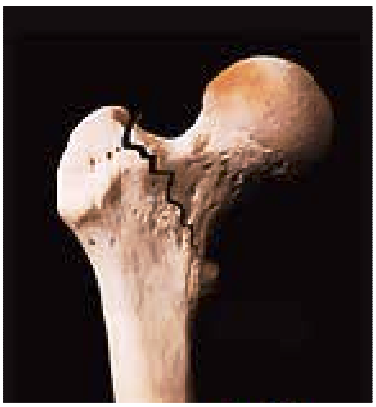
What is the effect of orthopaedic and trauma surgical treatment on waiting time, length of hospital stay and mortality among patients with a hip fracture, specifically pertrochanteric hip fracture?



Master Thesis

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Keywords

‘hip fracture’ ‘pertrochanteric hip fracture’ ‘waiting time’
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Abstract

Background

Previous studies did not reach consensus about the optimal treatment of pertrochanteric hip fractures. Hip fracture patients are treated by a trauma surgeon or an orthopaedic surgeon. Which surgeon performs the surgery, initially depends on the working schedule at the Acute and Emergency Department. The surgeons use other techniques to fix the hip fracture. Orthopaedic surgeons are more likely to replace parts of the hip with prostheses, while trauma surgeons more often use osteosyntheses to repair the hip.

Purpose

The purpose of this study is to evaluate the effect of orthopaedic and trauma surgical treatment on length of hospital stay (LOS) and mortality among patients with a pertrochanteric hip fracture. In addition, the relation between ASA classification and waiting time between admission at the hospital and surgery will be evaluated, according to the performance indicator on time for treatment of hip fractures.

Methods

This is a retrospective follow-up study. Hip fracture patients have been pseudo-randomized to an orthopaedic surgeon or a trauma surgeon. During a two-year period 485 patients with a hip fracture, of which 184 patients with a pertrochanteric hip fracture, have been included in the study population. For data collection, existing databases with patient information of the hospital have been used. Primary outcome parameters in the study are waiting time between admission at the hospital and surgery for all patients with a hip fracture, and length of hospital stay and mortality for patients with a pertrochanteric hip fracture. Data have been analyzed using SPSS version 18.0. Independent t-test, chi-squared test, Mann Whitney-U test and Cox regression have been used for analyses.

Results

Of the 184 patients with a pertrochanteric hip fracture 136 (73.9%) were assigned to trauma surgeons and 48 (26.1%) to orthopaedic surgeons. More patients assigned to orthopaedic surgeons underwent replacement of the hip with prostheses (72.9%) compared to patients assigned to trauma surgeons (9.4%, $p < 0.001$). Median follow-up period is 3.5 months for patients assigned to orthopaedic surgeons and 3.7 months for patients assigned to trauma surgeons. Median LOS for patients assigned to orthopaedic surgeons was longer for patients assigned to trauma surgeons ($p < 0.001$). Mortality rate for patients assigned to orthopaedic surgeons appeared to be higher compared to patients assigned to trauma surgeons, although not-significantly. The associated hazard ratio, adjusted for age, gender, ASA classification following the guidelines of American Society of Anaesthesiologists and AO fracture classification following guidelines of Association for Osteosynthesis was also increased.

Not many differences were found for the percentage of patients operated within 24 hours after admission by an orthopaedic surgeon or a trauma surgeon. Only for patients with ASA3-4 a higher percentage had surgery within 24 hours in the group of patients who were referred from a trauma surgeon to an orthopaedic surgeon.

Conclusion

Patients with a pertrochanteric hip fracture assigned to trauma surgeons appear to have a shorter LOS and appear to have a lower mortality rate than patients with a pertrochanteric hip fracture assigned to orthopaedic surgeons. In addition, trauma surgeons seem to perform slightly better on the performance indicator on time, mainly when it comes to ASA3-4 patients. Translating this into the techniques used by the surgeons, it seems that using osteosyntheses for repairing the fracture of the hip turns out into better patient outcomes. However, to draw clear conclusions about the effect of trauma and orthopaedic surgical treatment on patient outcomes among patients with a pertrochanteric hip fracture, the study population should be larger and follow-up period should be completed up to 1 year after hip fracture for all patients.