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EMERGING TRENDS
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EMERGING TRENDS IN MEDICAL IMAGING: FROM PATIENTS TO PIXELS SYMPOSIUM, 19 JUNE 2025

ORAL PRESENTATION

ET004

Identification of Gender in Adult Population Using Pelvic CT Morphometry Approach

Nurul Aqilah Murizam, Nurul Dizyana Nor Azman, Mohd Hafizi Mahmud

Centre for Medical Imaging Studies, Faculty of Health Sciences, Universiti Teknologi MARA, Malaysia

Corresponding author: Mohd Hafizi Mahmud

Email: mhafizi@uitm.edu.my

Introduction: Identification of gender is fundamental in forensic science, anthropology and medico-legal investigations. Among various anatomical structures, pelvis is widely recognized for its substantial sexual dimorphism. Anatomically, men and women have different pelvic characteristics of diameter size and pubic angle. Conventional measurement techniques such as calipers may have limitations that lead to lower reliability. This study aims to identify gender characteristics based on Computed Tomography (CT)-based pelvic bone morphometry. **Methods:** A total of 100 adult pelvic CT images (n=50 male, n= 50 female) aged from 18 to 78 years old were retrospectively reviewed from PACS of a health institution. Three morphometry parameters were quantified from each pelvic CT image of both male and female patients including pelvic inlet diameter, left innominate height, and subpubic angle using the volume rendering method. **Results:** Significant changes of morphometry parameters were demonstrated between male and female in pelvic inlet diameter (10.72 ± 0.79 cm vs 12.16 ± 0.78 cm), left innominate height (19.83 ± 0.88 cm vs 18.37 ± 0.94 cm) and subpubic angle (69.06 ± 7.90 vs 91.69 ± 26.10) with $p < 0.001$ for all parameters. **Conclusions:** The results reveal significant variation between males and females based on CT-based pelvic bone morphometry. Pelvic CT imaging is a feasible tool for gender identification in adult population. Gender identification is a crucial process for personal identification; hence this approach could be potentially useful in forensic science, anthropology and medico-legal investigations.

Keywords: adult, gender, morphometry, pelvic CT