OSTEOLOGICAL EVALUATION

Prepared by

Tori D. Randall, Ph.D.
Biological Anthropologist

Product No. KO-178-P

Human Female Pelvis with Pits of Parturition

Bone Clones, Inc.
OSTEOLOGICAL REPRODUCTIONS
9200 Eton Ave. Chatsworth, CA 91311
Phone: **(818) 709-7991** *or* **(800) 914-0091** *(USA only)*
Email: info@boneclones.com Web: www.boneclones.com

Female Pelvis with Pits of Parturition

Product Number: KO-178-P

Specimen Evaluated: Bone Clones® replica

Skeletal Inventory: Right and left innominates, sacrum, coccyx (articulated)

Osteological Observations:
In general, the casting process has preserved sufficient details necessary for evaluation.

Features of Sex:
The features of the pelvis are typical of a female. Determination of sex was made by visually scoring a variety of sexually dimorphic skeletal criteria. Morphological features of the pelvis such as a ventral arc, subpubic concavity, and ischiopubic ramus ridge were all present, which suggests that this is a female (Phenice, 1969). The total pelvis shape is wide and broad, the pelvic outlet is large, and the greater sciatic notch, as well as the subpubic angle, are wide (Buikstra and Ubelaker, 1994; White and Folkens, 2000). All of these traits are consistent with female morphology.

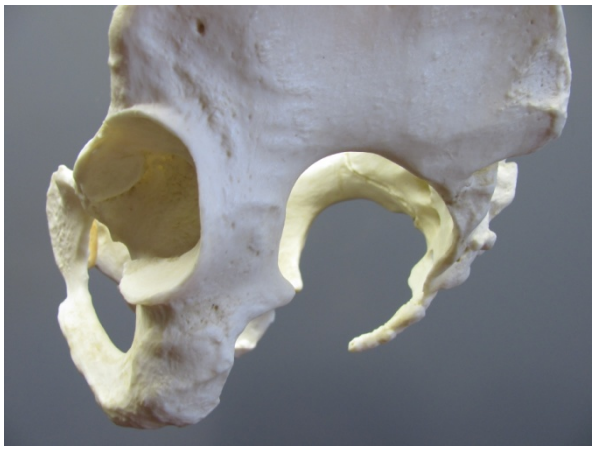

Figure 1: The greater sciatic notch is wide, which is indicative of females.

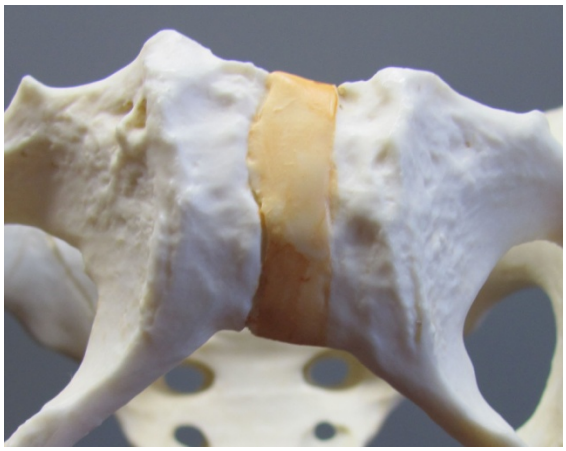

Figure 2: The presence of a ventral arc indicates that this is a female.

Trauma and Pathology:

There is no evidence of trauma. There are grooves known as "parturition pits" on the dorsal surface of the pubic bones. Historically, the presence of this dorsal pubic pitting was thought to be evidence of pregnancy or parturition, resulting from the pulling and stretching of the ligaments connecting the pubic bones during childbirth (Kelley, 1979). However, these parturition pits have been found on the pubic bones of women who never had children (Suchey, et al., 1979). Additionally, these parturition pits are frequently absent in women who have given birth. This suggests that this type of skeletal remodeling is not exclusively connected to obstetrical events (Ubelaker and de la Paz, 2012).

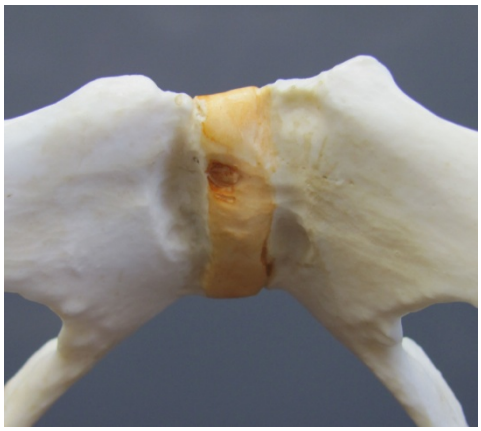

Figure 3: Dorsal pubic pitting.

SUMMARY:

1. Female pelvis.

Educational Resources:

1. This is an excellent example of an adult female pelvis.

2. All of the developmental skeletal changes are complete, which makes this a good candidate for discussing morphological traits in adults.

3. The parturition pits are very pronounced, and very easy to see for introductory students of osteology. Their presence may provide a good opportunity to discuss how methods of evaluation change over time. That is, parturition pits were once thought to be evidence of pregnancy or childbirth; however, current research no longer supports that conclusion.

References:

Buikstra JE, Ubelaker DH. 1994. Standards for data collection from human skeletal remains: *Proceedings of a seminar at the Field Museum of Natural History*. Fayetteville: Arkansas Archeological Survey Press.

Kelley MA. 1979. Parturition and pelvic changes. *American Journal of Physical Anthropology 51*:541-545.

Phenice TW. 1969. A newly developed visual method of sexing the os pubis. *American Journal of Physical Anthropology 30*:297-302.

Suchey JM, Wiseley DV, Green RF, Noguchi TT. 1979. Analysis of dorsal pitting in the *Os pubis* in an extensive sample of modern American females. *American Journal of Physical Anthropology 51*:517-539.

Ubelaker DH, de la Paz JS. 2012. Skeletal indicators of pregnancy and parturition: A historical review. *Journal of Forensic Sciences 57*:866-872.

White TD, Folkens PA. 2000. *Human osteology*. San Diego: Academic Press, Inc.

Disclaimers:

This report is meant only as a teaching tool for introductory level students of the anatomical, anthropology, or forensic sciences who may be using this specimen to learn about human osteology. Evaluation of skeletal material is best done with original specimens. My evaluation was based solely upon studies of a Bone Clones® replica. My opinions are based solely upon the material presented to me. This is somewhat artificial as in real forensic or archaeological investigations, additional studies would be undertaken prior to the formulation of diagnoses and the production of a report. These studies might include plain film radiography, computed tomography (CT) studies, histology, etc. My opinions regarding sex are based only upon non-metric analyses.