3 - Clinical Anatomy

PO-059 - (23865) - ANATOMICAL EVALUATION OF THE FORAMEN MAGNUM IN SCAPHOCEPHALY WITHIN A SELECT SOUTH AFRICAN POPULATION

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Scaphocephaly is a congenital abnormality characterized by a long and narrow skull shape, typically resulting from premature closure of the sagittal suture. The foramen magnum (FM) serves as a critical passageway for the brainstem, spinal cord and associated neurovasculature. Alterations in the FM are linked to neurological conditions like Chiari I malformation, often seen in cranial deformities such as scaphocephaly. A thorough understanding of these anatomical variations is essential for optimal diagnosis and management. Therefore, this study aimed to evaluate the anatomical configuration of the FM in scaphocephaly patients within a select South African population.

Pre-operative computed tomography scans of 24 patients with scaphocephaly, and 14 controls were utilized. A set of sagittal and transverse diameters, as well as the surface area of the FM, were measured. The FM index (FMI) was calculated and shape visually assessed [Ethics reference number: BREC/00002084/2020].

FM dimensions were found to be reduced in scaphocephaly patients. The sagittal and posterior sagittal diameters, and surface area of the FM were significantly smaller (p = 0.03, p = 0.03 and p = 0.01, respectively) compared to controls. The average FMI in scaphocephaly patients was 82±10; the majority presented with the dolichotrematous type of FM (58.33%). Nine different shapes of the FM were observed in patients with scaphocephaly; the most common was the heart-like shape (29.16%).

This study provides valuable insight into the structural changes in the FM in scaphocephaly, and may aid clinicians in recognizing the potential implications for surgical planning and clinical management of these patients.

Palavras-chave : Foramen magnum, Scaphocephaly