

‘Silent’ Transverse Patella Fracture Following Anterior Cruciate Ligament Reconstruction

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INTRODUCTION

Patella fracture is a rare but specific complication of anterior cruciate ligament (ACL) reconstruction using bone-patella tendon-bone autograft. When this complication occurs early internal fixation is recommended and need not compromise the outcome. We report two cases of displaced transverse patella fracture occurring after reconstruction but which were not diagnosed and presented with late sequelae.

CASE 1

A 52-year-old male slipped on steps 3 months following ACL bone-patella tendon-bone reconstruction. His knee gave way and he felt a “tearing” sensation. The original surgeon reviewed him, blood was aspirated and physiotherapy advised. No radiographs were taken. The patient continued to complain of anterior knee pain and swelling, and therefore underwent an arthroscopy, which was reported as ‘normal’.

One year following his post-operative fall he presented for a second opinion complaining of retropatella pain and grating, weakness and the feeling of instability. Examination at this stage revealed reduced quadriceps tone and bulk, and abnormal patella shape, size and contours. Radiographs confirmed a displaced, ununited transverse fracture of the patella (Figure 1). The patient underwent a patella osteotomy with rigid internal fixation (Figure 2) and achieved bony union without further problem. At 6-month review he had regained quadriceps tone and reported a vast improvement in symptoms.

CASE 2

A 25-year-old female presented 5 years after ACL reconstruction with a locked right knee due to a bucket handle tear. Examination of the knee revealed reduced quadriceps tone, an effusion and a prominent superior portion of the patella with irregularity and tenderness over the bone-patella tendon-bone graft site. Radiographs revealed an old displaced, ununited transverse fracture of the patella. Further questioning revealed that 6 weeks after the ACL reconstruction she had slipped resulting in acute pain and swelling of the right knee. The patient was reassured by the original surgeon and treated symptomatically. No radiographs were taken.

The patient underwent arthroscopic assessment and excision of the medial meniscal tear. The retropatella surface had excessive fibrous tissue in the fracture line, which was debrided along with a trochlea chondroplasty. At 6-month review her symptoms were much improved and quadriceps tone had increased. The patient did not wish to consider a patella osteotomy unless her symptoms deteriorated.

DISCUSSION

Patella fracture is a recognised complication of anterior cruciate ligament (ACL) reconstruction using a bone-patella tendon-bone autograft (1,2,3,4). The reported incidence of this complication is approximately 2% (2,3). This may occur at the time of harvest or post-operatively. Recognition of this complication and immediate/early internal fixation should not compromise rehabilitation or outcome from ACL reconstruction (1,2,3,5).

Transverse patella fractures usually occur post-operatively, following low energy trauma. It has been suggested that transverse patella fracture may be due to decreased vascularisation of the patella following surgery (5). Others have argued that transverse fractures result from tension from quadriceps muscle contraction acting on an osteopaenic patella following surgery and a period of immobilisation (6). It is likely that displaced transverse patella fractures result from the donor site acting as a stress riser (2).

Treatment of patella malunion is difficult. Historically patellectomy was the procedure of choice (7). However this may well be a less satisfactory option than arthroscopic debridement or corrective osteotomy. However there is little debate that acute displaced patella fractures should be reduced and internally fixed. In the two cases we report the opportunity to intervene and prevent a chronic problem was lost. Where the post-operative patient's history and symptoms indicate a problem appropriate radiographs should always be obtained.

Figure 1: Displaced, un-united transverse patella fracture.



Figure 2: Patella osteotomy, reduction and internal fixation allowed bony union.



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