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**Literature search results**

<table>
<thead>
<tr>
<th>Search completed for:</th>
<th>Enhanced recovery for cystectomy patients</th>
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<td>Richard Bridgen</td>
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**Resources searched**

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

**Database search terms**

cystectomy*; CYSTECTOMY; “radical cystectomy*”; radical adj2 cystectomy*; total adj2 cystectomy; “enhanced recovery”; enhanc* adj2 recovery; ERAS; ERP; RECOVERY; convalescence; postoperative*; recovery; enhance*; “fast track surg*”; “accelerated recovery”; ARP; “accelerat* adj2 recovery; “fast track” adj2 surg*; accelerate*; “fast track”; fast* adj2 recovery

**Google search string**

(“enhanced recovery" OR ERAS OR ERP OR "accelerated recovery" OR "fast track") "radical cystectomy"

**Summary**

A bit more research on enhanced recovery in cystectomy than in prostatectomy. I’ve had to use a different set of resources, because of problems with NHS Evidence today, and the format of the results is therefore slightly different. It also means that the full-text links at the end of each article included within published research will only check to see whether full-text is available. Some will be available; some won’t – unfortunately you’re going to have to check each link.

**Guidelines**

*European Association of Urology*

Guidelines on Bladder Cancer Muscle-invasive and Metastatic 2011

Pre-operative bowel preparation is not mandatory, ‘fast track’ measurements reduce the time of bowel recovery.
Evidence-based reviews

Cochrane Central Register of Controlled Trials

Fast-track concepts in the perioperative management of patients undergoing radical cystectomy and urinary diversion: Review of the literature and research results, 2009

Fast-track (FT) protocols in visceral surgery incorporate innovative aspects of analgesia, bowel preparation, enteralization, and drainage management. In elective colorectal surgery, these concepts are the standard of care. In uro-oncological surgery, however, they are used very reluctantly, although the available data show that early nasogastric tube removal and enteralization and the omission of preoperative bowel preparation have positive effects on convalescence and hospital stay. The work presented here was initiated to compare traditional and FT management in a randomized fashion, focusing on complication rates and the course of enteralization as outcome measures. Complication rates, especially of bowel-associated complications, were not increased in the FT group. The postoperative stay on the intermediate care unit was significantly shorter in the FT cohort, and enteralization was completed significantly earlier. FT management is not associated with an increased risk of major complications in urinary diversion surgery. Controlled clinical trials are needed to further evaluate important aspects of a standardized perioperative plan of care (including antibiotic regimen and earlier removal of ureteral and neobladder catheters).

Published research

1. The importance of physical therapy in the postoperative period after total cystectomy of bladder carcinoma.


[Journal: Article]

AN: 21630555

The aim of this study is to evaluate the results and complications after radical cystectomy due to carcinoma of the bladder and to point out the significance of post-operative physical treatment and rehabilitation of these patients. In the period of 3 years (2007-2010), at the Urological Clinic in Belgrade, we performed 195 total cystectomies for invasive bladder carcinoma with the use of different types of urinary diversion. The operation was performed in 162 men (83%) and 33 women (17%). Survival, complications and postoperative recovery was dependent on the type of urinary diversion which was used, stage of disease and general condition of patients before surgery. The worst result was achieved in patients who underwent ureterocutaneostomy and the complications were represented in 30% of patients. In the group of patients where the ileal conduit was applied, complications were recorded in 10% of patients, while mortality was 5%. In the group of patients where the continent urinary diversion was performed, complications were recorded in 5% of patients in mind of stecoral fistulas, urinary fistulas and ileus. The timely application of the physical therapy and rehabilitation in these patients is of great importance, because it reduces complications and allows faster recovery and release from the hospital.

Institution
(Djurasic) Clinic for Physical Medicine and Rehabilitation, Clinical Center of Serbia, Belgrade.

Check for Full-text
2. Robotic assisted laparoscopic partial cystectomy and urachal resection for urachal adenocarcinoma.
Spiess P.E., Correa J.J.
[Journal: Article]
AN: 19860941
Standard treatment for urachal adenocarcinomas is open partial cystectomy and urachal resection; however, minimally invasive surgical approaches including laparoscopic and recently described robotic assisted laparoscopic partial cystectomy and urachal resection is feasible with potential less morbidity. A case of robotic assisted partial cystectomy and urachal resection for urachal adenocarcinoma is presented. Few articles in the literature have being published describing this technique and to the best of our knowledge, this is the largest and potentially most complex case approached in such a manner. A 55 years old African American male presented with hematuria and mucosuria, cystoscopy demonstrated a tumor involving the dome of the bladder. Transurethral biopsy confirmed a urachal adenocarcinoma. Further studies revealed a negative metastatic evaluation. Preoperative abdominal/pelvic CT imaging revealed an enhancing mass extending from the inferior level of the umbilicus to the dome of the bladder. A total of 6 laparoscopic ports were used. The robotic assisted laparoscopic dissection was started at the level of the umbilicus, dissecting lateral to the right and left medial umbilical ligaments up until the dome of the bladder. A simultaneous cystoscopy with transillumination to define the bladder boundaries of this mass, with robotic assisted laparoscopic opening of the bladder, with the entire mass (including bladder component) excised and sent for frozen pathology for margin evaluation. After specimen extraction, the bladder was closed in two layers. Total surgery time was 300 minutes and intra-operative blood loss was 150cc. Final pathology reported a pT2N0Mx adenocarcinoma with negative margins and negative pelvic lymph nodes. Patient was started on clear liquids on postoperative day 2 and on regular diet on postoperative day 3. He was discharged on postoperative day 4. A cystogram performed on postoperative day 7 revealed a good bladder capacity (350 cc) and no leakage was identified. Robotic assisted partial cystectomy and urachal resection for urachal adenocarcinoma of the bladder is feasible even in challenging cases. This surgical approach is less morbid in terms of postoperative pain and cosmesis when compared to the open standard approach. The postoperative recovery is faster; however, application of oncological principles and comfort with laparoscopic and robotic surgery is needed prior to attempting such challenging cases. [Video - Available at: www.brazjuro.com.br/videos/september_october_2009/Spiess_609].
Institution
(Spiess) Division of Urology, H. Lee Moffitt Cancer Center, Tampa, Florida, USA.

Check for Full-text


3. Orthotopic sigmoid neobladder versus orthotopic ileal neobladder as a bladder substitute: 10-year retrospective analysis.
[Journal: Article]
AN: 2008138026
Background: A long-term follow-up indicates that orthotopic ileal neobladder can cause acid-base balance and nutritional metabolic disorder. Otherwise, a long mesenterium is necessary to balance the tension of bladder at pelvic cavity and urinary inosculation due to a high position of ileum. On the contrary, sigmoid neobladder is near by urinary canal, and
orthotopic sigmoid neobladder as a bladder substitute after radical cystectomy has few effects on acid-base balance of electrolytes, nutritional metabolism and secretion of mucus. Objective: To compare the clinical results of these two operations basis on long-term follow-up. Design: Retrospective analysis. Setting: Department of Urinary Surgery, the Second Affiliated Hospital of Kunming Medical College. Participants: 164 patients with carcinoma of bladder were selected from Department of Urinary Surgery, the Second Affiliated Hospital of Kunming Medical College form January 1995 to March 2005. Ninety-six of them, including 74 males and 22 females, with age of 43-74 years and the average age of 65 years, accepted the operation of orthotopic ileal neobladder were regarded as the ileal neobladder group, and the other 68, including 64 males and 4 females, with age of 51-72 years and the average age of 62 years, accepted the operation of orthotopic sigmoid neobladder were regarded as the sigmoid neobladder group. All patients were finally diagnosed as pathological examination, and informed consent was provided by all patients. Treatment plan was approved by the local ethical committee. Methods: 1 Orthotopic ileal neobladder: Once the bladder was removed, a segment of ileum about 40-60 cm in length was isolated. In the operative procedure, the distal part of ileum which connected to the caecum often kept, the length of which was 15-20 cm. Both distal ends of the ureters were anastomosed to the homolateral not been split end of the isolated bowel. A perforation was constructed at the bottom of the pouch which served as the outlet, this outlet was then anastomosed to the proximal portion of the remaining urethra. 2 Orthotopic sigmoid neobladder: After surgically removing the bladder, a part of the sigmoid colon, the length of which was 30-40 cm was isolated. Other operations were as the same as those mentioned above. Main outcome measures: Time of operation, blood loss during the procedure, length of time confined to bed, time of indwelling catheter, the ability to maintain continence and urinate, the results of urodynamic studies, and pouch related complications after operation. Results: In 164 patients, 12 (7.3%) were lost to follow-up. The mean follow-up times were 46 months in the group of orthotopic ileal neobladder and 42 months in the group of orthotopic sigmoid neobladder, respectively. Blood loss during the procedure and the ability to maintain continence and urinate were similar in the two groups (P > 0.05). Compared with sigmoid neobladder group, the ileal neobladder group spent more time on operation, keeping the bed and indwelling catheter. The max volume of ileal pouch was higher than that of sigmoid pouch, and the difference was significant in statistic analysis (t=2.56-3.08, P < 0.05-0.01). Incidence of complication of ileal pouch (16.7%, 29.2%) was higher than that of sigmoid pouch (9%, 16%). The incidence in the early phase was not significantly different, but that in the late phase was significantly different (x2=5.426, P < 0.05). Conclusion: Compared with orthotopic ileal neobladder, sigmoid neobladder is worthy of being preferred for its shorter operative time, faster recovery and lower rate of pouch related complications.

Institution
(Zhan, Wang, Xu, Shi, Zuo, Yang, Wang) Department of Urology, Kunming Medical College, Kunming 650101 Yunnan Province, China

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4. Laparoscopic radical cystectomy with intracorporeal construction of a continent urinary diversion - Future or present? <Laparoskopische radikale zystektomie mit intrakorporaler anlage einer kontinenten harnableitung. Zukunft oder gegenwart? >
Turk I., Davis J.W., Deger S., Winkelmann B., Schonberger B., Schellhammer P.F., Loening S.A.
[Journal: Article]
AN: 2003025919
Once laparoscopic radical prostatectomy has been mastered, the step to performing a radical cystectomy is not that far. The challenge is to create the urinary diversion by laparoscopy. In this report we describe our experience with 11 laparoscopic radical cystectomies and intracorporeal construction of a continent urinary diversion (Mainz pouch II) as a treatment option in patients with muscle-invading bladder cancer. All 11 procedures could be performed successfully. A conversion to open surgery was not required in any case. The mean surgery time was 6.7 h. Except for two pouch fistulas we did not observe any intra- or postoperative complications. The functional as well as the oncological results are convincing. Less morbidity and faster recovery are the main advantages of this minimally invasive procedure. In addition, the low levels of blood loss, fluid shifts, and electrolyte loss considerably reduce cardiovascular stress. Radical cystectomy and construction of a continent urinary diversion represent the limit of technically feasible laparoscopy and should be done exclusively in specialized centers.

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5. The use of rectus sheath catheters as an analgesic technique for patients undergoing radical cystectomy.
Parsons B.A., Aning J., Daugherty M.O., McGrath J.S.
British Journal of Medical and Surgical Urology. 4 (1) (pp 24-30), 2011. Date of Publication: January 2011.
[Journal: Article]
AN: 2011003147
Introduction: Despite improvements in peri-operative care and the recent introduction of enhanced recovery protocols, radical cystectomy continues to be associated with a greater morbidity and a more prolonged in-patient stay than other urological procedures. There is significant scope for improvement and it is now well recognised that the analgesic technique used can impact on post-operative recovery. In this paper, we report on our early experience of using bilateral rectus sheath catheters (RSC) and highlight potential benefits of the technique. Methods: Over a 12-month period between November 2007 and November 2008, 20 patients underwent a radical cystectomy performed by a single surgeon and anaesthetist. Ten patients had bilateral rectus sheath catheters sited under ultrasound-guidance and they were compared to a preceding group of 10 patients who had epidural catheters inserted. Data were analysed retrospectively and primary outcome measures included pain scores, ileus rates, time to bowel opening and length of stay. Results: The demographics of the two groups showed no significant differences. Analgesic effect was equivalent between the groups. The time to passage of flatus and bowel opening was similar between the 2 groups. There was a slightly lower ileus rate and a shorter median length of stay in the RSC group (13 vs. 15 days) though the data are non-randomised and case numbers were small. Practical benefits in the placement and post-operative care of the RSCs were also observed. Conclusion: The rectus sheath block is a novel analgesic technique that appears to have an equivalent analgesic effect to epidurals in this early observational case series. RSCs have other potential advantages including earlier mobilisation and reduced burden on nursing and medical staff, thus making it ideally suited to an enhanced recovery protocol. Larger studies are needed to confirm the findings of the current case series. 2010 British Association of Urological Surgeons.
Institution (Parsons, Aning, Daugherty, McGrath) Royal Devon and Exeter NHS Foundation Trust, Exeter, Devon, United Kingdom
Publisher Elsevier Ltd (Langford Lane, Kidlington, Oxford OX5 1GB, United Kingdom)
6. Fast Track Program in Patients Undergoing Radical Cystectomy: Results in 362 Consecutive Patients.
[Journal: Article] AN: 2009644942

Background: This article outlines our current perioperative management of patients undergoing cystectomy and urinary diversion using advancements in perioperative care to allow for early institution of an oral diet and early hospital discharge. Study Design: Three hundred sixty-two consecutive patients underwent radical cystectomy and urinary diversion with curative intent (2001 through 2008). Each underwent a perioperative care plan (“fast track” program). Throughout our experience, evidence-based modifications to this program were instituted. We analyzed the impact of these modifications and report the outcomes with the most recent 100 patients in whom no additional modification has been used.

Results: Mean age of patients is 66.3 years, with 44% of the patients older than age 70 years and 12% older than age 80 years. We found no detrimental effects to immediate removal of the orogastric tube at the end of the procedure, but found a beneficial effect of empiric metoclopramide use, with lower rates of nausea and vomiting. Perioperative antibiotic coverage has been reduced to 24 hours as per American Urological Association guidelines. Gum-chewing has also been shown to be of benefit with regard to a more rapid recovery of bowel function. Use of nonnarcotic analgesics (eg, ketorolac) has also been central in the pathway. Finally, early institution of an oral diet has been an original and central component to our fast track program.

Conclusions: Successful application of a fast track program has been applied to our patients undergoing radical cystectomy and urinary diversion, with the potential to use evidence-based modifications to reduce morbidity and improve recovery. 2010 American College of Surgeons.

Institution (Pruthi, Nielsen, Smith, Nix, Schultz, Wallen) Division of Urologic Surgery, The University of North Carolina at Chapel Hill, Chapel Hill, NC, United States Publisher Elsevier Inc. (360 Park Avenue South, New York NY 10010, United States)

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Olbert P.J., Baumann L., Hegele A., Schrader A.J., Hofmann R.
Urologe - Ausgabe A. 48 (2) (pp 137-142), 2009. Date of Publication: February 2009.
[Journal: Review] AN: 2009082674
Fast-track (FT) protocols in visceral surgery incorporate innovative aspects of analgesia, bowel preparation, enteralization, and drainage management. In elective colorectal surgery, these concepts are the standard of care. In uro-oncological surgery, however, they are used very reluctantly, although the available data show that early nasogastric tube removal and enteralization and the omission of preoperative bowel preparation have positive effects on convalescence and hospital stay. The work presented here was initiated to compare traditional and FT management in a randomized fashion, focusing on complication rates and the course of enteralization as outcome measures. Complication rates, especially of bowel-associated complications, were not increased in the FT group. The postoperative stay on the intermediate care unit was significantly shorter in the FT cohort, and enteralization was completed significantly earlier. FT management is not associated with an increased risk of major complications in urinary diversion surgery.

Controlled clinical trials are needed to further evaluate important aspects of a standardized perioperative plan of care (including antibiotic regimen and earlier removal of ureteral and neobladder catheters).

2009 Springer Medizin Verlag.

Institution
(Olbert, Baumann, Hegele, Schrader, Hofmann) Klinik fur Urologie und Kinderurologie, Universitätsklinikum Giesen und Marburg GmbH, Standort Marburg, Marburg, Germany (Olbert) Klinik fur Urologie und Kinderurologie, Universitätsklinikum Giesen und Marburg GmbH, Standort Marburg, Baldingerstrasse, 35033 Marburg, Germany

Publisher
Springer Verlag (Tiergartenstrasse 17, Heidelberg D-69121, Germany)

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8. Ileal Conduit as the Standard for Urinary Diversion After Radical Cystectomy for Bladder Cancer.
Colombo R., Naspro R.
[Journal: Article]
AN: 2010619409

For >30 yr, the ileal conduit (IC) has been considered the "standard" urinary diversion for bladder cancer patients submitted to radical cystectomy. It is universally recognised as being the most clinically adequate, cost-effective, and reliable solution in the long term. During the last two decades, this surgical procedure has been challenged by the dissemination and the excellent clinical outcome of bladder substitutions, which gave the surgeon options in supporting the patient's final choice. Despite this, from a survey of recent literature, IC remains a widely used urinary diversion in most urologic centres. In particular, it is most frequent in female patients and in patients >70 yr with high preoperative comorbidities and unfavourable clinical tumour stage. Enhanced recovery protocols with standardised perioperative plans of care or "fast-track" approaches as well as advances in postoperative patient surveillance have consistently decreased the overall morbidity related to the IC procedure. Although technically simpler to perform when compared with continent reservoirs, IC has not been associated with lower complications. This can be explained partly by the more unfavourable clinical characteristics of patients who undergo the procedure and partly by technical surgical errors. Postoperative complications strictly related to IC contribute to reduce the postoperative quality of life. These complications include uretero-ileal anastomotic strictures and stomal, peristomal, and abdominopelvic-related complications. Most prospective studies, however, found no difference in overall quality of life when comparing different types of transposed intestinal segment surgery. The ileal conduit can still be considered an appropriate surgical solution after radical cystectomy in most patients because of the relative simplicity of the surgical
9. Intraoperative stroke volume optimisation using the oesophageal Doppler monitor as part of the enhanced recovery program for major urological oncology surgery.


[Journal: Conference Abstract]

AN: 70504523

We conducted a prospective audit of all patients having laparoscopic prostatectomies and laparoscopic cystectomies with ileal conduit formation over the past two years. Comparisons were made to the equivalent open surgery techniques. All patients followed an enhanced recovery program consisting of: Preoperative carbohydrate drink two hours prior to surgery. Intraoperative stroke volume optimization using the CardioQ ODM oesophageal Doppler monitor. No nasogastric tubes. Single shot spinal diamorphine with regular paracetamol and diclofenac for postoperative analgesia. No postoperative fasting - all patients were allowed to eat and drink when they felt like it. Rapid mobilisation, with a minimum of 8 hours spent out of bed on the first postoperative day. All patients had a 12-hour oesophageal Doppler probe inserted after induction of anaesthesia. An initial stroke volume measurement was taken, followed by a fluid challenge using 250 ml of 6% hydroxyethyl starch. If the stroke volume increased by 10% or more, further 250 ml fluid challenges were administered until the increase in stroke volume was <10%. This fluid optimisation took place prior to establishment of the pneumoperitoneum. Results: Twenty patients had laparoscopic cystectomies and 124 patients had laparoscopic prostatectomies. Mean baseline stroke volume = 71 ml, with mean post-optimisation stroke volume of 107 ml (51% increase). All patients needed a minimum of three 250 ml colloid boluses to achieve stroke volume optimisation with a maximum of six boluses administered. Mean length of hospital stay: laparoscopic vs. open cystectomies = 10.3 vs 15.1 days, and laparoscopic vs open prostatectomies = 2.5 vs 4.8 days. Discussion: Significant decreases in hospital stay were observed in patients on the enhanced recovery program utilising intra-operative fluid optimisation. Independent economic analysis of the cost benefit of the oesophageal Doppler monitor by the National Institute for Health and Clinical Excellence has shown a financial benefit of GBP1062 (HKD13,300) per patient, after exclusion of the benefits associated with the other parts of the enhanced recovery program. Intraoperative oesophageal Doppler guided fluid optimisation is recommended for all patients having major laparoscopic urological oncology surgery.

Institution
(Sanders, Sheriff, Bhat, Dawam) Medway Maritime Hospital, Gillingham, Kent, United Kingdom

Publisher
Australian Society of Anaesthetists
10. Enhanced recovery: From principles to practice in urology.
Aning J., Neal D., Driver A., McGrath J.
[Journal: Note]
AN: 2010220201
Institution
(Aning, McGrath) Department of Urology, Royal Devon and Exeter NHS Trust, Musgrove Park, Taunton TA1 5DA, United Kingdom
(Neal) Department of Oncology, University of Cambridge, Cambridge, United Kingdom
(Driver) NHS Improvement, Department of Health, London, United Kingdom
Publisher
Blackwell Publishing Ltd (9600 Garsington Road, Oxford OX4 2XG, United Kingdom)

11. Development and implementation of an Enhanced Recovery Programme (ERP) for cystectomy.
Dale R.E., Yap T., Lee A., Gujral S.
[Journal: Conference Abstract]
AN: 70480072
Introduction: In the year to April 2010, cystectomy patients at King George Hospital had a median length of stay of 14 days. An Enhanced Recovery Programme (ERP) supported by a multi-disciplinary team (MDT) was introduced aiming to improve patient outcomes, decrease length of stay and increase cost-efficiency. Methods: The elements of ERP are pre-operative assessment, decreased physical stress of surgery, structured peri-operative management and early mobilization. Following consultation with an MDT consisting of hospital and ward managers, urological surgeons and nurses and pre-operative assessment staff a patient pathway was designed. This involved producing procedure specific care plans, educating staff and improving processes. A pilot study was implemented to identify potential problems within the pathway. Once these had been resolved the ERP was fully implemented. Results: The pilot identified several problems which may be used as important learning points for other trusts planning on introducing ERP. Resolution led to full implementation and a decrease in our median length of stay to 8 days. The next stage is consultation with primary care to perform pre-operative investigations in the community. Conclusion: Implementing ERP brings many benefits. In order for it to be successful it is essential that all members of the urological team are involved from a very early stage in the consultation process. Staff education and clear communication channels between management and clinical staff allow seamless integration of new patient pathways. We have seen a decrease in cystectomy median
length of stay from 14 to 8 days.

Institution
(Dale, Yap, Lee, Gujral) King George Hospital, Essex, United Kingdom
Publisher
Blackwell Publishing Ltd

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12. BAUS Section of Oncology Meeting.
[Journal: Conference Review]
AN: 70452079
The proceedings contain 26 papers. The topics discussed include: evolution of docetaxel-based therapy for metastatic castrate-resistant prostate cancer; a pilot study of the tolerability of two BCG maintenance regimens in the treatment of high risk superficial bladder cancer; improvement of an enhanced recovery protocol for radical cystectomy; a comparison of two BCG instillation regimens for non-muscle invasive bladder cancer: a retrospective cohort analysis of side effect profiles; intravesical erosion of transvaginal tape (TVT) successfully treated by open removal of the eroded tape portion; small bowel perforation in a patient with metastatic renal cancer treated with radiotherapy and Sunitinib; a comparison of open radical nephrectomy complication rates in patients treated with neoadjuvant Sunitinib for metastatic renal cell carcinoma versus non-metastatic renal cell carcinoma; and techniques to improve urinary continence during laparoscopic radical retropubic prostatectomy (LRRP).
Publisher
Elsevier BV

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http://nhs4315978.resolver.library.nhs.uk?sid=OVID:embase&id=pmid:&id=doi:&issn=1875-9742&isbn=&volume=3&issue=6&spage=&pages=&date=20101028&title=British+Journal+of+Medical+and+Surgical+Urology&atitle=Contemporary+oncological+and+nononcological+outcomes+after+radical+cystectomy+with+and+without+ERAS+(Enhanced+Recovery+After+Surgery)+for+urothelial+cancer+(UC).&aulast=&pid=%3Can%3E70452079%3Can%3E70452079%3Can%3E70452079%3Can%3E70452079&issn=1875-9742&isbn=&volume=3&issue=6&spage=&pages=&date=20101028&title=British+Journal+of+Medical+and+Surgical+Urology&atitle=Contemporary+oncological+and+nononcological+outcomes+after+radical+cystectomy+with+and+without+ERAS+(Enhanced+Recovery+After+Surgery)+for+urothelial+cancer+(UC).&aulast=&pid=%3Can%3E70452079%3Can%3E70452079%3Can%3E70452079%3Can%3E70452079

13. Contemporary oncological and nononcological outcomes after radical cystectomy with and without ERAS (Enhanced Recovery After Surgery) for urothelial carcinoma (UC).
Stewart S., Middleton S., Bantanidis P., Mariappan P.
[Journal: Conference Abstract]
AN: 70480071
Introduction: Having used multimodal perioperative optimisation with an ERAS regime for cystectomy and described its early post-operative benefits (BJUI 101 Suppl 5:50-51, 2008), we analyse the oncological and long-term outcomes with and without ERAS.
Patients and Methods: All patients undergoing cystectomy from one surgeon’s series since
2006 had detailed proformas completed prospectively with peri-operative and follow up variables. Patients were stratified into pre-ERAS (prior to May 2007) and ERAS (May 2007 onwards). Follow up included timed, protocol-driven, cross-sectional and upper-tract imaging and urethroscopy. Analysis excluded patients having laparoscopic cystectomy and continent urinary diversions. Kaplan-Meier graphs and log-rank tests assessed stage stratified survival outcomes for matched pairs with and without ERAS. Results: Between 2006 and 2010, 205 operations were performed. None of the patients had rectal injuries or bowel anastomotic leaks. Overall, 184 radical cystectomies were done for UC with pre-operative N0M0 disease and 160 (87.1%) had bilateral extended pelvic lymphadenectomies performed. For UC, the overall survival and disease specific survival (DSS) at 3 years were 59.7% and 71.8%, respectively. DSS for pT0, pTis, pT1, pT2, pT3, pT4, pN0 and pN1 were 100%, 100%, 83.3%, 90.6%, 66.7%, 25%, 78.6% and 33.3%, respectively (log-rank p < 0.001). Analysis revealed that ERAS resulted in significantly earlier return of bowel function, ability to tolerate food following surgery and reduced infection rates, with no differences in the DSS or delayed complication rates compared with pre-ERAS patients. Conclusions: This contemporary series of radical cystectomy and extended pelvic lymphadenectomy reveals ERAS improved surgical outcomes without compromise in oncological outcomes.

Institution
(Stewart, Middleton, Bantanidis, Mariappan) Department of Urology, Western General Hospital, Edinburgh, United Kingdom
Publisher
Blackwell Publishing Ltd

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Ayres B.E., Kelliher N., Swinn M., Das G., Bailey M.J., Perry M.J.A.
[Journal: Conference Abstract]
AN: 70452065
Introduction: Enhanced recovery protocols (ERP) have successfully reduced length of admission in colorectal surgery and concentrate on early enteral feeding, early mobilisation, standardised analgesia and empowering patients. We investigated the role of ERP in open radical cystectomy. Patients and methods: Prior to introducing an ERP data was collected prospectively on 16 consecutive patients. Since the introduction of ERP in June 2009, a further 21 consecutive patients have undergone open radical cystectomy. Patients on ERP have preoperative carbohydrate drinks, nasogastric feeding starting a few hours postoperatively, epidural analgesia, no bowel preparation and mobilisation on day 1. Operative details, length of ITU and hospital stay, postoperative recovery and complications were analysed. Results: (Table presented) Conclusion: Early feeding, early mobilisation and no preoperative bowel preparation appear to generally reduce length of ITU and hospital stay without increasing the complication or readmission rate. Longer follow-up is required to assess whether ERP will allow patients to resume normal daily activities quicker.
Institution
(Ayres, Kelliher, Swinn, Das, Bailey, Perry) St George's Hospital, London, United Kingdom
Publisher
Elsevier BV
15. Optimisation of intra-operative haemodynamics using trans-oesophageal Doppler monitoring in radical cystectomy: Reduced physiological stress and accelerated bowel recovery.

Pillai P.L., Durkan G.C., Johnson M.I., Snowden C., Cosgrove J., Thorpe A.C.

Introduction: Cystectomy is a major operative procedure generating significant pro-inflammatory responses, demanding an increased need for tissue perfusion. Transoesophageal Doppler is a minimally invasive technique for continuous circulatory monitoring, aiming at goal directed intraoperative fluid optimisation. Patient and Methods: Forty-eight patients undergoing cystectomy were recruited for a single-centred, double-blinded, prospective, randomised, controlled trial. Both trial and control groups had standard anaesthesia and Doppler monitoring (n = 24 in each group). The trial group received protocolised fluid boluses based on Doppler measurements of stroke-volume and corrected-flow time. Changes in haemodynamics, fluid requirements and bowel recovery were noted. Interl-6 measurements, indicative of physiological stress, were taken. Conclusion: Trans-oesophageal Doppler monitoring in cystectomy improves intraoperative haemodynamics, achieving effective tissue perfusion and reducing physiological stress during surgery. This in-turn accelerates post-operative bowel recovery with a reduced incidence of ileus, allowing early hospital discharge.

Institution
(Pillai, Durkan, Johnson, Snowden, Cosgrove, Thorpe) Freeman Hospital, Newcastle upon Tyne, United Kingdom
Publisher
Blackwell Publishing Ltd

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Arumainayagam N., McGrath J., Jefferson K.P., Gillatt D.A.

Objective: To describe and assess an enhanced recovery protocol (ERP) for the peri-operative management of patients undergoing radical cystectomy (RC), which was started at our institution on 1 October 2005, as RC is associated with increased morbidity and longer inpatient stays than other major urological procedures. Patients and
METHODS: An ERP was introduced in our institution that focused on reduced bowel preparation, and standardized feeding and analgesic regimens. In all, 112 consecutive patients were compared, i.e. 56 before implementing the ERP and 56 since introducing the ERP. The primary outcome measures were duration of total inpatient stay and interval from surgery to discharge, and the morbidity and mortality. Data were analysed retrospectively from cancer network and hospital records. RESULTS: The demographics of the two groups showed no significant difference in age, gender distribution, American Society of Anesthesiologists grade, or type of urinary diversion. Re-admission, mortality and morbidity rates showed no statistically significant difference between the groups. The median (interquartile range) duration of hospital stay was 17 (15-23) days in the no-ERP group, and 13 (11-17) days in the ERP group (significantly different, P < 0.001, Wilcoxon rank-sum test). The median duration of recovery after RC was 15 (13-21) days in the no-ERP group and 12 (10-15) days in the ERP group (significantly different, P = 0.001, Wilcoxon rank-sum test). CONCLUSION: The introduction of an ERP was associated with significantly reduced hospital stay, with no deleterious effect on morbidity or mortality.

2008 The Authors.

Institution
(Arumainayagam, McGrath, Jefferson, Gillatt) Bristol Urological Institute, Southmead Hospital, Bristol, United Kingdom (Arumainayagam) Clinical Research Registrar, Bristol Urological Institute, Southmead Hospital, Bristol, BS10 5NB, United Kingdom

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Koupparis A., Dunn J., Gillatt D., Rowe E.
British Journal of Medical and Surgical Urology. 3 (6) (pp 237-240), 2010. Date of Publication: November 2010.
[Journal: Article]
AN: 2010562140

Introduction: Enhanced recovery protocols (ERPs) aim to improve outcome following major abdominal surgery. Our ERP for radical cystectomy focuses on reduced bowel preparation and standardised feeding and analgesic regimens. Although the ERP safely decreased hospital stay, time to return of bowel function has not been affected. The current study aims to assess the addition of chewing gum on return of bowel function as part of an ERP. Patients and methods: We examined the addition of chewing gum to our ERP. Data was obtained retrospectively from 112 consecutive patients, 56 before and 56 after implementing chewing gum in to the EPR. The primary outcome measured was return of bowel function signified by first defecation after surgery. Results: The demographics of the two groups showed no significant difference in age, gender distribution, American Society of Anesthesiologists grade, or type of urinary diversion. A significant reduction in the time to return of bowel function was observed in patients using chewing gum post-operatively (4 versus 6 days, p< 0.0001). The median inpatient stay was 13 days in both groups; however there was a trend to an earlier discharge in those patients receiving chewing gum. Conclusion: The introduction of chewing gum to our ERP is associated with a faster return of bowel function and may lead to a reduced inpatient stay. 2010 British Association of Urological Surgeons.

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18. The importance of physical therapy in the postoperative period after total cystectomy of bladder carcinoma.


[Journal Article]
UI: 21630555

UNLABELLED: The aim of this study is to evaluate the results and complications after radical cystectomy due to carcinoma of the bladder and to point out the significance of post-operative physical treatment and rehabilitation of these patients.

MATERIAL AND METHOD: In the period of 3 years (2007-2010), at the Urological Clinic in Belgrade, we performed 195 total cystectomies for invasive bladder carcinoma with the use of different types of urinary diversion. The operation was performed in 162 men (83%) and 33 women (17%).

RESULTS: Survival, complications and postoperative recovery was dependent on the type of urinary diversion which was used, stage of disease and general condition of patients before surgery. The worst result was achieved in patients who underwent ureterocutaneostomy and the complications were represented in 30% of patients. In the group of patients where the ileal conduit was applied, complications were recorded in 10% of patients, while mortality was 5%. In the group of patients where the continent urinary diversion was performed, complications were recorded in 5% of patients in mind of stecoral fistulas, urinary fistulas and ileus.

CONCLUSION: The timely application of the physical therapy and rehabilitation in these patients is of great importance, because it reduces complications and allows faster recovery and release from the hospital.

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Maffezzini M. Gerbi G. Campodonico F. Parodi D.


[Journal Article]
UI: 17572196

OBJECTIVES: To discuss a multimodal perioperative plan aimed at reducing
postoperative ileus and complications associated with radical cystectomy and urinary reconstruction.

METHODS: The protocol consisted of preoperative, intraoperative, and postoperative measures. The clinical parameters assessed were the time to the return of bowel movements, the presence and duration of postoperative ileus, the presence and duration of an intolerance to oral feeding, the interval to re-institution of a regular diet, and complications. The biochemical parameters (serum total protein and albumin levels and lymphocyte counts) were also assessed. A sample of 40 patients treated before the implementation of this protocol was included for comparison.

RESULTS: A total of 71 patients, mean age 74 years and American Society of Anesthesiologists status 2 and 3, consecutively underwent radical surgery for bladder cancer and were evaluable for results and complications. Urinary diversion was a heterotopic neobladder in 27 patients (38%), orthotopic in 23 (32.3%), and an ileal conduit in 21 (29.5%). Bowel movements returned after a median of 2 days (range 1 to 6), intolerance to oral feeding was observed in 17 (23.9%) of 71 patients, and the median time to re-institution of a regular diet was 4 days (range 3 to 9). The complication rate was 26.7%, and the mortality rate was 4.2%. No effects were observed on postoperative protein depletion. In the historical group, the median time to diet resumption was 8 days (range 7 to 12).

CONCLUSIONS: A short time to the resumption of normal intestinal function and a low incidence of postoperative ileus after cystectomy was observed. However, the incidence of postoperative protein depletion was unaffected. Additional studies should address this subject.

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20. Robotic radical cystectomy: where are we today, where will we be tomorrow? [Review]

While open radical cystectomy remains the gold-standard treatment for muscle-invasive bladder cancer and high-risk non-muscle invasive disease, robotic assisted radical cystectomy (RARC) has been gaining popularity over the past decade. The robotic approach has the potential advantages of less intraoperative blood loss, shorter hospital stay, less post-operative narcotic requirement, quicker return of bowel function, and earlier convalescence with an acceptable surgical learning curve for surgeons adept at robotic radical prostatectomy. While short to intermediate term oncologic results from several small RARC series are promising, bladder cancer remains a potentially lethal malignancy necessitating long-term follow-up. This article aims to review the currently published literature, important technical aspects of the operation, oncologic and functional outcomes, and the future direction of RARC.

Status MEDLINE
Olbert PJ.  Baumann L.  Hegele A.  Schrader AJ.  Hofmann R.  
UI: 19142627  
Fast-track (FT) protocols in visceral surgery incorporate innovative aspects of analgesia, bowel preparation, enteralization, and drainage management. In elective colorectal surgery, these concepts are the standard of care. In uro-oncological surgery, however, they are used very reluctantly, although the available data show that early nasogastric tube removal and enteralization and the omission of preoperative bowel preparation have positive effects on convalescence and hospital stay. The work presented here was initiated to compare traditional and FT management in a randomized fashion, focusing on complication rates and the course of enteralization as outcome measures. Complication rates, especially of bowel-associated complications, were not increased in the FT group. The postoperative stay on the intermediate care unit was significantly shorter in the FT cohort, and enteralization was completed significantly earlier. FT management is not associated with an increased risk of major complications in urinary diversion surgery. Controlled clinical trials are needed to further evaluate important aspects of a standardized perioperative plan of care (including antibiotic regimen and earlier removal of ureteral and neobladder catheters). [References: 20]  
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22. Fast track program in patients undergoing radical cystectomy: results in 362 consecutive patients.
BACKGROUND: This article outlines our current perioperative management of patients undergoing cystectomy and urinary diversion using advancements in perioperative care to allow for early institution of an oral diet and early hospital discharge.
STUDY DESIGN: Three hundred sixty-two consecutive patients underwent radical cystectomy and urinary diversion with curative intent (2001 through 2008). Each underwent a perioperative care plan ("fast track" program). Throughout our experience, evidence-based modifications to this program were instituted. We analyzed the impact of these modifications and report the outcomes with the most recent 100 patients in whom no additional modification has been used.
RESULTS: Mean age of patients is 66.3 years, with 44% of the patients older than age 70 years and 12% older than age 80 years. We found no detrimental effects to immediate removal of the orogastric tube at the end of the procedure, but found a beneficial effect of empiric metoclopramide use, with lower rates of nausea and vomiting. Perioperative antibiotic coverage has been reduced to 24 hours as per American Urological Association guidelines. Gum-chewing has also been shown to be of benefit with regard to a more rapid recovery of bowel function. Use of nonnarcotic analgesics (eg, ketolac) has also been central in the pathway. Finally, early institution of an oral diet has been an original and central component to our fast track program.
CONCLUSIONS: Successful application of a fast track program has been applied to our patients undergoing radical cystectomy and urinary diversion, with the potential to use evidence-based modifications to reduce morbidity and improve recovery. Copyright (c) 2010 American College of Surgeons. Published by Elsevier Inc. All rights reserved.
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23. Introduction of an enhanced recovery protocol for radical cystectomy.
OBJECTIVE: To describe and assess an enhanced recovery protocol (ERP) for the perioperative management of patients undergoing radical cystectomy (RC), which was started at our institution on 1 October 2005, as RC is associated with increased morbidity and longer inpatient stays than other major urological procedures.
PATIENTS AND METHODS: An ERP was introduced in our institution that focused on reduced bowel preparation, and standardized feeding and analgesic regimens. In all, 112 consecutive patients were compared, i.e. 56 before implementing the ERP and 56 since introducing the ERP. The primary outcome measures were duration of total inpatient stay
and interval from surgery to discharge, and the morbidity and mortality. Data were
analysed retrospectively from cancer network and hospital records.

RESULTS: The demographics of the two groups showed no significant difference in age,
gender distribution, American Society of Anesthesiologists grade, or type of urinary
diversion. Re-admission, mortality and morbidity rates showed no statistically significant
difference between the groups. The median (interquartile range) duration of hospital stay
was 17 (15-23) days in the no-ERP group, and 13 (11-17) days in the ERP group
(significantly different, P < 0.001, Wilcoxon rank-sum test). The median duration of
recovery after RC was 15 (13-21) days in the no-ERP group and 12 (10-15) days in the
ERP group (significantly different, P = 0.001, Wilcoxon rank-sum test).

CONCLUSION: The introduction of an ERP was associated with significantly reduced
hospital stay, with no deleterious effect on morbidity or mortality.
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PJ Olbert, A Hegele... - European urology-supplement.com 
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