THE ROLE OF MULTI DETECTOR CT IN ASSESMENT OF CALCANEAL FRACTURES AND ITS VALUE IN DETERMINING MANAGEMENT PLAN

Thesis

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CT	Computed tomography.
L2	Lumber vertebra number 2.
MDCT	Multi detector computed tomography.
T12	Thoracic vertebra number 12.

Introduction

The calcaneus is the largest and the most commonly fractured bone of the tarsal bones. Calcaneal fractures represent only about **2%** of all fractures but **60%** of fractures involving the tarsal bones ***(Stoller et al., 2004)***.

Familiarity with the normal calcaneal anatomy is important for understanding fracture mechanisms and classification schemes. Clinical presentation at the time of evaluation generally includes *(a)* a history of a fall from a height, and *(b)* certain signs that aid the physician in identifying possible calcaneal fractures ***(Badillo et al.,2011).***

Modern calcaneal fracture classification systems rely heavily on computed tomography (CT) because of its three-dimensional approach, rather than on two-dimensional conventional radiography as was used in the past. Use of multidetector CT has allowed the development of classification systems that correlate with management ***(Badillo et al., 2011).***

The Sanders classification system is the most commonly used system for describing intra articular fractures of the calcaneus, which account for the majority of calcaneal fractures. Extra articular fractures are classified according to a tripartite anatomic division of the calcaneal surface.

Treatment can be either surgical or conservative depending on the radiologic classification of the fracture(***Badillo et al., 2011).***

Classification of the intra articular calcaneal fractures has been believed to be difficult because of the complexity and comminution of these fractures and, to some extent, because of the problems with understanding their pathoanatomy ***(Charles et al., 2006)***

The classification of extra articular fractures has been less controversial, perhaps because they have been the subject of fewer studies than have intra articular fractures. Generally, extra articular calcaneal fractures fall into one of three categories depending on whether the involvement of the calcaneus is anterior, middle, or posterior ***(Badillo et al., 2011).***

In 1996, the orthopedic Trauma Association, in cooperation with the International Society for Fracture Repair and as part of their general system of fracture classification, compiled a system for fractures of the calcaneus ***(Chapman et al., 2000)*.**

This system benefits from both plain radiographs and CT scanning. It divides calcaneus fractures into three main types**.** This system is complex and has not been used extensively by most orthopedic surgeons ***(Charles et al., 2006).***

Aim of work

The purpose of this study is to discuss the CT appearance of intra and extra articular calcaneal fractures with special emphasis on their impact on the management of these fractures.