

Abstract

A Maisonneuve fracture (MF) is a fracture dislocation of the ankle caused by external rotational force. In the traditional concept it includes a subcapital fracture of the fibula, an injury to the tibiofibular syndesmosis and to the interosseous membrane, and it is considered as an unstable injury. The experimental (anatomical) goal of the dissertation work was a detailed study of the *incisura fibularis tibiae* (IFT), its maximum depth and its localization relative to the articular surface of the ankle. The second experimental goal was a detailed description of the lateral surface of the distal fibula, where there is a prominent but still nameless edge that gives the distal fibula its typical triangular shape on a transverse section (workingly we called it lateral malleolar crest, LMC). Both of these structures are extremely important in the diagnosis and treatment of ankle fractures. The clinical part of the work included an overview of all the literature devoted to MF and further analysis of our group of patients with MF with a focus on the posterior malleolus (PM) fracture. Anatomical studies were performed on 352 dry bone specimens of adult tibiae and fibulae. The clinical study was conducted on a group of 100 patients with MF in adult patients treated at The Department of Orthopedics, 1st Faculty of Medicine, Charles University, The Central Military Hospital, in the years 2012-2022. In the experimental part of the work, two anatomical structures were described in detail, i.e. IFT and LMC. The deepest point of the IFT was located and related to the assessment of the distal fibula position in the IFT on CT scans. We were the first to describe LMC. Its shape and course are of fundamental importance for operative stabilization of the tibiofibular fork with syndesmal screws and for plate osteosynthesis of external ankle fractures. The analysis of all available studies devoted to MF in the clinical part shows that MF is not perceived the same by all authors (differences in the stability of the fracture and the list of injured structures). CT therefore plays a fundamental role in diagnosis, which must also be performed pre and postoperatively. PM fracture occurs in 74% of MFs in our study. Its importance has so far been underestimated, even though it fundamentally violates the integrity of the IFT and destabilizes the tibiofibular fork.