3 - Clinical Anatomy

OC-081 - (23776) - THE UNCLOSED TRANSVERSE FORAMINA IN A SOUTH AFRICAN POPULATION SAMPLE - AN OSTEOLOGICAL STUDY

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The transverse foramina of the cervical spine transmit the vertebral artery, veins, and sympathetic nerves. Variations such as unclosed transverse foramina (UTF) may contribute to vertebral pathologies, with the atlas (C1) being particularly vulnerable. This study investigated the prevalence of UTF in a South African skeletal population and explored associations with demographic factors, including age, biological sex, and population affinity.

A descriptive, quantitative osteological approach was used to analyze 800 individuals (5,600 cervical vertebrae) for UTF. The prevalence of a UTF (unilaterality and bilaterality) was recorded for each cervical vertebra.

UTF was observed in 17.4% of individuals and 2.9% of vertebrae. The highest prevalence occurred at C1 (8.6%), followed by C3, C6, C7, C2, C4, and C5 in this sequential hierarchy of prevalence. Unilateral UTF was more common on the right side (1.2%) than the left (1%), while 0.7% presented bilaterally. Younger individuals (<50 years) exhibited a higher prevalence (1.7%) than those >50 years (1.2%). Males (1.8%) had a greater prevalence than females (1.1%). UTF was more common in individuals of Black population affinity (2.3%) than White (0.6%), with the Sotho group showing the highest prevalence among Black ancestry subgroups. Statistical significance ($p<0.05$) was observed only at C2 and C7 in relation to age, though the effect size was small.

Individuals with UTF may be at increased risk for vertebral artery insufficiency (VBAI) or injury. These findings provide valuable epidemiological insights that may aid healthcare practitioners in assessing risk factors for vertebral pathologies in a South African and African context.

Palavras-chave : Unclosed transverse foramen, South African population, Cervical vertebra Variation