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Case Report

Osteochondral autograft transfer for post-traumatic osteochondral defects of the anterolateral surface of the distal tibial plafond

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ABSTRACT

Post-traumatic osteochondral defects of the distal tibial plafond may be a more common cause of pain and osteoarthritis than previously recognized. However, the literature on the surgical treatment of osteochondral defects of the distal tibial plafond is significantly limited. This case report presents the operative technique and clinical outcome of osteochondral autograft transfer for an osteochondral defect on the anterolateral surface of the distal tibial plafond. A case of transfer of osteochondral autograft plugs to repair the anterolateral surface of the distal tibial plafond and prevent progression of forward displacement of the talus in a 25-year-old man who presented with pain in his right ankle, following a history of trauma.

Introduction

The literature on the surgical treatment of osteochondral defects of the distal tibial plafond is very limited. These osteochondral defects may lead to pain and early degenerative changes. Recently, however, there have been several reports of the use of osteochondral autograft transfer (OAT) for the treatment of moderately sized defects in the knee [12,14,15], as well as for defects of the talar dome [10,11]. Good operative results

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were reported in almost all cases. A case of post-traumatic osteochondral defect on the anterolateral surface of the distal tibial plafond and progressive osteoarthritis caused by forward displacement of the talus is presented. The patient was treated by transfer of osteochondral autografts to repair the anterolateral surface of the distal tibial plafond. This case report presents the operative technique and clinical outcome.

Case report

The patient was a healthy 25-year-old man with a one-year history of right ankle pain following trauma.

He had met a car accident while walking. One year earlier, he had undergone open reduction and internal fixation on his right ankle for fracture at another hospital. A tibia diaphysis spiral fracture was fixed by the anterograde intramedullary nail with infra-patellar approach. An ankle malleolar fracture was fixed by the locking plate and cannulated cancellous screws with direct lateral and medial approach. He had finally consulted us because of worsening ankle pain while walking. On physical examination, there was tenderness in the anteromedial joint space of the right ankle. Slight ankle swelling was noted. Dorsiflexion of the right ankle was 10°, similar to that of the left ankle, but plantarflexion was restricted to 38°, compared with 60° on the left, but the ankle instability test was negative.

The first three months, even though we performed intra-articular injections, arthroscopic synovectomy for osteoarthritis, and the fixation implant removal in order to release implant irritation, his ankle pain persisted.

The AOFAS ankle score at that point in time was 50 [1]. Radiographs showed moderate narrowing of the ankle joint and forward displacement of the talus (Fig. 1-A, B). Computed tomography of the right ankle showed an osteochondral defect on the anterolateral surface of the distal tibial plafond (Fig. 2). This was diagnosed as progressive osteoarthritis caused by an osteochondral defect on the anterolateral surface of the distal tibial plafond, and surgical repair of the osteochondral defect was recommended. Three months later, the osteochondral graft was performed on the patient's right ankle. The patient was placed in the supine position under general anesthesia. The lower extremity was prepared and draped in the standard sterile fashion. We inserted the 2.0 mm K-wire in his right calcaneus, then skeletal traction was done in order to open his right ankle joint space if necessary. Next, 10 mL of fluid was injected intra-articularly to distend the ankle. The anterolateral ankle arthroscopy portal was established in the routine fashion, and global

Fig. 1. Radiographs at the initial examination showed an osteophyte in the anterolateral corner of the right plafond and moderate narrowing of the ankle joint. Forward displacement of the talus was seen: (A) anteroposterior view, (B) lateral view.