CASE REPORT

Fracture in congenitally dislocated patella

D. Chakravarty *, C. Gadepalli, A. Kumar

Peterborough Hospitals NHS Trust, Department Orthopaedics and Trauma, Thorpe Road, Peterborough PE3 6DA, UK

Accepted 11 May 2005

Introduction

The patella may be subluxed, laterally tilted or dislocated as a part of a congenital abnormality of the extensor mechanism of the knee. This is frequently a component of a syndrome such as chondrodysplasia, arthrogryposis, skeletal dysplasia or Down’s syndrome. Early recognition and management are essential, as delayed treatment enhances the potential of recurrence and disability. Neglected cases require extensive excisions of contractures to ensure reduction of patellar dislocation along with more dificult and complicated surgical reconstructions to ensure patellar stability. 

A concomitant injury to the dislocated patella significantly complicates the situation and makes surgical procedures even more delicate and challenging.

Case report

We present a 43-year-old patient with mental retardation, learning difficulties and congenital dislocation of the left patella. He had a surgical history of operation on his left knee for a failed effort at surgical correction of the congenital dislocation of the patella. Before the injury he was able to flex his knee up to 50°, albeit painfully. He suffered a fall and sustained a vertical fracture of the left patella. Clinically he presented with an effusion, which was aspirated by his GP, and it confirmed haemarthrosis. He was unable to bear weight on the left leg. There was no external wound. The patella was lying laterally on the lateral condyle and it was diffusely tender. Radiographs revealed patella alta with vertical fracture of the patella (Figs. 1 and 2). There was valgus deformity of the knee with lateral subluxation of the whole joint. The lateral condyle was hypoplastic. He underwent open reduction and internal fixation of the fracture along with proximal realignment of the left vastus lateralis (Figs. 3 and 4).

Operative technique

A longitudinal incision over the previous scar was made and old scar was removed. The fracture was reduced, compressed and fixed with two partially threaded cancellous screws. Proximal realignment of vastus lateralis was then performed. The rectus femoris tendon was defined clearly and incised longitudinally in the midline starting 5 cm above the superior pole of the patella then curving along the lateral border of the patella down to the lateral border of the tibial tuberosity. The quadriiceps incision was extended proximally beneath the subcutaneous fat for 2–3 cm with scissors. This
released the contracted vastus lateralis completely from the vastus medialis and patella. The vastus lateralis was reattached to the rest of the quadriceps tendon in the flexed (>90°) position of the knee. In this position, vastus lateralis slides proximally from 1.5 to 3.5 cm (depending upon the amount of contracture). The vastus lateralis tendon is repaired to the rest of the tendon in the new position. The defect in the lower retinaculum is left open or filled with transposed fat pad. Post realignment showed excellent tracking of the patella in the patella groove on the table. Examination under image intensifier confirmed excellent patellar tracking (Fig. 5).

Post-operatively he was allowed partial weight-bearing and the knee was left free to be mobilized. He underwent intensive physiotherapy and recov-

Figure 1 Pre-operative X-ray lateral view left patella.

Figure 2 Pre-operative X-ray AP view left patella. Note the fracture in the dislocated patella and hypoplastic lateral femoral condyle.

Figure 3 Post-operative X-ray lateral view left patella.

Figure 4 Post-operative X-ray AP view left patella.
ered remarkably well. Although initially he had 20° extension lag, he improved significantly over the next few months and soon had achieved full extension with active straight leg raise (SLR) and good quadriceps power. He had 125° flexion and patellar tracking was normal. There was some retropatellar crepitus but this was completely pain-free. He was delighted with the results and had no complaints in his latest follow-up almost two and a half years since his surgery.

Discussion

In a persistent congenital dislocation of patella, the patella is permanently dislocated on the lateral aspect of the knee and is smaller than normal in size, with a flat joint surface and no patellar ridge. The severity of structural anomalies is mainly owing to its prenatal onset. There is usually a valgus deformity of the knee with external rotation of the tibia with femorotibial rotatory displacement. The quadriceps mechanism is laterally displaced with tethering of the fascia lata and shortening of the quadriceps muscle and contracture of the iliotibial band. The vastus medialis is loose and atrophic with over-distension of the medial retinaculum and laxity of the medial capsule. The patella is small, articulating with the outer aspect of the lateral condyle, with no possibility of medial reduction onto the trochlea. In neglected cases, the superimposed growth changes lead to a more severe deformity. In this clinical scenario, any fracture involving the patella complicates matter even more. The treatment in such cases, in addition to the internal fixation, will have to include surgical procedures to realign the extensor mechanism to achieve the ultimate goal of a stable and functional knee.

Various surgical techniques have been suggested in the literature for treatment of congenital dislocation of the patella. Most of these consist of lateral release of contracted tissues and vastus lateralis and proximal or distal realignment. Although acute fractures have been reported in bipartite patella and that in a patient with Forestier’s disease, none have so far been reported in that of a congenitally dislocated patella. We have described a difficult and unusual case of fracture in a congenitally dislocated patella where treatment of the fracture along with surgical treatment of the congenital dislocation has had an excellent functional outcome.

References