

Ischial tuberosity avulsion fracture in a young athlete treated with suture bridge technique.

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INTRODUCTION:

Incidence of bony avulsion fracture of ischial tuberosity is rare and infrequently requires surgical intervention. However, non-union is a complication that causes significant morbidity in athlete presenting with displaced fracture managed conservatively. We report a case of ischial tuberosity avulsion fracture in a skeletally immature athlete managed surgically.

REPORT:

15 years old track-and-field athlete, presented with sudden onset severe pain in his left buttock while taking off during the high jump event. Forceful contraction of hamstring is the mechanism of injury. Computed tomography confirmed a left avulsion fracture of the ischial tuberosity with approximately 18mm displacement.



Figure 1: 3D Computed tomography showed displaced left ischial tuberosity avulsion fracture

Open reduction and fracture stabilization was achieved with suture bridge technique. This was achieved by placing patient in prone position with hip and knee joint in flexion, to reduce hamstrings and sciatic nerve tension. A transverse incision was made along the gluteal crease (sub-gluteal) centered on the ischial tuberosity. Fracture site as approach thru intermuscular plane between the gluteus maximus and hamstring muscles. The avulsed fragment was identified and fracture site prepared. 2 suture anchors were placed on the medial and lateral edge as distal row passing the sutures thru the avulsed fragment. Followed by 2 knotless anchor in criss cross manner over to medial and lateral edge as proximal row.

Post-surgery rehabilitation was challenging. He was advised to rest in prone positions predominantly for first 2 weeks. A knee brace locked in 15-degree flexion to avoid extension of knee and flexion of hip joint so as to prevent stretching of hamstrings for 6 weeks. Throughout isometric quadriceps exercises was allowed. He started weight bearing at the end of

8 weeks. The difficult aspect of rehabilitation was perineal care and toileting, whereby the patient had to use a bed pan for 4 weeks to prevent hamstring activation.

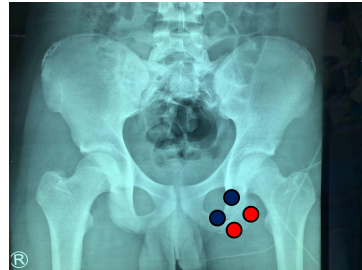


Figure 2: red dots represent distal row, blue dots represent proximal row

Patient was permitted to start hip and knee range of motion and strengthening exercises with squats and jumps involving quick hamstring stretching. At 3 months post-surgery, bilateral hip and knee range of motion are equal. Hamstrings muscle Medical Research Council grade was 5.

DISCUSSION:

The sub gluteal approach with transverse skin incision and intermuscular plane provided easy access to the avulsed fragment, as it allowed a wider surgical field and possible to extend. The risk of iatrogenic injury of the sciatic nerve is reduced because of intermuscular plane approach. The transverse incision was used in this patient provided good cosmetic.

The suture bridge technique allowed adequate compression and stable fixation evidence by non-displacement and clinical improvement at 3 months.

The added advantage with this technique is avoidance of second surgery for implant removal. The disadvantage of this procedure is the initial method of immobilization and restriction in perineal care to protect the fixation technique

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