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Case report

Osteochondral lesion of the central talar dome: A case report

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Abstract

A 33-year-old male patient with an osteochondral lesion of the central talar dome is reported. Operative treatment with perpendicular access to this area was impossible without an osteotomy of the tibial plafond. Pie-wedge osteotomy of the tibial plafond with on pedicle capsule-periosteal flap enabled us to treat the lesion by mosaicplasty.

Keywords: Talus; Osteochondral lesion; Osteotomy; Mosaicplasty

1. Introduction

Most osteochondral lesions of the talus are located in the medial or lateral portion of the talar dome, and rarely in the central portion [1–7]. When the lesion is located in the central area, the operative approaches reported in the literature are not practical. The lesion in this area requires osteotomy of the tibial plafond including an extensive portion of the joint surface. The major problem associated with osteotomy including the joint surface is the risk of avascular bone necrosis, which leads to degeneration of the cartilage in the area of osteotomy. We report a case treated by a unique technique to access the lesion without any risk of avascular bone necrosis.

2. Case report

A 33-year-old man fell under the influence of alcohol in April 1998. The next day, he felt pain in his right ankle and was unable to walk. He was referred to us because of an unusual finding in the ankle on plain radiographs.

At the first examination, he complained of pain in the right ankle on weight bearing. Physical examination revealed mild swelling of the ankle and tenderness, which was most marked at the anterior joint. Ankle and hindfoot motion were moderately restricted, but with no crepitus. Plain radiography showed a small area indicating an impacted fracture of the central talar dome. The ankle was immobilized in the neutral position for a month in a below knee cast. Weight bearing was not allowed for 6 weeks. After removal of the cast, a hard brace was applied for 2 months. He returned to work in September 1998.

The patient complained of pain again in May 2000 after a recreational baseball game. Plain radiographs did not show any improvement compared with those at the time of injury. MRI showed an area of high intensity in T1-weighted sequence and a low intensity in T2-weighted sequence, which indicated osteochondritis dissecans in the central talar dome. Plain CT of the ankle showed two cystic subchondral lesions in the central and centromedial talar dome (Fig. 1).

Arthroscopy was performed on June 13th 2000 and showed an area of chondral softening and fibrillation in the central talar dome and moderate synovitis. They were assessed as Berndt and Harty stage II osteochondral lesions with subchondral cysts. Mosaicplasty was performed during the approach described below under general anaesthesia with tourniquet control in June 2000. A 6 cm long longitudinal incision was made on the anterior aspect of the ankle. An antero-distal part of the tibia was cut in a pie-wedge shape 3 cm height, on pedicle flap consisting of its periosteum and the capsule of the ankle (Fig. 2). Cartilage and bone plug complexes were harvested from the lateral femoral condyle in the ipsilateral knee joint and mosaicplasty was performed.

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Fig. 1. Plain CT of the left ankle showed two cystic subchondral lesions in the central (A) and centromedial (B) talar dome.

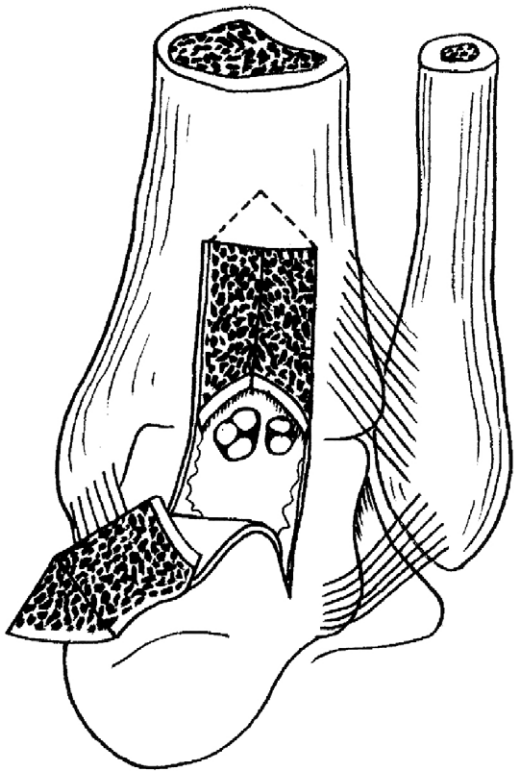

Fig. 2. On pedicle pie-wedge osteotomy of the anterior tibial plafond.

Three plugs 12 mm in depth and 3.5 mm in diameter and two of 10 mm in depth and 2.7 mm in diameter were transplanted (Fig. 3). The tourniquet was released before reduction of the pie-wedged bone. Then the pie-wedge bone was repositioned to the tibial plafond and fixed using two screws.

The operated ankle was immobilized in a below knee cast with the ankle in a neutral position for 4 weeks. After removal of the cast, a patella tendon bearing brace was applied, and supervised physical therapy commenced. Full weight bearing was not allowed for 3 months after the operation. The patient returned to his original work 5 months after the operation. The repositioned pie-wedged bone united rapidly without any evidence of avascular bone necrosis (Fig. 4).

The patient complained of no pain 2 years and 7 months after the operation, but mild restriction of the sagittal motion persisted (range of dorsiflexion and plantarflexion were 15° and 40° in the operated ankle compared with 18° and 45° in the contralateral ankle).

3. Discussion

Arthroscopic drilling is indicated for the early stage (Berndt and Harty [8] stage II) in osteochondral lesion of the talus and works well in patients under 15 years old [9–12]. Open procedures are indicated for advanced lesions (Berndt and Harty stage III and IV) [13,14]. The patient in this case was a 33-year-old man who had double lesions assessed as Berndt and Harty stage II with degenerative cartilage and