

Tricuspid Premolars from Chavez Pass, Arizona

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Three tricuspid premolars were found during dental trait scoring of a skeletal population from Chavez Pass, an archaeological site located in northern Arizona, approximately 30 miles south of present-day Winslow. The site had been severely disturbed by pothunters, creating a collection of scattered and disassociated bones. Very few discrete individuals were present. Using the Arizona State University Dental Anthropology System (Turner et al. 1991) to score the dental traits of the population, the authors made the following observations:

The first example of a tricuspid premolar, 81/ChP/76N/114E/B, is a maxillary left first premolar from an adult individual of indeterminate sex, approximately 18-25 years old (Fig. 1). The maxillary right first premolar from the same individual is bicuspid. The second example, 81/ChP/50N/160E, is a maxillary left first premolar from an adult male individual, approximately 20-30 years old. The antimere, the maxillary right first premolar, is the normal bicuspid form. The third example, Specimen #6106, is a maxillary right first premolar from an adult male individual, approximately 20-30 years old. The antimere, the maxillary left first premolar, is missing postmortem. The second premolars of these individuals, where present, are the normal bicuspid condition.

All three tricuspid premolars display two distinct cusps on the lingual side of the crown. The lingual cusps are approximately one-half the size of the buccal cusps. Specimens 81/ChP/76N/114E/B and #6106 are slightly worn on their occlusal surfaces, scoring 0-1 and 1, respectively, on the ASU system. Wear is greatest on the buccal cusp in both individuals.

The occlusal surface of 81/ChP/50N/160E is worn to a greater degree than that of the other two examples, having a score of 2 on the ASU system. The mesiolingual cusp is slightly larger than the distolingual cusp. Wear is greatest on the buccal cusp with dentin exposed, although both lingual cusps are also worn with spots of dentin exposed. The dentin exposure on the buccal cusp is triangular in shape.

On Specimen #6106 the mesiolingual cusp originates from a distinct root radical, which is fused to a root radical at the base of the buccal cusp, forming a single root. The distolingual cusp originates from the same root as the buccal cusp. In addition, the root socket of the antimere (maxillary left first premolar) is similar in form, suggesting that the maxillary left first premolar may also have been tricuspid.

Prior to this study, three individuals were known to exhibit tricuspid premolars (Turner, personal communication). Turner et al. (1991:17-18) state that tricuspid premolars are extremely rare (1/8000 teeth, or 0.0125%). The three individuals from Chavez Pass have doubled the known sample to six. The authors would appreciate communication from other Dental Anthropology Association members concerning other examples of tricuspid premolars.

REFERENCE

Turner CG II, Nichol CR, and Scott GR (1991) Scoring procedures for key morphological traits of the permanent dentition: The Arizona State University Dental Anthropology System. In MA Kelley and CS Larsen (eds.): *Advances in Dental Anthropology*. New York: Wiley-Liss, pp. 13-31.