

HOSPITAL PHYSICIAN®

ORTHOPAEDIC SURGERY BOARD REVIEW MANUAL

PUBLISHING STAFF

PRESIDENT, GROUP PUBLISHER

Bruce M. White

EXECUTIVE EDITOR

Debra Dreger

SENIOR EDITOR

Becky Krumm, ELS

CONTRIBUTING EDITOR

Robert Litchkofski

ASSISTANT EDITOR

Jennifer M. Vander Bush

EDITORIAL ASSISTANTS

Renee Autumn Ray

A.C. Arkes

EXECUTIVE VICE PRESIDENT

Barbara T. White, MBA

PRODUCTION DIRECTOR

Suzanne S. Banish

PRODUCTION ASSOCIATES

Tish Berchtold Klus

Christie Grams

Mary Beth Cunney

ADVERTISING/PROJECT MANAGER

Patricia Payne Castle

NOTE FROM THE PUBLISHER:

This publication has been developed without involvement of or review by the American Board of Orthopaedic Surgery.



Endorsed by the
Association for Hospital
Medical Education

The Association for Hospital Medical Education endorses HOSPITAL PHYSICIAN for the purpose of presenting the latest developments in medical education as they affect residency programs and clinical hospital practice.

Osteochondral Lesions of the Talar Dome

Series Editor:

Robert T. Trousdale, MD

Associate Professor of Orthopaedic Surgery, Mayo Graduate School of Medicine, Consultant, Department of Orthopaedic Surgery, Mayo Clinic, Rochester, MN

Contributing Authors:

Diane L. Dahm, MD

Associate Professor of Orthopaedic Surgery, Mayo Graduate School of Medicine, Consultant, Department of Orthopaedic Surgery, Mayo Clinic, Rochester, MN

James Manzanares, MD

Fellow in Pediatric Orthopaedics, Nemours Children's Clinic, Jacksonville, FL

Table of Contents

Introduction	2
Anatomy of the Talus	2
Etiology	2
Epidemiology	3
Evaluation	3
Classification	6
Treatment Options	7
Recent Advances in Operative Management	10
Summary	10
References	11

Cover Illustration by Marc Galindo

Copyright 2001, Turner White Communications, Inc., 125 Strafford Avenue, Suite 220, Wayne, PA 19087-3391, www.turner-white.com. All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted in any form or by any means, mechanical, electronic, photocopying, recording, or otherwise, without the prior written permission of Turner White Communications, Inc. The editors are solely responsible for selecting content. Although the editors take great care to ensure accuracy, Turner White Communications, Inc., will not be liable for any errors of omission or inaccuracies in this publication. Opinions expressed are those of the authors and do not necessarily reflect those of Turner White Communications, Inc.

HOSPITAL PHYSICIAN®

ORTHOPAEDIC SURGERY BOARD REVIEW MANUAL

Osteochondral Lesions of the Talar Dome

Series Editor:
Robert T. Trousdale, MD

Contributing Authors:
Diane L. Dahm, MD
James Manzanares, MD

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 pro-

vides 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