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Tibial Pilon Fracture In A Skeletally Immature Patient: Mini Open With Intrafocal Pinning And Reduction Technique; A Case Report

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INTRODUCTION:

Pilon fractures are intra-articular fractures of the distal tibia associated with variable talar injury, articular disruption, and comminution. These fractures were first described by Destot in 1911 and have been reported to represent 7% of all tibial fractures and <1% of all lower extremity fractures in adults. Despite the low incidence of these fractures, the resulting morbidity is considerable. The vast majority of reported cases have involved adults, with sporadic inclusion of children. Pilon fractures are the result of complex forces with axial compression, forced dorsiflexion, often associated with violent rotation resulting in severe, comminuted

fractures. Several classification systems have been described; however, the most widely used system in the literature is that proposed by Ruedi and Allgower. They classified pilon fractures into three categories, based on the extent of articular surface fracturing. Type I fractures were nondisplaced, type II fractures were displaced with minimal comminution, and type III injuries were markedly comminuted

CASE REPORT

We are reporting a case of a 13-year-old boy who fell from rooftop of 2 metres height and landed on his right ankle. Having sustained closed comminuted fracture of distal end right tibia and right lateral malleolus, he was duly planned for surgical intervention. We performed a mini open approach with intrafocal pinning, reduction and further stabilized by conventional plating. Patient was discharged home on day 3 post operation with no complications.

DISCUSSION:

Preservation of the soft tissue is of particular importance in the care of pilon fractures. Traditional open reduction internal fixation of pilon fractures allows for direct visualization of the fracture(s) but is often criticized for the large exposure and periosteal stripping. External fixation has also been used but has

not demonstrated much advantage to internal fixation and requires significant postoperative care. As such, mini open or minimally invasive approach has gained popularity and fast becoming an option in management of pilon fractures. The reduction technique in mini open surgeries are always difficult. In this case, we used an intrafocal pinning and reduction method to reduce the articular fragment. Kapandji described the use of intrafocal K-wires to buttress the dorsal and radial fragments in extra-articular distal radius fractures. We applied the same principles, albeit in this case for the articular fragments of tibial plafond



▲ Pre-operative and intra-operative images

CONCLUSION:

Mini open approach supplemented with intrafocal pinning and reduction technique offers a reliable option in treatment of pilon fractures, especially in the skeletally immature group.

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