biopsy after abdominoperineal resection.

Author(s) Shinohara K, Gulati M, Koppie T, Terris MK

Citation: Journal of Urology, January 2003, vol./is. 169/1(141-4), 0022-5347;0022-5347 (2003 Jan)

Publication Date: January 2003

Abstract: PURPOSE: Prostate cancer evaluation in men who have undergone abdominoperineal resection poses a challenge for urologists. Diagnosis and staging methods are limited because as access to the prostate via digital rectal examination is not possible. Prostate specific antigen (PSA) has been used to screen for malignancy in this
population. However, the conventional diagnostic technique with transrectal ultrasound guided biopsies cannot be used. Transperineal ultrasound and biopsy have been described to evaluate the prostate in this setting. We report our experience with transperineal ultrasound biopsy for evaluating the prostate in patients with elevated PSA who have previously undergone abdominoperineal resection.

**MATERIALS AND METHODS:** We reviewed the records of 28 patients treated at 2 institutions. All patients had a history of abdominoperineal resection and subsequent transperineal ultrasound guided prostate biopsy for evaluating elevated PSA. Mean serum PSA in this population was 22 ng./ml. (median 9.5, range 4.1 to 237). Abdominoperineal resection was done in 16 patients (57%) for colorectal cancer, in 11 (39%) for ulcerative colitis and in 1 (4%) for familial polyposis coli. Average time since resection was 14 years (range 1 to 33). Five patients had previously undergone radiation therapy as part of treatment for colorectal cancer before transperineal ultrasound biopsy.

**RESULTS:** Of the 28 biopsies performed 23 revealed prostate cancer, 2 revealed prostatitis and 3 were benign. Average Gleason grade was 6.6 (range 3 to 9). Of the 23 patients with prostate cancer 22 were treated with androgen deprivation therapy (7), prostatectomy (8), external beam (6) and high dose (1) radiation therapy. Of the 8 patients who underwent prostatectomy pathological stage was T2 in 3 and T3 in 4, while pathological findings were not determined in 1 patient in whom the prostate was removed in pieces.

**CONCLUSIONS:** In patients with a history of abdominoperineal resection and elevated PSA transperineal ultrasound guided biopsy of the prostate can provide an accurate tissue diagnosis.

**Source:** Medline

Available in print at Pilgrim Hospital Staff Library

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### 76. Role of screening in detection of clinically localized prostate cancer

**Author(s)** Galic J., Karner I., Cenan L., Tucak A., Vranjes Z., Bilandzija-Peranovic M., Hegedus I.

**Citation:** Collegium antropologicum, 2003, vol./is. 27 Suppl 1/(49-54), 0350-6134 (2003)

**Publication Date:** 2003

**Abstract:** The aim of this study was to confirm the role of screening by determining the percentage of clinically localized prostate cancer (stage A and B) in patients with prostate cancer detected on screening and in those presenting to urologic clinic for the symptoms of urination impairment or ostalgia. During the study, 1,000 men aged ≥ 50 from the community of Cepin and village of Josipovac near Osijek were examined. The subjects with elevated concentration of total prostate specific antigen and/or digital rectal examination suspect of carcinoma underwent transperineal biopsy of the prostate. Clinical staging was performed in patients with prostate cancer detected on screening, and data on clinical staging for prostate cancer patients treated during the 1996-1997 period were retrieved from patient files of the Department of Urology, University Hospital "Osijek". On screening, 28 (80%) patients with localized prostate cancer and seven (20%) patients with metastases were detected. In the group of patients examined on an outpatient basis for the signs and symptoms of prostatism, there were 30 (83.4%) patients with metastases and only six (16.6%) patients with localized prostate cancer. Study results indicated that an early diagnosis of prostate cancer could be made by use of noninvasive and inexpensive methods that cause no major discomfort to the patient. Accordingly, these results appear to strongly support such screening in men, if not in all those aged over 50, then at least in the otherwise healthy, 50-70 age group.

**Source:** EMBASE

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**Additional Research**

**European Urology**

**Systematic Review of Complications of Prostate Biopsy 2013**

**Journal of Urology**
### Published research - Google Scholar

**Evaluation of a novel precision template-guided biopsy system for detecting prostate cancer**  
Il Megwalu, GG Ferguson, JT Wei... - BJU ..., 2008 - Wiley Online Library  
OBJECTIVE To explore the ability of a novel transrectal ultrasonography (TRUS) device (TargetScan TM, Envisioneering Medical Technologies, St. Louis MO) that creates a three-dimensional map of the prostate and calculates an optimal biopsy scheme, to accurately...  
Cited by 36 Related articles All 7 versions Cite

**... between palpable and nonpalpable prostate tumors in patients diagnosed using extensive transperineal ultrasound-guided template prostate biopsy**  
T Demura, T Hioka, T Furuno, T Kaneta, H Gotoda... - Cancer, 2005 - Wiley Online Library  
BACKGROUND The authors performed extensive transperineal ultrasound-guided template prostate biopsies to investigate carcinoma core distribution. METHODS Between August 2000 and May 2004, 371 men underwent template biopsies. Three hundred twelve...  
Cited by 26 Related articles All 4 versions Cite

**Transperineal 3D mapping biopsy of the prostate: an essential tool in selecting patients for focal prostate cancer therapy**  
G Onik, W Barzell - Urologic Oncology: Seminars and Original ..., 2008 - Elsevier  
... As a conservative measure, we consider all cancers found on 3D mapping biopsies clinically threatening since sampling error of a portion of a threatening tumor could make it appear as a... Systematic transperineal ultrasound guided template biopsy of the prostate: Three year...  
Cited by 76 Related articles All 5 versions Cite

**Clinical staging of prostate cancer: a computer-simulated study of transperineal prostate biopsy**  
ED Crawford, SS Wilson, KC Torkko, D Hirano... - BJU ..., 2005 - Wiley Online Library  
... After biomarker confirmation of prostate malignancies, template-guided TSBs can be taken to obtain tissue... main advantage of TSBs over a transrectal approach is that the template allows needles... can be obtained through the perineum without risking injury to the prostatic urethra...  
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**Incidence of Prostate Cancer in Men With Prostate Specific Antigen Greater Than 4.0 Ng/Ml:: A Randomized Study Of 6 Versus 12 Core Transperineal Prostate Biopsy**  
P Emiliozzi, P Scarpone, F DePAULA, M Pizzo... - The Journal of ..., 2004 - Elsevier  
PURPOSE: The prostate cancer detection rate in patients with elevated prostate specific antigen (PSA) increases with extended needle biopsy protocols. Transperineal biopsy under transrectal ultrasound guidance is rarely reported, although notable cancer
Three-dimensional combination of transrectal and transperineal biopsies for efficient detection of stage T1c prostate cancer

S Kawakami, N Hyochi, J Yonese, M Yano… - International Journal of…, 2006 - Springer

Abstract Background Although an increasing number of men present with stage T1c prostate cancer, the optimal biopsy strategy for detecting stage T1c disease still remains to be defined. The aim of this study was to explore an efficient first-time biopsy scheme for...

Improved detection of clinically significant, curable prostate cancer with systematic 12-core biopsy


Key Words. prostate; prostatic neoplasms; biopsy. ... [10] and [11] Our stratification scheme divided the biological significance of prostate cancer into five ... 15 Our findings also showed that the sextant template detected 76% of cancers, whereas laterally directed cores detected 74%. ...

Prostate biopsy: how many cores are enough?

JC Presti Jr - Urologic Oncology: Seminars and Original …, 2003 - Elsevier

... Another approach similar to saturation biopsy techniques has used a transperineal template to better sample the prostate. ... High-grade prostatic intraepithelial neoplasia or atypia was the indication for repeat biopsy in 12 (14%). ...

Transrectal ultrasound-guided transperineal 14-core systematic biopsy detects apico-anterior cancer foci of T1c prostate cancer

S Kawakami, K Kihara, Y Fujii… - Journal of urology, 2004 - Wiley Online Library

Abstract Aim: The optimal biopsy strategy for prostate cancer detection, especially in men with isolated prostate-specific antigen (PSA) elevation, remains to be defined. We evaluated diagnostic yield and safety of transrectal ultrasound (TRUS)-guided transperineal ...

Diagnostic value of systematic biopsy methods in the investigation of prostate cancer: a systematic review


... The optimal systematic prostate biopsy scheme should include 8 rather than 6 biopsiesresults of ... ultrasound guided biopsy of the prostatea survey of patient preparation and biopsy technique. ... A national survey of transrectal ultrasound-guided prostatic biopsiestime for a national ...

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TRANSPERINEAL TEMPLATE PROSTATE BIOPSY, IS IT THE PREFERRED METHOD FOR THE REPEAT PROSTATIC BIOPSY

A. Hameed, T. Suntharasivam, A. Warren, A. Doble

THE SUPERIORITY OF TRANSPERINEAL TEMPLATE MAPPING BIOPSY OF THE PROSTATE GLAND OVER THE TRANSRECTAL SATURATION APPROACH

Stuart McCracken, Sarah Housley, Jose Dominguez-Escrig, Krishna Narahari, Damian Greene
**SYSTEMATIC TRANSPERINEAL ULTRASOUND GUIDED TEMPLATE BIOPSY OF THE PROSTATE IN PATIENTS AT HIGH RISK** (Citations: 37)

TODD C. IGEL, MELINDA K. KNIGHT, PAUL R. YOUNG, MICHAEL J. WEHLE, STEVEN P. PETROU, GREGORY A. BRODERICK, ROBERT MARINO, RAUL O. PARRA

Journal: *Journal of Urology - J UROL*, vol. 185, no. 4, pp. e78-e78, 2011

**THE ROLE OF TRANSPERINEAL TEMPLATE PROSTATE MAPPING BIOPSIES IN RISK-STRAINIFYING MEN WITH LOCALISED PROSTATE CANCER** (Citations: 1)

H. Ahmed, D. Stevens, O. Barbouti, E. Zacharakis, D. Pendse, R. Illing, C. Allen, A. Freeman, M. Emberton


**TRANSPERINEAL TEMPLATE-GUIDED PROSTATE BIOPSY FOR PERSISTENTLY ELEVATED PSA FOLLOWING MULTIPLE NEGATIVE BIOPSIES**

Boris Gershman, Adam Feldman, Anthony Zietman, W. Scott McDougal

Journal: *Journal of Urology - J UROL*, vol. 185, no. 4, pp. e850-e850, 2011

**TRANSPERINEAL TEMPLATE-GUIDED MAPPING BIOPSY FOR DETECTION OF PROSTATE CANCER AS AN INITIAL APPROACH**

Skouteris Vassilios, A. Dounis, I. Evagelou, M. Metsinis, M. Skouteris, D. Papaioannou, S. Papadopoulos, G. Zacharopoulos


Transperineal ultrasound guided template biopsy does not increase the detection rate of prostate cancer in a screening population

Hubert Volgger, Wolfgang Horninger, Hannes Steiner, Hermann Rogatsch, Georg Bartsch


Prostate cancer distribution in patients diagnosed by transperineal template-guided saturation biopsy: Implications for brachytherapy treatment planning

Unknown

Journal: *Brachytherapy*, vol. 6, no. 2, pp. 93-93, 2007

**The Impact of Needle Trauma on Urinary, Bowel and Erectile Function Following Transperineal Template Guided Prostate Saturation Biopsy: Implications for Brachytherapy** (Citations: 1)


**Outcome of a Modified Transperineal Template Guided Saturation Repeat Prostate Biopsy**

K. Ekwueme, H. Simpson, H. Zakhour, N. Parr

**Urinary morbidity following transperineal template-guided prostate saturation biopsy**

Unknown


**Transperineal drainage of a prostatic abscess using a template biopsy grid for guidance: Point of technique**

Susan Willis, Hywel Evans, Bruce Montgomery
**CAN TRANSPERINEAL MAPPING TEMPLATE PROSTATE BIOPSY ADEQUATELY PREDICT PROSTATE CANCER LOCALIZATION?**

George R. Schade, Priya Kunju, Chang He, Tudor Borza, Jason Caravalo, Stephanie Meyers, John T. Wei, David P. Wood Jr


**PROSTATE CANCER DETECTION RATES, RISK FACTORS, AND DISTRIBUTION WITH TRANSPERINEAL MAPPING TEMPLATE PROSTATE BIOPSY: INITIAL SINGLE INSTITUTION EXPERIENCE**

Michael Rowley, Chang He, Rabia Siddiqui, Stephanie Meyers, John Wei, David Wood, Priya Kunju

Journal: *Journal of Urology - J UROL*, vol. 185, no. 4, pp. e342-e342, 2011

**TRANSRECTAL BIOPSY IS MORE LIKELY TO MISS PROSTATE CANCER FOCI LOCATED IN THE ANTERIOR PORTION OF THE PROSTATE COMPARING WITH TRANSPERINEAL BIOPSY**

Munekado Kojima, Yasufumi Yada, Yosimasa Hayase


**Detection of prostate cancer: a comparative study of the diagnostic efficacy of sextant transrectal versus sextant transperineal biopsy** *(Citations: 27)*

André N Vis, Michiel O Boerma, Stefano Ciatto, Robert F Hoedemaeker, Fritz H Schröder, Theo H van der Kwast

...undiagnosed on routine sextant transrectal biopsy. To assess the efficacy of transperineal biopsy to detect prostate cancer, we compared this approach to systematic sextant transrectal biopsy in a simulation experiment. Methods...either small (0.2 cm³ or less) or notably located at the prostatic base. Conclusions. The biopsy procedure in which the biopsy needles enter the prostate at the apex for a...

Journal: *Urology*, vol. 56, no. 4, pp. 617-621, 2000

**Prostate cancer detection with 12-core transperineal biopsy**

Paolo Emiliozzi, Paolo Scarpone, Francesco Depaula, Maurizio Pizzo, Giorgio Federico, Vito Pansadoro, Alberto Pansadoro


**Three-dimensional combination of transrectal and transperineal biopsies for efficient detection of stage T1c prostate cancer** *(Citations: 15)*

Satoru Kawakami, Nobuhiro Hyochi, Junji Yonese, Masataka Yano, Yasuhisa Fujii, Yukio Kageyama, Iwao Fukui, Kazunori Kihara

...three-dimensional 26-core (3d26) biopsy comprising 12 transrectal and 14 transperineal sampling sites was performed in 321 men with median prostate-specific antigen (psa) level of...core (transrectal 8-core plus transperineal 6-core) and a three-dimensional 8-core (transrectal 4-core plus transperineal 4-core) biopsies could detect more than 95...


**HER CANCER DETECTION RATE BY THE PROSTATE BIOPSY PROTOCOL OF 1ST 8CORE TRANSRECTAL BIOPSY AND 2ND MORE THAN 20 CORES TRANSPERINEAL BIOPSY USING ORIGINAL “YAMANASHI”TEMPLATE**

M. Kamivama, M. Fukasawa, Y. Inuduka, S. Kira, Y. Haneda, T. Miyamoto, H. Nakagomi,
N. Sawada, M. Takeda

6 vs. 12-core transperineal biopsy for prostate cancer detection, a randomised study
P. Emiliozzi, P. Scarpone, F. DePaula, M. Pizzo, G. Federico, A. Pansadoro, M. Martini, V. Pansadoro

PROSTATE CANCER RISK STRATIFICATION AND CANCER MAPPING – TEMPLATE TRANSPERINEAL PROSTATE MAPPING BIOPSIES (Citations: 3)
Hashim U Ahmed, Daniel Stevens, Omar Barbouti, Evangelos Zacharakis, Rowland O Illing, Douglas Pendse, Clare Allen, Alex Freeman, Mark Emberton