HOSPITAL PHYSICIAN®

ORTHOPAEDIC SURGERY BOARD REVIEW MANUAL

Osteochondral Lesions of the Talar Dome

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I. INTRODUCTION

Osteochondral lesions of the talar dome are a relatively common cause of ankle pain and disability, and they are often missed in the routine evaluation following ankle injury. Alexander Munro was the first person to describe osteochondral loose bodies of the ankle joint in 1956.[1] Since that time, terminology used in describing these lesions has included osteochondral fracture, which implies traumatic origin, and osteochondritis dissecans, which generally implies ischemic origin. For the purposes of this review, the term "osteochondral lesion" will be used to describe any acute or chronic injury involving the articular surface of the talar dome.

II. ANATOMY OF THE TALUS

A. The talus has 3 parts: the body, neck, and head.
B. 60% of the talus is covered by articular cartilage.
C. The superior surface of the talar body is wider anteriorly than posteriorly and articulates with the distal surface of the tibia. Otherwise known as the talar dome, the superior surface of the talar body is the most common site for osteochondral lesions in the ankle joint.
D. **Blood supply** (**Figure 1**)
   1. The posterior tibial artery gives rise to the artery of the tarsal canal, and this artery provides the main blood supply to the talar body, supplying one half to two thirds of the body's middle section.
   2. The deltoid branches of the posterior tibial artery supply the medial one third of the talar body.
   3. Branches of the artery of the sinus tarsi supply the lateral one eighth to one quarter of the talar body.

III. ETIOLOGY

A. **Ischemia**
   1. Ischemic necrosis of subchondral bone may lead to separation of an osteochondral fragment.[2]
   2. Environmental factors such as alcohol abuse and steroid use as well as hereditary and endocrine factors may play a role in the development of lesions in the absence of trauma.
   3. Ischemic etiology is thought to be more common in medial talar dome lesions.[3]
B. **Trauma**
   1. Isolated incidents of macrotrauma or cumulative microtrauma are now thought to be responsible for most osteochondral talar dome lesions. In a review of more than 500 osteochondral talar dome lesions, Flick and Gould found that 98% of lateral lesions and 70% of