

Patient injuries in the treatment of ankle fractures in Finland

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A malleolar ankle fracture is one of the most common bony injuries requiring operative treatment. Around 4000 operations are carried out yearly in Finland (population 5.4 million). Complications in ankle fracture treatment may result in permanent disability. Therefore analyzing risk factors predisposing to treatment failure is of utmost importance. The information provided by the studies should be used for focused education to avoid the known pitfalls. On the other hand, using the collected data of failures for a risk analysis, individual risk of each patient can be better estimated in the future. Finally, this material gives a possibility to evaluate and compare the accuracy of the treatment processes of all surgical units treating ankle fractures in Finland.

Patient Injuries Centre has worked since 1987 in Finland to analyze claims submitted by patients who have sustained complications in their treatment. Compensation to a patient will be given, whenever the complication is considered to be avoidable, if there has been a severe infection, or permanent disability occurred.

An analysis of compensated injuries associated with ankle fractures during 2002–2007 showed 273 compensated injuries in 239 patients (1). The main causes for compensated injuries were technical intra-operative failure (35%), inadequate diagnostics (23%), incorrect choice of treatment (15%) and deep infection (13%).

One third of the patients suffered at least some sort of permanent disability.

The sick leave time was markedly raised, especially in the infected cases (an average 383 days).

Failed diagnostics was seen mainly in basic health care units, but false decision making for treatment was seen as frequently both in outpatient and in hospital units. The majority of the compensated injuries were due to operative care. Poor postoperative reduction, insufficient malleolar fixation, inadequate treatment of syndesmotic injuries, and iatrogenic lesions to the lateral branch of the superficial peroneal nerve were

the main causes for the compensated cases. It should be emphasized, that only those cases sent by patients will be analyzed in the Patient Injuries Centre, and probably a notable amount of re-operations or suboptimal end-results never even entered the process.

Even a slight displacement between the fracture fragments in a weight-bearing articular surface may alter the contact pressures and lead to secondary osteoarthritis. The risk is markedly elevated whenever the reduction or fixation fails. In an analysis of 5133 consecutive ankle fractures treated at the Helsinki University Central Hospital (Töölö Hospital), 79 (1,6%) cases were re-operated within the first postoperative week due to non-acceptable findings in postoperative radiographs. In the majority (57%) of the cases the reason for re-operation was related to syndesmotic reduction and/or fixation (2).

Malleolar fractures are somewhat falsely considered as basic fractures, which could be easily handled even by young residents. Interestingly, in the compensated injuries 30% of the failed cases were seen in patients operated by senior orthopedic surgeons.

Evaluation of the accuracy of the treatment is based on an abstract level of a “skilled orthopaedic surgeon”, which means a standard level of clinical knowl-

edge and technical operative skills. In the treatment of ordinary malleolar fractures this means:

- good knowledge of fracture types and their treatment protocols
- capability to reduce the main fragments (lateral and medial malleolus, and a large posterior fragment) in an anatomical or nearly anatomical position, depending of the severity of the fracture and/or patient related limitations
- accurate reduction of the fibula in the incisura fibularis, and adequate fixation of an unstable syndesmosis
- adequate postoperative care and rehabilitation

An analysis of deep infections following operative treatment of ankle fractures was carried out by Ovaska et al (3). They analyzed 1923 consecutive ankle fractures in 1915 patients treated in Töölö Hospital between 2006–2009, and identified 131 (6,8%) patients with a deep infection. They found that tobacco use, alcohol abuse, fracture dislocation, and soft tissue injuries were the most important patient-related risk factors for deep infection. Operative time exceeding for 90 minutes was an independent surgery-related risk factor. Application of a cast in the operating room was associated with a decreased risk for infection.

All this information is of paramount importance when evaluating possible treatment options, especially in patients with multiple risk factors for postoperative infection.

Accurate diagnostics and optimal treatment is essential for all patients with an ankle fracture. When operative treatment is selected, an anatomical reduction should be the main goal. Complications are still frequent, although most of them could be avoided. The treatment of ankle fractures is not as simple as is generally thought among orthopaedic surgeons. Continuous education, training and learning from the known mistakes is essential for each surgeon treating ankle fractures.

References

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