H25 Determination of Sex Using Metric Data of Greater Sciatic Notch in Koreans

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The goal of this presentation is to suggest that the greater sciatic notch could be helpful for sex determination in forensic anthropology. The metric data of the greater sciatic notch are highly dimorphic between Korean males and females and a discriminant function analysis was found to classify sex with high accuracy.

This presentation will impact the forensic community by explaining how it is straightforward to measure the width and depth of the greater sciatic notch. Moreover, metric analysis for the determination of sex from the greater sciatic notch was found to be highly accurate. These results are helpful in the determination of sex in Korean skeletal remains by utilizing more objectivity than non-metric traits for the greater sciatic notch.

The hip bone is very helpful in the determination of sex of unknown human remains. In many cases the morphology of the greater sciatic notch (GSN) is used for sex determination through non-metric observation according to five grades. Non-metric observation is good for obtaining an immediate result; however, the result strongly depends on the experience of the observer and it is sometimes inaccurate. Recent study has shown that the non-metric method has the potential for conversion into a metric method, which provides objectivity for forensic anthropological analyses. To this end, the morphology of the GSN was investigated metrically in order to determine sex by numeric standards.

From the human bone collection of Yonsei University College of Medicine, 164 GSNs with known sex and age information at death were measured using digital calipers. GSNs were obtained from 112 male cadavers and the remainder were from females. Width and depth of the GSN were measured and the depth-width index of the GSN was calculated. The angle of the GSN was computed using measurements and a trigonometric function. The accuracy of sex determination was analyzed statistically by discriminant function analysis in SPSS (version 13, IL, USA).

Metric data of the GSN are highly dimorphic between Korean males and females. Width of the GSN in males was narrower than in females. Depth of the GSN in males was longer than in females. The accuracy was 84.6% for the depth-width index of the GSN and 89.5% for the calculated angle of the GSN. The demarking point was 65° for the calculated angle of the GSN and 68 for the depth-width index.

It is straightforward to measure the width and depth of the GSN. Moreover, metric analysis for sex determination from the GSN was found to be highly accurate. These findings are useful in the determination of sex from the GSN of Koreans, and the results provide more objectivity than with non-metric trait methods.

Greater Sciatic Notch, Sex Determination, Korean

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