

A POSSIBLE CASE OF PRENATAL SCURVY IN A NEWBORN FROM THE EARLY MODERN KOSICE-BELANSKA CEMETERY: A CASE STUDY

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Background: The study presents skeletal remains of a subadult individual exhumed from the Kosice-Belanska cemetery, dated to the 18–20th century, in whom macroscopic changes typical of long-term vitamin C deficiency, known as scurvy, were identified.

Objective: The aim of the study was to identify and document morphological indicators of scurvy in this individual and to contribute to the reconstruction of health status and living conditions of a historical population in eastern Slovakia.

Materials and methods: The age of the subadult skeleton was assessed by using the method of Fazekas and Kosa, while pathological changes were evaluated according to Buikstra, Mann & Hunt, Ortner and Waldron. Metric data were obtained using a digital calliper and a measuring tape. Based on the estimated age of approximately 40 weeks of prenatal development and the burial in a separate grave, the individual was interpreted as a newborn who most likely died shortly after birth.

Results: Subperiosteal new bone formation and abnormal cortical porosity were identified, with these pathological changes being clearly visible in multiple parts of the skeleton, including the skull, long bones, scapulae and ribs. Since vitamin C deficiency disrupts collagen synthesis responsible for vascular integrity, areas where interactions between blood vessels and bone or muscle occur are prone to repeated ruptures of weakened vessels, leading to the formation of subperiosteal new bone. Abnormal cortical porosity, in turn, developed as a result of increased capillary formation in response to repeated microtrauma of weakened vessels in connective tissues.

Conclusion: The results suggest that the observed lesions are consistent with a fully developed stage of scurvy, indicating severe vitamin C deficiency already during prenatal development, when the mother is the sole source of nutrients for the foetus. Although scurvy was historically relatively widespread, its identification in archaeological material, particularly in prenatal and neonatal individuals, remains rare. The combination and distribution of skeletal lesions observed in this individual provide strong support for the diagnosis of prenatal scurvy and highlight the diagnostic value of macroscopic skeletal indicators for identifying maternal nutritional stress in past populations.

Keywords: Scurvy; Vitamin C deficiency; Human skeletal remains; Pathology; Eastern Slovakia.

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