

# Management of Talar Fractures



Kwasi Y. Kwaadu, DPM

## KEYWORDS

- Avascular necrosis • Malunion • Post-traumatic osteoarthritis • Talar fracture
- Talus

## KEY POINTS

- Talar fractures are life-changing events. As such, their outcomes should realistically be tempered.
- Along with preoperative advanced imaging, the threshold for operative and accurate anatomic reduction should be low.
- Dual incisional approaches and malleolar osteotomies increase visualization to help facilitate accurate and anatomic reduction.
- Avoiding extensive subperiosteal dissection minimizes disruption of the already acutely traumatized tenuous perfusion.
- Although avascular necrosis can prove a devastating sequelae of this injury, it occurs far less frequently than posttraumatic osteoarthritis many times warranting secondary operations.

## INTRODUCTION

The talus has a unique architecture with varying fracture presentation from simple avulsions about the head and neck secondary to inversion ankle sprains, and fractures of the lateral process and posterior tubercles from sudden, unplanned, and sometimes atypical mechanisms and motion. Although these former injuries are at times operative, they have not historically been associated with the sequelae and complications seen with complete fractures of the neck and intra-articular fractures of the wholly articular body/trochlear (**Fig. 1**).<sup>1</sup> These latter injuries have historically proven difficult to manage for even highly trained foot and ankle traumatologists.<sup>1-5</sup> The complex anatomy of the talus contributes to the difficulty in visualization, reduction, and the real estate available for fixation (**Fig. 2**).

Multiple classification systems have been provided in the past but the Hawkins classification system described in 1970 has continued to be relied on to offer

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Department of Surgery, Temple University School of Podiatric Medicine, 148 North 8th Street, Philadelphia, PA 19107, USA

E-mail address: [kwasi.kwaadu@temple.edu](mailto:kwasi.kwaadu@temple.edu)

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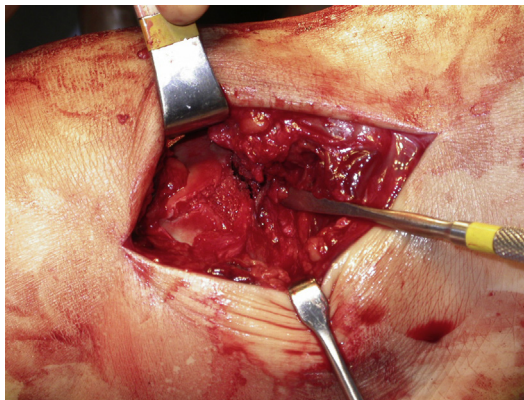
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**Fig. 1.** Severe fracture of the talar trochlear with associated calcaneal fracture. (Courtesy of Justin J. Fleming, DPM, American College of Foot and Ankle Surgeons, Philadelphia, PA.)

a foundational understanding of these injuries, correlating progressive displacement and articular dislocation with prognosis.<sup>5-7</sup> This has led to subsequent research that has further increased the understanding of these injuries, providing more contemporary clinical pictures of associated sequelae.<sup>8</sup> Historical recommendations emphasized early open reduction, correlating this with a reduced incidence of avascular necrosis and collapse as a consequence of the timelier restoration of the surrounding perfusion (**Fig. 3**).<sup>9-14</sup> However, these high-energy injuries many times traumatize the surrounding soft tissues, making early open reduction difficult (**Fig. 4**). Furthermore, Vallier and colleagues<sup>15</sup> demonstrated no clear correlation with operative timing with the incidence of avascular necrosis. Finally, and even in the presence of avascular necrosis, collapse is not uniformly imminent.<sup>9-14,16</sup>

Sneppen and coworkers<sup>17</sup> proposed a classification system for fractures of the body. The classification system is descriptive, but unlike the Hawkins classification, has provided no discrete and clear correlation with prognosis. Unlike fractures of



**Fig. 2.** Intraoperative clinical picture from the medial incisional approach demonstrating limited area for plate fixation. (Courtesy of Justin J. Fleming, DPM, American College of Foot and Ankle Surgeons, Philadelphia, PA.)

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