

ORIGINAL ARTICLE

## Ankle fracture controversies: Do the foot and ankle specialists have a different vision?☆



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### KEYWORDS

Ankle fractures;  
Surveys;  
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### Abstract

**Objective:** To analyse the differences in the management of ankle fractures between orthopaedic/trauma surgeons and foot and ankle specialists.

**Material and method:** An e-mail survey was performed asking some of the country's orthopaedic surgeons controversial questions regarding the analysis of 5 clinical cases of different ankle fractures.

**Results:** Seventy-two surgeons responded to the questionnaire (response rate of 24.2%): 37 foot and ankle specialists and 35 non-specialist orthopaedic surgeons. For trimalleolar fracture, 40.5% of the specialists would request a computed tomography scan compared to 14% of the non-specialists ( $p = .01$ ). Ninety-four percent of all the respondents would synthesise the posterior malleolus; 91% of the non-specialists would use an antero-posterior approach, either with a plate or with screws ( $p = .006$ ). No differences were found between groups in the treatment of syndesmotic injuries ( $p > .05$ ). For trans-syndesmotic fracture (Weber B) with signs of medial instability, 54% of the non-specialists would revise the internal lateral ligament compared to only 32% of the specialists ( $p = .06$ ).

**Conclusions:** The foot and ankle specialists ask for more complementary tests to diagnose ankle fractures. In turn, they use a greater diversity of surgical techniques in synthesis of the posterior malleolus (posterior plate) and the medial malleolus (cerclage wires). Finally, they indicated a lower revision rate of the internal lateral ligament.

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**PALABRAS CLAVE**

Fracturas de tobillo;  
Encuestas;  
Diagnóstico;  
Tratamiento

**Controversias en fracturas de tobillo: ¿es diferente la visión del especialista en pie y tobillo?****Resumen**

**Objetivo:** Analizar las diferencias en el manejo de las fracturas de tobillo entre cirujanos ortopédicos/traumatólogos y especialistas en enfermedad de pie y tobillo.

**Material y método:** Se realizó una encuesta vía correo electrónico que planteaba cuestiones controvertidas a propósito del análisis de 5 casos clínicos de diferentes fracturas de tobillo a cirujanos ortopédicos del país.

**Resultados:** Setenta y dos cirujanos respondieron la encuesta (tasa de respuesta del 24,2%): 37 especialistas en pie y tobillo y 35 cirujanos ortopédicos no especialistas. En el caso de la fractura trimaleolar, el 40,5% de los especialistas solicitarían una tomografía computarizada frente al 14% de los no especialistas ( $p=0,01$ ). El 94% de todos los que respondieron sintetizaría el maléolo posterior; el 91% de los no especialistas, con tornillos vía anteroposterior, mientras que el 43% de los especialistas utilizarían la vía posteroanterior, bien con placa o con tornillos ( $p=0,006$ ). No se hallaron diferencias entre grupos en el tratamiento de las lesiones sindesmales ( $p>0,05$ ). En las fracturas transindesmales (B de Weber) con signos de inestabilidad medial, el 54% de los no especialistas revisarían el ligamento lateral interno frente a solo el 32% de los especialistas ( $p=0,06$ ).

**Conclusiones:** Los especialistas en pie y tobillo solicitan más pruebas complementarias para el diagnóstico de las fracturas de tobillo. A su vez, utilizan una mayor diversidad de técnicas quirúrgicas en la síntesis de los maléolos posterior (vía posterior-placas) y medial (cerclajes). Por último, indican una menor tasa de revisión del ligamento lateral interno.

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**Introduction**

Ankle fractures are highly prevalent injuries, considered to be the most frequent intraarticular fractures in a load-bearing joint and comprising 9% of all skeletal fractures.<sup>1</sup> They also present an extensive variability with regards to the type of injury and its treatment.<sup>2</sup> Despite the extreme specialisation of orthopaedic surgery, the frequency of this type of fracture in daily practice leads to several types of professionals participating in its management, from general orthopaedic surgeons to foot and ankle specialists, or trauma specialists. As a result of this and also the diversity of factors which have an impact on the decision-making of each type of lesion, several aspects are currently under discussion. These include diagnoses, surgical options and postoperative protocols to be followed.

Existing literature is not able to establish clinical practice guidelines based on scientific evidence with respect to fractures affecting the posterior tibial malleolus or tibioperoneal syndesmosis.<sup>3,4</sup> Neither are there any established postoperative management aspects regarding ideal non-weight bearing time for this type of injury.<sup>5</sup>

The aim of this study was to analyse the differences in ankle fracture management among orthopaedic/trauma surgeons and foot and ankle specialists.

**Material and method**

A survey was designed for this study through an online platform: [www.surveymonkey.com](http://www.surveymonkey.com). The first part of the questionnaire consisted of 2 basic demographic questions:

(1) if the respondent belonged to a unit specialising in foot and ankle disorders, and (2) how many years of experience the professional respondent had.

In the second part the respondent was asked about which classification or classifications of ankle fractures they were using in their daily practice.

The third part of the survey consisted of 24 items: 18 questions on 5 cases of ankle fractures selected to represent the different patterns of injury likely to be controversial with regards to management, and 6 general questions on the approach used for tibioperoneal syndesmosis injuries.

The cases included plain radiographs of fractures and were presented in the context of a young, active patient with no clinical history of interest.

Case 1 consisted of a trimalleolar fracture with a posterior malleolar fragment involving approximately 40% of the joint surface (Fig. 1). Case 2 presented a Dupuytren type fracture above the syndesmosis (Fig. 2) and case 3 a spiral-type fracture of the peroneal above the syndesmosis with a lesion associated with tibioperoneal syndesmosis, the interosseous membrane and the deltoid ligament, or Maisonneuve type (Fig. 3.). Case 4 presented with a fracture transverse to the syndesmosis of non displaced fibula (Fig. 4). Lastly, case 5 presented with a fracture transverse to the syndesmosis of the displaced fibula with an increase in the medial tibiotalar space (Fig. 5).

An email was sent with the survey link to 300 orthopaedic surgeons in 7 hospital centres in the country and all the members of the Foot and Ankle Surgery Group of Barcelona. Between January and June 2015, 75 physicians responded to the survey, comprising a 25% (75/300) response rate. However, out of the total, 3 professionals sent an incomplete

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