

9th International Conference on

SPINE AND SPINAL DISORDER

September 09, 2022 | Webinar

Received date: 20-07-2022 | Accepted date: 22-07-2022 | Published date: 15-09-2022

Estimation of body height from spinal length measurements using Post-mortem computed tomographic images

Tawfiq Y T Zyoud, Saiful Nizam Abdul Rashid, Subapriya Suppiah, Rozi Mahmud, Abubakar Kabeer, Rosliza Abd Manaf, Ezamin Abdul Rahim

Universiti Putra Malaysia, Malaysia

Post-mortem computed tomography (PMCT) provides information that helps in the determination of the cause of death and corpse identification of disaster victims. One of the methods for corpse identification includes assessment of the body stature. There is a lack of post-mortem imaging studies that focus on the anthropometric assessment of corpses. Our aim was to identify the relationship between cadaveric spine length and autopsy length (AL) among and autopsy length (AL) among a Malaysian population and derive a regression formula for the estimation of corpse body height using PMCT. We retrospectively assessed 107 cadavers that had undergone conventional autopsy and PMCT. We made 5 measurements from the PMCT that included cervical length (CL), thoracic length (TL), lumbosacral length (LS), total column length of the spine, excluding the sacrum and coccyx (TCL), and ellipse line measurement of the whole spine, excluding the sacrum and coccyx (EL). We compared these anthropometric PMCT measurements with AL and correlated them using linear regression analysis. The results showed a significant linear relationship existed between TL and LS with AL, which was higher in comparison with the other parameters than the rest of the spine parameters. The linear regression formula derived was: $48.163 + 2.458 (TL) + 2.246 (LS)$. The linear regression formula derived from PMCT spine length parameters particularly thoracic and lumbar spine gave a finer correlation with autopsy body length and can be used for accurate estimation of cadaveric height. To the best of our knowledge, this is the first ever linear regression formula for cadaveric height assessment using only post

mortem CT spine length measurements.

References

1. Michaud K, Genet P, Sabatasso S, Grabherr S. Postmortem imaging as a complementary tool for the investigation of cardiac death. *Forensic Sciences Research*. 2019; 4: 211–22.
2. Zech WD, Näf M, Siegmund F, Jackowski C, Löscher S. Body height estimation from post-mortem CT femoral F1 measurements in a contemporary Swiss population. *Leg. Med. (Tokyo)*. 2016; 19: 61–6.
3. Torimitsu, Suguru, Yohsuke Makino, et al. Stature estimation in Japanese cadavers based on pelvic measurements in three-dimensional multidetector computed tomographic images. *Int. J. Legal Med*. 2015; 129; 633–9

Biography

Tawfiq Zyoud is doing his PhD at the University Putra Malaysia (UPM) his scientific life journey started in 2012 at Palestine Ahliya University, where he got his Bachelor's Degree in Medical Imaging. He organized workshops at the UPM Malaysia and participated as a speaker and poster at several international conferences in 2019 he got the Best Poster Award. He got scientific representative of Palestine in the 4th Annual Radiology Meeting in UAE conference. Moreover, in 2021 from ARID Scientific Platform, he earned an Initiative researcher Badge, an Activist at ARID Scientific Events Badge 2021, and an Innovative researcher Badge. Also, he received the Distinguished Researcher Award of the Year by Asia Awards powered by RULA Awards. His plan for the future, after he finishes his PhD is to apply for a post-doctoral program, and in addition to that, he aspires to be famous researcher, especially in the field of forensic medicine.

E: tawfiq_1994@yahoo.com