

# STUDY OF CALCANEONAVICULAR JOINT

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**Objectives.** Calcaneonavicular joint is defined as abnormal coalescence of the calcaneus with the tarsal navicular bone. The normal morphologic relationship of the calcaneus with the navicular bone can be described as a slender gap between the two articulated bone structures. The scientific literature about calcaneonavicular morphology has been based primarily on retrospective findings of association between radiographically or surgically proved calcaneonavicular coalition in particular patients and a previously defined clinical syndrome in those patients. The purpose of the present study was to determine radiographically demonstrated variations in calcaneonavicular morphology.

**Aim.** Variations in calcaneonavicular morphology depicted on the medial oblique view were classified into four groups according to morphologic type, and the prevalence of each type was calculated. We compared the prevalence of each type in male and in female cadavers.

**Materials and methods.** One-way analyses of variance were used to compare mean ages of patients for each type and mean calcaneonavicular gaps for each type.

**Results.** 94 from 105 variations (89.52%) were characterized by a wide calcaneonavicular gap and smooth, rounded, and well-defined calcaneal and navicular cortices (first morphological type). Joint produced by synchondrosis (second morphological type) (6.74%) were characterized by a narrow calcaneonavicular gap, flattening and widening of the calcaneus where it approaches the navicular, and smooth, regular, and well-defined cortical surfaces. Joint produced by syndesmosis (third morphological type) (3.74%) were characterized by a narrow calcaneonavicular gap, flattening and widening of the calcaneus where it approaches the navicular, and rough, irregular, and poorly defined calcaneal and navicular cortices. There were no cadavers with type 4 morphology (synostosis). The combined prevalence of types 2 and 3 was 10.48%.

The numbers of male and female cadavers with all morphological types were approximately equal ( $p=0.876$ ), and there was no statistically significant correlation between any of these three morphologic types and age ( $p=0.334$ ). The calcaneonavicular gap was significantly narrower in types 2 and 3 than in type 1 ( $p=0.01$ ), which was characterized as the normal morphology.

**Conclusions.** Most joints that we studied were characterized by a wide calcaneonavicular gap and smooth, rounded, and well-defined calcaneal and navicular cortices.

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**PROBLEMATYKA STAWU PIĘTOWO-ŁÓDKOWATEGO**

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