

Osteosuture in Fixation of Displaced Lateral Third Clavicle Fractures: A Case Report

Authors : Patrícia Pires, Renata Vaz, Bárbara Teles, Marco Pato, Pedro Beckert

Abstract : Introduction: The management of lateral third clavicle fractures can be challenging due to difficulty in distinguishing subtle variations in the fracture pattern, which may be suggestive of potential fracture instability. They occur most often in men between 30 and 50 years of age, and in individuals over 70 years of age, its distribution is equal between both men and women. These fractures account for 10%-30% of all clavicle fractures and roughly 30%-45% of all clavicle nonunion fractures. Lateral third clavicle fractures may be treated conservatively or surgically, and there is no gold standard, although the risk of nonunion or pseudoarthrosis impacts the recommendation of surgical treatment when these fractures are unstable. There are many strategies for surgical treatment, including locking plates, hook plates fixation, coracoclavicular fixation using suture anchors, devices or screws, tension band fixation with suture or wire, transacromial Kirschner wire fixation and arthroscopically assisted techniques. Whenever taking the hardware into consideration, we must not disregard that obtaining adequate lateral fixation of small fragments is a difficult task, and plates are more associated to local irritation. The aim of the appropriate treatment is to ensure fracture healing and a rapid return to preinjury activities of daily living but, as explained, definitive treatment strategies have not been established and the variety of techniques available add up to the discussion of this topic. Methods and Results: We present a clinical case of a 43-year-old man with the diagnosis of a lateral third clavicle fracture (Neer IIC) in the sequence of a fall on his right shoulder after a bicycle fall. He was operated three days after the injury, and through K-wire temporary fixation and indirect reduction using a ZipTight, he underwent osteosynthesis with an interfragmentary figure-of-eight tension band with polydioxanone suture (PDS). Two weeks later, there was a good alignment. He kept the sling until 6 weeks post-op, avoiding efforts. At 7-weeks post-op, there was still a good alignment, starting the physiotherapy exercises. After 10 months, he had no limitation in mobility or pain and returned to work with complete recovery in strength. Conclusion: Some distal clavicle fractures may be conservatively treated, but it is widely accepted that unstable fractures require surgical treatment to obtain superior clinical outcomes. In the clinical case presented, the authors chose an osteosuture technique due to the fracture pattern, its location. Since there isn't a consensus on the preferred fixation method, it is important for surgeons to be skilled in various techniques and decide with their patient which approach is most appropriate for them, weighting the risk-benefit of each method. For instance, with the suture technique used, there is no wire migration or breakage, and it doesn't require a reoperation for hardware removal; there is also less tissue exposure since it requires a smaller approach in comparison to the plate fixation and avoids cuff tears like the hook plate. The good clinical outcome on this case report serves the purpose of expanding the consideration of this method as a therapeutic option.

Keywords : lateral third, clavicle, suture, fixation

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