



Physical Anthropology Section – 2007

H32 Skeletal Markers of Parturition II: Reanalysis of a Modern American Sample

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After attending this presentation, attendees will learn that parity status cannot be inferred with accuracy from the bony pelvis, especially from the dorsal side of the pubis. The research presented here tested markers of parturition against known obstetric histories, and the results indicate that workers should not infer parity status from the *dorsalis pubis*.

This presentation will impact the forensic community and/or humanity by stressing that the inference of parity status from the bony pelvis should not be included as an aspect of the biological profile in forensic case reports.

The William M. Bass Donated Collection curated by the Forensic Anthropology Center at The University of Tennessee was utilized for this research. A previous version of this paper was presented at these meetings (Bethard 2004), and the authors wished to update and increase the dataset with recent female donations. The purpose of this study was to increase the knowledge of the correlation between dorsal pitting and pregnancy for all females of known parity status in the Bass Donated Collection. Female skeletons of known parity status (n=45) were scored for the degree of dorsal pitting of the pubis. Pits on the *dorsalis pubis* were scored as either absent, trace to small, or moderate to large (after Stewart 1970). Pubic bones scored as “absent” were unremarkable with regard to dorsal pitting while “trace to small” indicated the presence of shallow depressions. “Moderate to large” dorsal pits were a minimum of 5mm in diameter and noticeably deep. In addition, 150 paired male pubic bones in the collection were examined for changes described by Stewart (1970), Angel (1969), and other workers with the intent of demonstrating that there are factors other than pregnancy that can cause changes to the *dorsalis pubis*.

A thorough literature review indicates that workers have maintained mainly negative correlations between parturition and morphological markers of the *dorsalis pubis*. Stewart (1970) discusses Angel's (1969) contribution to this issue, and hypothesizes that Angel would be wary of the use of his description of these morphological markers in forensic case reports. Stewart himself notes that, “some women can bear children ... without any scarring” and proposes the use of “extreme care” when analyzing forensic skeletons (1970). Suchey and colleagues (1979) found that age and number of pregnancies were most important when analyzing the degree of dorsal pitting, and they also found 4 males out of a sample of 781 with moderate to large pitting. This indicates that while rare, there are factors that induce morphological changes on the *dorsalis pubis* other than pregnancy. More recently, Cox and Scott (1992) found that there was no relationship between pubic pitting and known parity status.

Non-parametric chi-square analyses were performed on the female sample to test the relationship between parity status/pitting ($P=.328$) and pitting/age ($P=.773$). Such results corroborate previous findings that indicate a weak association between the presence of pitting on the *dorsalis pubis* and pregnancy. Such results also demonstrate that age-related changes of the *dorsalis pubis* do not have a significant effect on the presence or absence of pitting. Moreover, out of 150 paired male pubic bones examined, 4 males (2.67%) had “trace to small” changes on the *dorsalis pubis*, further indicating that the identification of factors other than pregnancy causing such changes could be a direction of future research.

References:

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- 3 Cox M and A Scott. Evaluation of the obstetric significance of some pelvic characters in an 18th century British sample of known parity status. *Am J Phys Anthropol* (89):431-440; 1992.
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Parturition, Forensic Anthropology, Skeletal Biology