

Bifid ribs in ancient human populations: a systematic reassessment

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Bifid ribs (also known as “bifurcated ribs”) are a rare congenital anomaly that accounts for ca. 28% of described rib abnormalities. Their presence in modern populations has been reported in both anatomical and radiological studies, but this anomaly’s antiquity has never been subjected to a systematic assessment, it often being merely mentioned anecdotally.

The present study consists of two parts:

a. a morphological and radiological examination of cases from 3 different sites, each one distant no more than 1.5 km from one another and all of them located around the city of Brześć Kujawski, north-central Poland, in the historical land of Kujawy. The three populations date back to the Neolithic (4600-4000 BCE), the Middle Ages (12th-16th centuries CE), the Modern Era (15th-19th centuries CE). All analyzed skeletal series came from the collections of the Department of Anthropology, University of Łódź and the Museum of Archaeology and Ethnography in Łódź. The possession and the analysis of the samples were in accordance with the legal status of archeological human remains in Poland.

b. a comprehensive reassessment of the published literature based not only on traditional biomedical databases (Scopus, Web of Science, Pubmed, etc.) but also archeological monographs and posters.

The frequency of bifid rib in the studied populations is 0.4% (3/752 individuals). The lesions were found in typical ribs: the fourth left rib of a male from the Neolithic population, the fifth right rib of an individual of unknown sex from the medieval population and two right ribs (the third and the fourth) of a male from the Early Modern series. Their appearance differs from a barely visible dichotomy with poorly marked independent surfaces on sternal end of rib, to a clear division (approx. 3 cm) with asymmetry in the size of each bifurcated part.

Finally, the presentation offers a comprehensive geographical distribution of this anomaly and practical suggestions on how to avoid misinterpreting it in the anthropological record.

Keywords: bifid rib; congenital anomaly; genetics; history; morphology; radiology; anthropology; Poland