

A Case Of Sports-Related Patella Sleeve Fracture In Children

Faris MK, Ikhwan MS, Rifa AS, Kamil MK

Department of Orthopedic Surgery, Hospital Tengku Ampuan Rahimah, 41200 Klang, Selangor, Malaysia

INTRODUCTION:

Patella is the largest sesamoid bone, located in between the quadricep tendon, and underwent ossification at the age of 5 to 6 years old. Immature patella is surrounded by thick articular cartilage. In pediatric age group, patella fracture is uncommon. However, most frequent type is the osteochondral avulsion fracture which associated with sports activity.

SUMMARY:

We report a case of 10-year-old healthy boy, who had an alleged sports injury while playing futsal with his colleagues. The exact mechanism was fall onto a cement floor with his left knee in partially flexed position after a rough tackle.

At casualty, the patient presents with pain and swelling over his left knee, which aggravated on movement. The knee is grossly swollen and noted to have a high-riding patella, with palpable gap over central aspect of the knee. Patient was unable to extend knee. Neurovascular examination is otherwise intact. Plain radiograph of the left knee shows patella alta with fracture of the inferior pole of patella. Subsequent sonography of the knee suggests avulsion fracture of inferior pole of patella with quadricep tendon injury.

Patient was initially treated as closed avulsion fracture of the inferior pole of left patella and was subsequently immobilized in a cylinder slab. The next day, patient underwent open reduction and internal fixation.

Intra-operative finding reveals avulsion fracture of the osteochondral fragment of inferior patella. Post-operatively, patient was put on a cast and underwent rehabilitation program.

DISCUSSIONS:

A sleeve patella fracture is defined as avulsion of bony fragment of the distal pole of patella at the osteochondral junction together with its articular cartilage, periosteum and retinaculum. It is caused by an acute injury from powerful quadricep muscle contraction on a flexed knee.

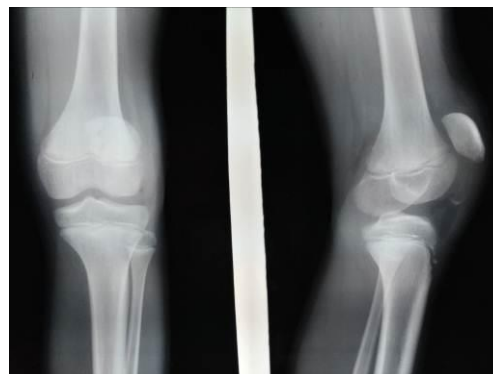


Figure 1: Pre-operative plain radiograph of left knee



Figure 2: Intra-operative findings of intact patella with cartilage fracture

Eliciting a detailed mechanism of injury with thorough clinical assessment may lead to the diagnosis. This fracture is commonly missed on plain radiograph due to its minimal bony portion in the avulsed fragment.

Definitive reduction and rigid fixation is important as the blood supply of young patella derived mainly from the distal pole as well as to regain extensor mechanism function.

CONCLUSION:

A sleeve patella fracture in pediatric age is easily missed. An awareness of such mechanism of injury with characteristic clinical and radiological findings may help with the diagnosis. A prompt diagnosis with proper intervention may improve outcome and prevent unwanted complications.

REFERENCE:

1. Gao GX et al (2008) *Sleeve Fracture Of The Patella In Children*, Singapore: Journal of Orthopaedic Surgery.