

# Autogenous grafting for an osteochondral fracture of the femoral condyle

## A case report

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A 16-year-old boy with an osteochondral fracture in the lateral femoral condyle was operated on 3 months postinjury with a graft from the non-weight-

bearing area of the same condyle. After 10 years, the knee was painfree and the range of motion was normal.

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A 16-year-old boy fell while running downstairs and received a direct blow on his left patella. During the next 2 months he suffered from a recurrent swelling and locking of the knee. The knee was stable, with a small amount of effusion. Plain radiographs and arthrography were negative. A lateral arthrotomy was done and, when the patella was dislocated medially, a 2 × 1.5 cm defect was found in the articular surface of the lateral femoral condyle. The defect extended down to the subchondral bone and was covered with thin fibrous tissue. It was in contact with the lateral facet of the patella when the knee was between 5°-25° of flexion.

Both menisci were intact and the fractured osteochondral fragment was found in the suprapatellar pouch. To restore the articular surface, an osteochondral graft from the most posterior part of the lateral condyle was transferred. The lateral condyle was exposed after removal of the lateral collateral ligament with a piece of bone. The graft was taken from the most posterior part of the condyle by an osteotome. The lateral collateral ligament was reattached and fixed with a staple. The graft was trimmed to fit the defect and was fixed in its new bed with a K-wire, inserted from the lateral side of the condyle through the base of the graft. Active exercises were started after 2 weeks. The patient was allowed partial weight bearing for 3 months. CT scan 3 months postoperatively revealed a bony union between the graft and the femur and good alignment between the condylar

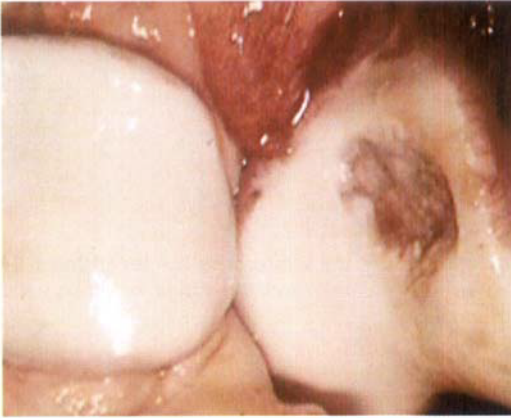
groove and the patella. After 10 years the knee was painless, the range of motion was normal, the patient had no complaints and radiographs revealed an intact joint space.

## Discussion

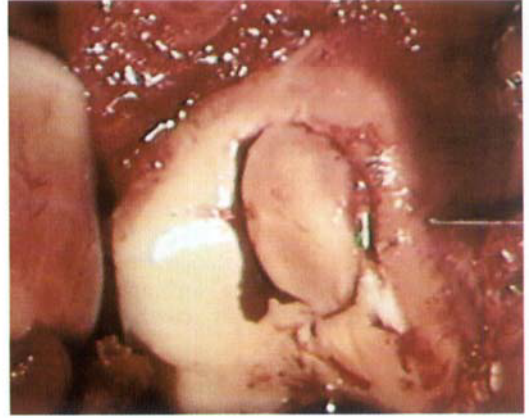
Very few osteochondral fractures have been reported that involve the trochlear groove, a site where damage to the patellar surface may later be found (Lindén 1977). I think that the fracture in this case occurred as a result of shearing forces between the patellar ridge and the trochlear groove, with the knee in slight flexion.

Convery et al. (1972) showed that only a defect smaller than 3 mm can heal with fibrocartilage tissue, while bigger defects can be filled with fibrocartilage after drilling into the subchondral bone. I believe that fibrocartilage tissue is not good enough in a weight-bearing area and, with time, secondary arthrosis will develop. Yamashita et al. (1985) used the medial femoral condyle, while Matsusue et al. (1993) used the lateral wall of the patellar groove as a donor site for autogenic grafts. I, like Muller (1978), believe that this area is not a suitable donor site since it can entail injury to the patellofemoral articulation. The most posterior part of the femoral condyle is a better area, as it may come in contact with the meniscus only in full flexion.

A 16-year-old boy with an osteochondral fracture in the lateral femoral condyle operated on 3 months postinjury.



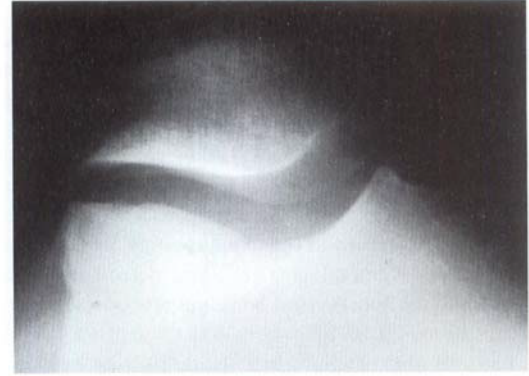
Osteochondral defect at the trochlear groove.



The osteochondral allograft is fixed in place. The K-wire inserted through the lateral side of the condyle penetrates the graft bony base, and avoids cartilage damage.



Weight-bearing radiograph at 10 years.



The skyline view at 10 years shows good incorporation of the graft and no signs of arthrosis.

## References

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