

Posterior Cruciate Ligament Avulsion Fracture in Paediatric: A Case Report

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INTRODUCTION:

Posterior cruciate ligament avulsion fracture in paediatric population is a rare entity. The exact incidence is unknown due to mis-diagnosis and under-reporting. Common mechanisms include direct hit to the proximal tibia in a flexed knee, fall onto hyperflexion of the knee and sudden knee hyperextension. The ligaments are relatively stronger than the epiphysis which result in bony avulsion rather than mid-substance tear. Clinical assessment and radiological interpretation can be difficult in this age group. Till date, very limited literatures are available to aid in the management. Most available literatures are case reports. Many treatment guidelines are based on studies of adult-type.

REPORT:

We present a case of 13-year-old boy who had a fall from the staircase on a hyperflexion knee. There was immediate swelling and pain which prevent weight bearing. Examination findings were restricted during the acute phase but revealed posterior sag sign with tenderness over the posterior knee. Further imaging revealed avulsion fracture of the posterior cruciate ligament with mild displacement. The fragment was displaced by 4.7mm in sagittal view and 2.8mm in axial view. After discussion with the parents regarding options of treatment, they decided to proceed with cast immobilisation and serial observation. After 3 weeks, repeated radiograph showed no further fracture displacement.

There is no gold standard of managing PCL avulsion fracture in paediatric age-group. The treatment guidelines whether to operate or put on cast, derived from the evidence of adult traumatology⁽¹⁾. Most case-reports describe the successful outcome of operative fixation whereas few case-reports reveal similar

outcome with conservative treatment. *Yoon et al* reported the amount of displacement to guide on operative or non-operative treatment⁽¹⁾. Cast immobilisation in displacement of <6.7mm leads similar functional outcome as the operative group.

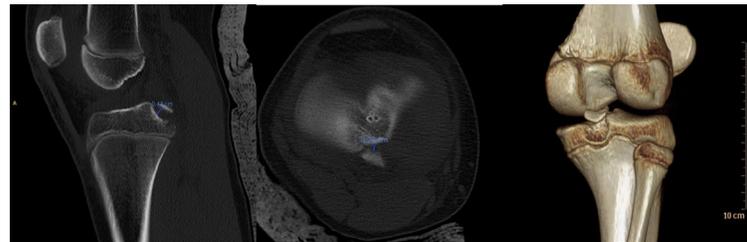


Figure 1: Computed tomography scan and 3D reconstruction of right knee.

CONCLUSION:

PCL avulsion fracture in paediatric is a rare entity. Evidence-based literature to aid in treatment is scarce. Long-term outcome of conservative treatment is still controversial due to minimal case-reports. Conservative treatment should include serial outpatient clinical assessment and radiological follow up. Rapid switch to operative intervention is mandatory in a case of failure.

REFERENCES:

1. Yoon KH et al. The amount of displacement can determine non-operative treatment in posterior cruciate ligament avulsion fracture. *Knee Surgery, Sports Traumatology, Arthroscopy*. 2021;29(4):1269-75.