

## Abstract

Although Maisonneuve fracture (MF) is a well-known type of ankle fracture-dislocation, there are a number of misconceptions that can lead to wrong choice of treatment.

The concept of Maisonneuve fracture is also not understood by all authors in the same way and the recent CT studies confirmed that this is much more complex and variable injury.

The dissertation was divided into two main parts: anatomical (experimental) and clinical.

In the experimental part, the aim was to describe the appearance and shape and demonstrate the clinical significance of the crista malleoli lateralis (CML), which is located on the lateral side of the distal fibula and which previous anatomical and clinical studies neglected. Knowledge of this structure is essential to correct placement of syndesmal screws.

The aim of the clinical part was the precise description of the pathoanatomy and associated injuries within the "classic" and less frequent forms of Maisonneuve fracture based on CT examination and intraoperative findings.

Anatomical studies were performed on 352 dry bone specimens of adult fibula. Clinical studies were conducted on a set of 54 adult patients with "classic" MF occurring in the period 2012-2018 and 11 adult patients with "double" MF occurring in the period 2012-2020.

In the anatomical part of the dissertation, the crista malleoli lateralis was thoroughly described. It has been so far only marginally mentioned in the literature. Our study demonstrated the clinical significance of this structure. The CML represents an important landmark for the application of syndesmal screws or plates and it is essential for evaluating the position of the distal fibula in the incisura fibularis tibiae.

The clinical part of the study thoroughly analyzed the position of the fibula in the incisura, the typology of fracture of the proximal fibula and the pathoanatomy of fracture of the posterior and medial malleolus on a set of 54 adult patients with "classic" MF. We have demonstrated the importance of CT examination for the complete diagnosis of the extent of all associated injuries within the Maisonneuve fracture.

We also processed a set of 11 adult patients with a "double" MF. This is the largest published set of patients with this rare injury to date. We pointed out especially the diagnostic caution in the investigation of ankle injuries.