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**Search details**

Review articles for periprosthetic fractures between 2009-present

**Resources searched**

Cochrane Library; CINAHL; MEDLINE; Google Scholar

**Database search terms:** (periprosthetic OR peri-prosthetic OR "peri prosthetic"), fracture*, exp FRACtURES, BONE, exp PERIPROStHETIC FrACtures, [Limit to: English Language and Review Articles and Publication Year 2009-2013]

**Evidence search string(s):** (periprosthetic OR peri-prosthetic) fracture

**Google search string(s):** (periprosthetic OR peri-prosthetic) fracture (review OR literature OR systematic OR current)

**Guidelines**

N/A

**Evidence-based reviews**

None found

**Published research**

**Title:** Proximal femoral replacement and allograft prosthesis composite in the treatment of periprosthetic fractures with significant proximal bone loss.

**Citation:** Orthopaedic Audio-Synopsis Continuing Medical Education [Sound]
Femoral bone loss due to periprosthetic fracture, a challenging problem in total hip arthroplasty (THA), is increasingly encountered due to a rise in the number of revision THAs performed. Allograft prosthesis composite (APC) and proximal femoral replacement (PFR) are two available options for management of patients with difficult type-B3 Vancouver periprosthetic fractures. The treatment algorithm for patients with these fractures has been extensively studied and is influenced by the age and activity level of the patient. APC is often preferred in young and active patients in an attempt to preserve bone stock while older and less active patients are considered candidates for PFR. In spite of the high rate of overall complications with these two procedures, reported survivorship is acceptable. Treating patients with these complicated fractures is fraught with complications and, even with successful treatment, the outcomes are not as promising as those associated with primary hip replacement. In this paper, we aimed to review available published reports about PFR and APC for treatment of periprosthetic fractures around THAs. 2012 Tianjin Hospital and Wiley Publishing Asia Pty Ltd.

Effective treatment of periprosthetic fractures following TKA continues to represent a surgical challenge. The incidence and frequency of these complicated type of fractures is expected to increase as the number of TKA as well as the activity level of these patients steadily rises. A careful and correct analysis of the fracture pattern, its classification, the quality of the existing bone stock and the fixation / loosening of the underlying prosthetic system has to precede decision making for successful conservative or surgical treatment. Therefore, improved diagnostic radiographic imaging of fracture patterns and reliable assessment of prosthesis loosening progressive development of new implant methods and refinement of soft tissue preserving surgical techniques will hold the key for regaining the functional level prior to the fracture.
Title: Periprosthetic fracture fixation of the femur following total hip arthroplasty: a review of biomechanical testing.

Citation: Clinical Biomechanics, January 2011, vol./is. 26/1(13-22), 0268-0033;1879-1271 (2011 Jan)

Author(s): Moazen M, Jones AC, Jin Z, Wilcox RK, Tsiridis E

Language: English

Abstract: BACKGROUND: periprosthetic femoral fracture can occur following total hip arthroplasty. Fixation of these fractures are challenging due to the combination of fractured bone with an existing prosthesis. There are several clinical studies reporting the failure of fixation methods used for these fractures, highlighting the importance of further biomechanical studies in this area. METHODS: the current literature on biomechanical models of periprosthetic femoral fracture fixation is reviewed. The methodologies involved in the experimental and computational studies of this fixation are described and compared. FINDINGS: areas which require further investigation are highlighted and the potential use of finite element analysis as a computational tool to test the current fixation methods is addressed. INTERPRETATION: biomechanical models have huge potential to assess the effectiveness of different fixation methods. Experimental in vitro models have been used to mimic periprosthetic femoral fracture fixation however, the numbers of measurements that are possible in these studies are relatively limited due to the cost and data acquisition constraints. Computer modelling and in particular finite element analysis is a complimentary method that could be used to examine existing protocols for the treatment of periprosthetic femoral fracture and, potentially, find optimum fixation methods for specific fracture types. 2010 Elsevier Ltd. All rights reserved.

Title: Periprosthetic humeral fractures after shoulder and elbow arthroplasty.

Citation: Acta Chirurgiae Orthopaedicae et Traumatologiae Cechoslovaca, 2011, vol./is. 78/6(490-500), 0001-5415;0001-5415 (2011)

Author(s): Greiner S, Stein V, Scheibel M

Language: English

Abstract: Due to rapidly increasing numbers of arthroplasty surgeries of the upper extremity, periprosthetic humeral fractures after shoulder and elbow arthroplasty, formerly described as rare, may hence increase in the near future. Therefore the aim of the present work was to give an overview of the existing literature including possible classifications as well as an update on treatment concepts and experiences with own cases. After a literature research have been done, existing prevalence, classifications and treatment options, mostly described in case series, were processed to create an overview of the existing state of knowledge. Additionally 7 own cases are described in detail to show the different treatment options used at the authors department. The currently used classification systems take fracture location, angulation and rotation and fixation of the implant into account. Possible solutions for periprosthetic fractures of the humerus include conservative management, open reduction and internal fixation for stable prosthesis and long stemmed implants for lose implants as well as the use of additional allo- or autogeneous bone grafting and reverse shoulder arthroplasty in revision cases with rotator cuff dysfunction. After all treatment of periprosthetic humeral fractures after shoulder and elbow arthroplasty remain a challenging
problem.

**Publication Type**: Case Reports, Journal Article, Review  
**Source**: MEDLINE

**Title**: Periprosthetic femoral fractures associated with hip arthroplasty.  
**Citation**: Orthopedics, 01 December 2010, vol./is. 33/12(908-918), 01477447  
**Author(s)**: Zhiyong, Hou, Bowen, Thomas R., Smith, Wade R.  
**Language**: English  
**Publication Type**: journal article  
**Source**: CINAHL  
**Full Text**: Available from **EBSCOhost** in Orthopedics

**Title**: Traumatic periprosthetic acetabular fracture treated by acute one-stage revision arthroplasty. A case report and review of the literature.  
**Citation**: Injury, April 2010, vol./is. 41/4(421-4), 0020-1383;1879-0267 (2010 Apr)  
**Author(s)**: Gelalis ID, Politis AN, Arnaoutoglou CM, Georgakopoulos N, Mtsiou D, Xenakis TA  
**Language**: English  
**Publication Type**: Case Reports, Journal Article, Review  
**Source**: MEDLINE  
**Full Text**: Available from the **ULHT Library and Knowledge Services’ eJournal collection** in Injury - International Journal for the Care of the Injured

**Title**: Failed internal fixation due to osteonecrosis following traumatic periprosthetic fracture after hip resurfacing arthroplasty.  
**Citation**: Acta Orthopaedica, December 2009, vol./is. 80/6(666-9), 1745-3674;1745-3682 (2009 Dec)  
**Author(s)**: Zustin J, Winter E  
**Language**: English  
**Publication Type**: Case Reports, Journal Article, Review  
**Source**: MEDLINE  
**Full Text**: Available from **National Library of Medicine** in Acta Orthopaedica  
Available from **EBSCOhost** in Acta Orthopaedica  
Available from **EBSCOhost** in Acta Orthopaedica

**Title**: Treatment of periprosthetic fractures after total knee arthroplasty.  
**Citation**: Current Orthopaedic Practice, 01 January 2009, vol./is. 20/1(58-64), 19407041  
**Author(s)**: Boulton CL, Rodriguez EK  
**Language**: English  
**Abstract**: Periprosthetic fracture is a relatively rare complication after total knee arthroplasty. As the prevalence of total knee arthroplasty increases, however, the incidence of periprosthetic fractures is increasing concomitantly. The treatment of periprosthetic fractures about the knee is expected to become a more frequent challenge for practicing orthopaedic surgeons. The distal femur is the most common site for a periprosthetic fracture about total knee arthroplasty components (0.3-4.2%); periprosthetic fractures of the patella (0.7-1.8%) and proximal tibia (0.4-0.5%) occur to a lesser degree. Periprosthetic fractures are associated with significant morbidity and mortality and can be technically challenging to treat. Stable fractures in the presence of stable implants can be treated nonoperatively. Unstable fractures in the presence of stable implants are best treated with open reduction and internal fixation, whereas those associated with implant loosening require revision arthroplasty. Open reduction and internal fixation often are complicated by decreased bone density and fracture patterns where limited bone is available for fixation. The present article focuses on the treatment of periprosthetic
fractures about stable total knee arthroplasty components that do not require revision arthroplasty.

Publication Type: journal article
Source: CINAHL
Full Text: Available from the ULHT Library and Knowledge Services' eJournal collection in Current Orthopaedic Practice

Google Scholar
The management of complex periprosthetic humeral fractures: a case series of strut allograft augmentation, and a review of the literature
AJ Trompeter, RR Gupta - Strategies in Trauma and Limb Reconstruction, 2013 - Springer
Abstract There is little published discussion on the management of postoperative periprosthetic humeral fractures where rotator cuff function is poor, the bone stock is dwindling or both. This is a phenomenon increasingly seen in the older, more osteoporotic ...
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Management of shoulder periprosthetic fractures: Our institutional experience and review of the literature
GV Mineo, R Accetta, M Franceschini, GP Dell'Acqua… - Injury, 2013 - Elsevier
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J Parvizi, DN Vegari - Journal of orthopaedic trauma, 2011 - journals.lww.com
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N Dehghan, M Chehade… - Journal of orthopaedic …, 2011 - journals.lww.com
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