

Painless Nonunion After Triple Pelvic Osteotomy

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Abstract:

Triple pelvic osteotomy is an accepted technique to correct acetabular dysplasia and degenerative labral pathology in young adults. Few papers mentioned the rate of nonunion at site of osteotomy of pubic bone and ischeal bone. No report about nonunion at site of osteotomy of iliac bone (up to the author's knowledge). Here the author reported a case of triple pelvic osteotomy which is complicated by painless nonunion at site of osteotomy of iliac bone which required excision of pseudarthrosis and autologous bone grafting. Healing was achieved after three months.

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Introduction

Acetabular dysplasia and degenerative labral pathology in young adults can be treated with triple pelvic osteotomy. ⁽¹⁻⁸⁾ The whole of the acetabulum is mobilised by osteotomies through the ischium, pubis and ilium and reorientated in three dimensions. This creates temporary pelvic discontinuity with a potentially unstable hemi-pelvis.

Pseudarthrosis may develop at one or more osteotomy sites. ⁽⁹⁻¹¹⁾ Authores did not find any report in literatures about nonunion at the site of osteotomy of iliac bone. We present here a case of nonunion at the site of osteotomy of iliac bone which is painless.

Case Scenario

An 18 years old female who had been treated in early childhood for developmental dysplasia of left hip surgically, presented to our clinic complaining of mild hip pain after walking for a long distance. Clinically she had full range of motion of the left hip, and no leg length discrepancy. She was walking well with no limping. Radiologically she had congruent joint with residual acetabular dysplasia (Fig.1).



Fig (1). Congruent joint with residual acetabular dysplasia.

We performed triple pelvic osteotomy for her and fixed the iliac bone with many threaded wires and grafted it with autologous bone graft (as described by Steel HH 1) (Fig.2).



Fig (2). Fixation of the iliac bone with threaded wires and grafting it with autologous bone graft.

Patient was put on traction for two weeks and then allowed to be mobilised by non weight bearing for six weeks followed by partial weight bearing for another six weeks.

She returned to full weight bearing after three months. After six months during her follow up she had no pain but complained of clicky sound at the operation site. X-Rays showed nonunion at the osteotomy site of iliac bone and complete union of other osteotomies. (Fig.3)



Fig (3). Nonunion at the osteotomy site of iliac bone and complete union of other osteotomies.

She was taken again to operating theatre where we found fibrous nonunion at the site of iliac osteotomy. We removed all the fibrous

tissue from the nonunion site and refreshed the edges and used bone autograft from iliac crest to fill the gap. (Fig.4)



Fig (4). Refreshing the edges and use of the bone autograft from iliac crest to fill the gap (after removal of fibrous tissue from the nonunion site).

Patient put on traction again for tow weeks and then allowed to be mobilised by partial weight bearing for six weeks. Three month follow up

X-Rays showed complete healing of the osteotomy site and the patient had no complaint and returned back to full normal activity. (Fig.5)



Fig (5). Complete healing of the osteotomy site.

Discussion

The triple pelvic osteotomy is an accepted procedure to treat acetabular dysplasia and degenerative labral pathology in young adults.⁽¹⁻⁸⁾ The whole of the acetabulum is mobilised by osteotomies through the ischium, pubis and ilium and reorientated in three dimensions. This creates temporary pelvic discontinuity with a potentially unstable hemipelvis. Pseudarthrosis may develop at one or more osteotomy sites.⁽⁹⁻¹¹⁾

Tschauner C, et al. reported five cases of nonunion at the level of ischium and pubis⁽⁹⁻¹⁰⁾, et al. reported seven cases of nonunion also at the level of ischium and pubis⁽¹¹⁾. No report in literatures (to the author's best knowledge) are available about nonunion at the site of osteotomy of iliac bone.

Conclusion

Adequate bony contact should be ensured at all three osteotomy sites even when extensive rotational corrections are undertaken and usage of rigid fixation like two or three cannulated screws and bone graft can reduce the chance of nonunion. Patients should not sit on the ipsilateral ischial tuberosity for six weeks. In our view, triple pelvic osteotomy is a reliable procedure with a low revision rate.

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