INTRODUCTION

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Localized articular cartilage defects are a major problem for orthopedic surgeons. Because cartilage has poor ability to heal as a sequence of lack of intrinsic repair capacity, chondral defects do not heal and may increase the risk of early osteoarthritis.[1]

The terms osteochondritis dissecans (OCD), transchondral fracture, osteochondral fracture, and osteochondral defect are used in the literature to describe the separation of a segment of articular cartilage in combination with a varying amount of subchondral bone.

Osteochondral defects are rare joint disorders. Most often, they affect the knee, followed by the elbow and the talus.[2]

Osteochondral fractures of the talus can be a source of continued disability for athletes having sustained twisting injuries to the ankle. Proper treatment of such injuries requires a high degree of suspicion, proper use and interpretation of imaging studies, and treatment tailored to the nature and stage of the lesion. Accurate staging of the injury, using both radiographic and arthroscopic criteria, is needed to determine the most appropriate course of treatment. With the advent of smaller-diameter arthroscopes and small joint instruments, arthroscopic techniques have evolved to the point where open procedures are rarely needed. Arthroscopic treatment of osteochondral fractures of the talus can be difficult, and good results require proper distraction, appropriate instrumentation, and experience with small joint arthroscopy. [3]

Studies have shown that a trial of conservative therapy does not adversely affect surgery performed after conservative therapy has failed. [4]

In the past, articular cartilage lesions have been treated by subchondral bone abrasions or drilling at the site of focal damage with procedures popularized by Pridie and Johnson.[5]

Conventional methods, Pridie's perforations, microfractures or subchondral abrasion (abrasion arthroplasty) lead to imperfect results in around 50% of cases.[6]

In order to overcome the drawbacks inherent in traditional methods, alternative methods have been developed: osteochondral or chondrocyte allografts and autografts.[7]

Good results for osteochondral allografts have been published. However, owing to the risk of transmission of viral diseases and uncertainties surrounding maintenance of the properties of the transplanted tissue, many authors have switched to using autografts.

Grafts using autologous chondrocytes involve two surgical procedures: one to remove a disc of hyaline cartilage, the other to implant the chondrocytes after they have been cultivated.

Autologous periosteal grafts involve removing a section of periosteum. The inner face of the periosteum, which contains the stem cells capable of differentiation into chondrocytes, is turned towards the subchondral bone, which has first been prepared (dechondrified). The defect is filled with organic cement, and then the periosteum, sutured to the periphery of the cartilage. Thus this method is identical with the previous one, except for the fact that cultivated chondrocytes are not used.

More recently, several authors have suggested using not an osteochondral autograft in a single block, but a collection of small osteochondral cylinders inserted side by side, thus making it possible to maintain the radius of curvature of the articular surface, or congruence. This is what is called mosaicoplasty.[8]