Orthogeriatrics

Current Awareness Bulletin

November 2015
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**November** (1pm)

- Weds 4th: Literature Searching
- Thurs 12th: Understanding articles
- Fri 20th: Statistics
- Mon 23rd: Literature Searching

**December** (12pm)

- Tues 1st: Understanding articles
- Weds 9th: Statistics
- Thurs 17th: Literature Searching

**More dates in the new year waiting to be confirmed.**
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Medical consultation for patients with hip fracture

Authors: R Sean Morrison, MD; Albert L Siu, MD, MSPH


INTRODUCTION — A total of 310,000 individuals were hospitalized with hip fractures in the United States in 2003 [1]. Worldwide, the incidence of hip fracture exceeds 1.6 million adults annually [2]. Hip fracture rates among the elderly are declining in the US, possibly due to a concurrent rise in bisphosphonate use [3].

Hip fracture is associated with increased mortality rates for both the short-term (3 to 6 months) and long-term (5 to 10 years) [4]. A meta-analysis of prospective cohort studies found a five- to eight-fold increase in mortality rates within three months of fracture; this comparative increase relative to age-matched controls without a history of hip fracture lessened but persisted ten years following the fracture. Of those who survive to six months, only 60 percent recover their prefracture walking ability and only 50 percent recover their prefracture ability to perform activities of daily living [5].

Hospital readmission rates after initial treatment for hip fracture range from 20 percent within 30 days of discharge (for a predominantly male group of veterans) [6] to 30 percent within six months (for a group predominantly female) [7]. Early readmission correlated with medical comorbidities including fluid and electrolyte problems, renal insufficiency, and underlying cardiac and pulmonary disease [6].

Hip fracture is typically considered a surgical disease. However, medical consultants are almost universally involved in the care of these patients [8]. Medical consultation is associated with improved one year mortality for patients hospitalized with hip fracture [9]. This topic will review the most common decisions that medical consultants are asked to make in the care of the patient with hip fracture. In particular, we will focus on:

- Timing of surgical intervention
- Prophylactic antibiotics
- Thromboembolic prophylaxis
- Prevention and management of delirium
- Assessment for underlying osteoporosis
Anesthesia for the older adult

Author: Sheila Barnett, MD


INTRODUCTION — Older adults (≥65 years of age) account for a disproportionately large fraction of all surgical procedures performed in the United States (figure 1) [1,2]. Older age is a risk factor for perioperative mortality, but preoperative comorbidity and invasiveness of the surgical procedure are other important predictors of mortality in this age group [3-9]. The American Society of Anesthesiologists (ASA) Physical Status score (table 1) [10], indicating severe systemic disease, is an established predictor of adverse outcomes after surgery in patients of all ages but does not specify age as a factor [3-6].

This topic will discuss age-related physiologic changes that affect anesthetic drugs and techniques, optimal perioperative anesthetic management, and risk factors for complications in older patients.
New from Cochrane Library of Systematic Reviews

**Interventions for treating proximal humeral fractures in adults**

Helen HG Handoll, Stig Brorson

Editorial Group: [Cochrane Bone, Joint and Muscle Trauma Group](#)

Published Online: 11 NOV 2015: Assessed as up-to-date: 10 NOV 2014

**Abstract**

**Background**: Fracture of the proximal humerus, often termed shoulder fracture, is a common injury in older people. The management of these fractures varies widely. This is an update of a Cochrane Review first published in 2001 and last updated in 2012.

**Objectives**: To assess the effects (benefits and harms) of treatment and rehabilitation interventions for proximal humeral fractures in adults.

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**New from NICE**

There is no new guidance relating to Orthogeriatrics or fractures in the elderly this month
Title: Orthogeriatrics in the management of frail older patients with a fragility fracture.

Citation: Osteoporosis international : a journal established as result of cooperation between the European Foundation for Osteoporosis and the National Osteoporosis Foundation of the USA, Oct 2015, vol. 26, no. 10, p. 2387-2399 (October 2015)

Author(s): Sabharwal, S, Wilson, H

Abstract: This review article examines the role of orthogeriatric management for frail older patients with a fragility fracture. The history of orthogeriatrics and its application in clinical practice around the world is reported, and an evidence-based evaluation for the effect of orthogeriatric management on patient morbidity and mortality is also provided. It has been more than 50 years since the role of the geriatrician in the management of patients with a hip fracture was first described. The evidence that supports an orthogeriatric model of care has grown exponentially over the last decade. This evidence base is primarily related to hip fractures and demonstrates reduced morbidity and mortality rates amongst patients managed with a recognised model of orthogeriatric care. The societal and economic burden of hip fracture has led to health economic evaluations within this field, many of which have concluded that orthogeriatric management results in cost-effective clinical practice. Based on existing clinical and economic research, national clinical practice guidelines have been developed in several countries which recommend orthogeriatric participation in the management of older patients with a hip fracture. Compliance with such guidance has already demonstrated improved patient outcomes. Although the pathogenesis and prognosis of other types of fragility fracture may be as poor, there is a dearth of clinical research that evaluates the effect of orthogeriatric management on such injuries. Looking to the future, orthogeriatric management is likely to become more widespread, and the robust collection and reporting of patient outcomes from national registries will provide a greater understanding of the impact of orthogeriatric models in the care of all frail older patients with any type of fragility fracture.
Title: Refresher course: Regional anaesthesia and postoperative pain management for total hip and knee replacement

Citation: Regional Anesthesia and Pain Medicine, September 2015, vol./is. 40/5 SUPPL. 1(e56-e57), 1098-7339 (September-October 2015)

Author(s): Galitzine S.

Abstract: Introduction: Since the very first lower limb arthroplasty - a primitive hinge knee joint made of ivory - was reported by Themistocles Gluck in 1860, the implants, surgical equipment and techniques for hip (THR) and knee (TKR) replacements came a long, long way. So did the anaesthesia. Today primary hip and knee arthroplasties constitute the bulk of elective lower limb orthopaedic surgery, have low mortality [1,2], good outcomes and high patients' satisfaction [3,4]. Advances in anaesthesia made it possible to operate on very frail elderly patients and patients who are not so elderly but have significant comorbidities.

(this abstract has been shortened)

Title: Epidemiology of proximal humerus fractures

Citation: Archives of osteoporosis, 2015, vol./is. 10/(209), 1862-3514 (2015)

Author(s): Launonen A.P., Lepola V., Saranko A., Flinkkila T., Laitinen M., Mattila V.M.

Language: English

Abstract: UNLABELLED: There are only a few previous population-based studies that include both inpatient and outpatient treatment data. The aim of this study was to investigate the epidemiology of proximal humerus fractures. The incidence of proximal humerus fractures increases with age, and we observe a seasonal variation strongly favoring winter months. PURPOSE: Proximal humerus fractures are the third most common osteoporotic fracture type observed in elderly patients, after wrist and hip fractures. However, few previous population-based studies include both inpatient and outpatient treatment data. The aim of this study was to investigate the incidence, fracture morphology, and treatment method provided in cases of proximal humerus fractures. METHODS: We retrospectively studied patient records from a mid-sized town in Finland between the years 2006 and 2010. The following data were collected from the medical records: age, sex, date of the fracture, laterality of the fracture, mechanism of injury, treatment method, and other associated fractures at the time of the original injury. Sex and age distributions of the patient population at risk (>18 years old) were calculated for the study period. RESULTS: A total of 678 patients (females n=503, 73 %) with 692 proximal humerus fractures were identified. The unadjusted incidence was 82 (95 % CI 76 to 88) per 100,000 person-years, 114 (95 % CI 104 to 124), and 47 (95 % CI 41 to 54) per 100,000 person-years in females and males, respectively. Incidence increased toward the older age groups. Clear seasonal variation was observed, two-part fractures were most common (428, 62 %), the majority of the fractures (n=539, 78 %) were treated nonoperatively with a sling. CONCLUSION: The incidence of
proximal humerus fractures increases with age, and we observe a seasonal variation strongly favoring winter months. It is evident that proximal humerus fractures cause considerable morbidity among elderly people and consume health care resources.

**Title:** Prevalent fragility fractures as risk factor for skeletal muscle function deficit and dysmobility syndrome in post-menopausal women.

**Citation:** Aging clinical and experimental research, Oct 2015, vol. 27 Suppl 1, p. 11-16 (October 2015)

**Author(s):** Iolascon, Giovanni, Moretti, Antimo, Giamattei, Maria Teresa, Migliaccio, Silvia, Gimigliano, Francesca

**Abstract:** Fragility fractures are a major burden for health and social care in elderly people. In order to identify earlier the "frail elders", new concepts of "dysmobility syndrome" and skeletal muscle function deficit (SMFD), including sarcopenia, osteoporosis, obesity, and mobility limitation, leading to a higher risk of fractures, have been recently introduced. There are very few studies investigating the association between fragility fractures and both the dysmobility syndrome and the SMFD. The objective of our study is to investigate the role of previous fragility fractures as a risk factor in determining the dysmobility syndrome and/or the SMFD in post-menopausal women. In this case-control study, we retrospectively examined data from the medical records of post-menopausal women aged 50 or older. We divided the study population in two groups. The first group includes women with a previous fragility fracture (cases) and the other group includes women without any previous osteoporotic fracture (controls). We identified the subjects with "dysmobility syndrome", "dynapenic SMFD", "sarcopenic SMFD", and "mixed SMFD" in both groups. Data collected refer to a 6-month period. We retrieved data of 121 post-menopausal women, 77 (63.64 %) had already sustained a fragility fracture at any site (cases). The risk for dysmobility syndrome was significantly higher (adjusted OR for age and serum 25-OH vitamin D3 of 2.46) in the cases compared with the controls. An early diagnosis of conditions limiting mobility, including dysmobility syndrome, might be useful to identify, among patients with osteoporotic fractures, those who might have a higher risk of a new fragility fracture.

**Title:** Are hospital process quality indicators influenced by socio-demographic health determinants.

**Citation:** European journal of public health, Oct 2015, vol. 25, no. 5, p. 759-765

**Author(s):** Buja, Alessandra, Canavese, Daniel, Furlan, Patrizia, Lago, Laura, Saia, Mario, Baldo, Vincenzo

**Abstract:** This population-level health service study aimed to address whether hospitals assure the same quality of care to people in equal need, i.e. to see if any associations exist between social determinants and adherence to four hospital process indicators clearly identified as being linked to better health outcomes for patients. This was a retrospective
cohort study based on administrative data collected in the Veneto Region (northeast Italy). We included residents of the Veneto Region hospitalized for ST-segment elevation myocardial infarction (STEMI) or acute myocardial infarction (AMI), hip fracture, or cholecystitis, and women giving birth, who were discharged from any hospital operating under the Veneto Regional Health Service between January 2012 and December 2012. The following quality indicator rates were calculated: patients with STEMI-AMI treated with percutaneous coronary intervention, elderly patients with hip fractures who underwent surgery within 48 h of admission, laparoscopic cholecystectomies and women who underwent cesarean section. A multilevel, multivariable logistic regression analyses were conducted to test the association between age, gender, formal education or citizenship and the quality of hospital care processes. All the inpatient hospital care process quality indicators measured were associated with an undesirable number of disparities concerning the social determinants. Monitoring the evidence-based hospital health care process indicators reveals undesirable disparities. Administrative data sets are of considerable practical value in broad-based quality assessments and as a screening tool, also in the health disparities domain. © The Author 2015. Published by Oxford University Press on behalf of the European Public Health Association. All rights reserved.

Title: Management of the Elderly With Vertebral Compression Fractures.

Citation: Neurosurgery, Oct 2015, vol. 77 Suppl 4, p. S33. (October 2015)

Author(s): Goldstein, Christina L, Chutkan, Norman B, Choma, Theodore J, Orr, R Douglas

Abstract: Vertebral compression fractures (VCFs) are the most common type of fracture secondary to osteoporosis. These fractures are associated with significant rates of morbidity and mortality and annual direct medical expenditures of more than $1 billion in the United States. Although many patients will respond favorably to nonsurgical care of their VCF, contemporary natural history data suggest that more than 40% of patients may fail to achieve significant pain relief within 12 months of symptom onset. As a result, percutaneous vertebral augmentation is often used to hasten symptom resolution and return of function. However, controversy regarding the role of kyphoplasty and vertebroplasty in the treatment of symptomatic VCFs exists. The purposes of this review are (1) to outline the epidemiology of VCFs as well as the physical morbidity and economic impact of these injuries, (2) to familiarize the reader with the best available evidence surrounding the operative and nonoperative treatment of VCFs, and (3) to examine the literature pertaining to the cost-effectiveness of surgical management of VCFs with the overarching goal of helping physicians make informed decisions regarding symptomatic VCF treatment. AE, adverse eventCI, confidence intervalKP, kyphoplastyHRQOL, health-related quality of lifeINVEST, Investigational Vertebroplasty Safety and Efficacy TrialMD, mean differenceODI, Oswestry Disability IndexQUALEFFO, Quality of Life Questionnaire of the European Foundation for OsteoporosisRCT, randomized, controlled trialRMDQ, Roland-Morris Disability QuestionnaireSF-36, Short Form 36VCF, vertebral compression fractureVP, vertebroplasty.

Title: Perioperative Medical Management of Spine Surgery Patients With Osteoporosis.
**Abstract:** Management of spine surgery patients with osteoporosis is challenging because of the difficulty of instrumenting and the potential complications, including nonunion and adjacent level fractures. Treatment of this patient population should involve a multidisciplinary approach including the spine surgeon, primary care physician, endocrinologist, and physical therapist. Indication for preoperative treatment before spinal fusion surgery is unclear. All patients should receive calcium and vitamin D. Hormone replacement therapy, including estrogen or selective estrogen receptor modulators, should be considered for elderly female patients with decreased bone mass. Bisphosphonates or intermittent parathyroid hormone are reserved for those with significant bone loss in the spine. Pretreatment with antiresorption medications affect bone remodeling, which is a vital part of graft incorporation and fusion. Although there have been numerous animal studies, there is limited clinical evidence. Accordingly, surgery should be delayed, if possible, to treat the osteoporosis before the intervention. Treatment may include bisphosphonates, as well as newer agents, such as recombinant parathyroid hormone. Further clinical data are needed to understand the relative advantages/disadvantage of antiresorptive vs anabolic agents, as well as the impact of administration of these medications before vs after fusion surgery. Future clinical studies will enable better understanding of the impact of current therapies on biomechanics and fusion outcomes in this unique and increasingly prevalent patient population. BMD, bone mineral density; PTH, parathyroid hormone; RCT, randomized, controlled trial; rhPTH, recombinant human parathyroid hormone; SERM, selective estrogen receptor modulator.

**Title:** Lumbar Surgery in the Elderly Provides Significant Health Benefit in the US Health Care System: Patient-Reported Outcomes in 4370 Patients From the N2QOD Registry.

**Citation:** Neurosurgery, Oct 2015, vol. 77 Suppl 4, p. S125. (October 2015)

**Author(s):** McGirt, Matthew J, Parker, Scott L, Hilibrand, Alan, Mummaneni, Praveen, Glassman, Steven D, Devin, Clinton J, Asher, Anthony L

**Abstract:** Lumbar spine degenerative pathologies are prevalent in the United States. The health benefit of spine surgery in the elderly has been questioned. To compare effectiveness, morbidity, and quality of care associated with surgical management of degenerative lumbar spinal disorders in elderly vs nonelderly patients. The National Neurosurgery Quality and Outcomes Database registry prospectively collects measures of surgical safety and patient-reported outcomes for 1 year after surgery. All lumbar surgery cases were queried to compare the elderly surgical population (70 years of age and older) and associated outcomes with patients younger than 70 years of age. A total of 4370 lumbar spine surgeries were enrolled in National Neurosurgery Quality and Outcomes Database with 1-year follow-up; 1020 (23%) were elderly patients. The elderly had an increased
incidence of heart disease, osteoporosis, high-risk anesthesia grade (American Society of Anesthesiologists grade 3/4), more than 3 level surgery, ambulation assist device use, unemployment, female sex, white race, and stenosis as a diagnosis. The elderly patients had a lower body mass index, incidence of anxiety/depression, liability/workers' compensation claims, and disc herniation as a diagnosis. Length of hospitalization and postdischarge inpatient rehabilitation/nursing facility was significantly greater in the elderly. The incidence of surgical complications and 90-day hospital readmission were similar. Significant and equivalent improvements at 1 year in pain, disability, and quality of life were reported by both elderly and nonelderly patients overall and for each unique spine diagnosis. For all ages, lumbar spine surgery resulted in significant improvement in pain, disability, and quality of life. Elderly patients experienced equivalent and significant health benefit in all measured health domains without an increased rate of surgical complications or hospital readmissions. Elective lumbar spine surgery in the elderly provides significant gains in health status, justifying its continued use in this growing population. HIPAA, Health Insurance Portability and Accountability ActNQOD, National Neurosurgery Quality and Outcomes DatabaseODI, Oswestry Disability IndexQALY, quality-adjusted life yearREDCap, Research Electronic Data CaptureSPORT, Spine Patient Outcomes Research TrialVAS, visual analog scale.

Title: The effect of early surgery after hip fracture on 1-year mortality.

Citation: BMC Geriatrics, 2015, vol./is. 15/(1-8), 14712318

Abstract: Background: Hip fracture injuries are identified as one of the most serious healthcare problems affecting older people. Many studies have explored the associations among patient characteristics, treatment processes, time to surgery and various outcomes in patients hospitalized for hip fracture. The objective of the present study is to evaluate the difference in 1-year mortality after hip fracture between patients undergoing early surgery (within 2 days) and patients undergoing delayed surgery in Italy. Methods: Observational, retrospective study based on the Hospital Information System (HIS). This cohort study included patients aged 65 years and older who were residing in Italy and were admitted to an acute care hospital for a hip fracture between 1 January 2007 and 31 December 2012. A multivariate Cox regression analysis was used to assess the effect of early surgery on the likelihood of 1-year mortality after hip fracture, adjusting for risk factors that could affect the outcome under study. The absolute number of deaths prevented by exposure to early surgery was calculated. Results: We studied a total of 405,037 admissions for hip fracture. Patients who underwent surgery within 2 days had lower 1-year mortality compared to those who waited for surgery more than 2 days (Hazard Ratios -HR-: 0.83; 95 % CI: 0.82-0.85). The number of deaths prevented by the exposure to early surgery was 5691. Conclusions: This study is the first to evaluate the association between time to surgery and 1-year mortality for all Italian elderly patients hospitalized for hip fracture. The study confirmed the previous reports on the association between delayed surgery and increased mortality and complication rates in elderly patients admitted for hip fracture. Our data support the notion that deviating from surgical guidelines in hip fracture is costly, in terms of both human life and excess hospital stay.
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The most recent issues of the following journals:

- Bone and Joint Journal (UK)
- Osteoporosis International

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Bone and Joint Journal (UK)
Vol. 97-B, iss. 11, November 2015

http://www.bjj.boneandjoint.org.uk/content/current

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Contact your outreach librarian:

Jo Hooper, outreach librarian

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