Prevalence of Sacral Dysmorphism Findings in Adult Patients on Abdominopelvic and Pelvic Computed Tomographic Scans at Tibebe Ghion Hospital, Bahirdar, Northwest Ethiopa

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Purpose: Sacral dysmorphism is an anatomic variation that deviates from the normal anatomy of the sacral and lumbosacral junction that causes complications when some surgical procedures are attempted. Percutaneous screw fixation is a standard procedure performed for unstable pelvic ring lesions, but modifications of screw placement are necessary in cases of anatomic variations. Because sacral dysmorphism patterns are very common, preoperative computed tomography (CT) imaging is considered mandatory to identify them and therefore avoid damage to surrounding structures when surgical procedures are attempted. The objective of this study was to determine the proportion of sacral dysmorphism findings in patients 18 years and older on abdominopelvic and pelvic CT scans performed at Tibebe Ghion Specialized Hospital (TGSH) from November 2023 to February 2024.

Methods: The institution-based cross-sectional study design was carried out at the Tibebe Ghion Specialized Hospital. Patients age 18 and older with abdominopelvic or pelvic CT scans were included, and a simple random sampling technique was used. Data collection sheets were used to record demographic information and imaging findings of sacral dysmorphism on 184 CT scans. Data collection was performed by radiology residents to improve its quality. The data was cleaned, stored, checked for completeness, and entered into an SPSS 27 version for analysis. Descriptive statistics and logistic regression were used to generate and summarize frequencies and associations.

Results: The overall prevalence of sacral dysmorphism was 58.2%. The first residual sacral disk and dysmorphic neural foramina revealed the most common findings of sacral dysmorphism. The female sex showed an increased prevalence of tongue-in-groove morphology and dysmorphic neural foramen with statistical significance (P = 0.021 and 0.034 respectively). Younger age was also associated with an increased prevalence of the residual first sacral disk (P = 0.017, Confidence Interval [CI] = 95%).

Conclusion: The prevalence of sacral dysmorphism in this population was high. Careful evaluation of sacral morphology by CT scan is mandatory in pelvic trauma patients as part of preoperative planning, especially if iliosacral screw fixation is planned.