F30 Methods to Identify Various Mammalian Bite Marks

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This presentation will impact the forensic community and/or humanity by presenting data illustrating intercanine widths, and unusual size and shape of the various animal arches. This should be helpful to investigators and medical examiners as they inspect wounds on the deceased.

The recognition of bite marks on the skin of a victim can be a challenge to the crime scene investigator. It may appear as a diffuse bruise, an abrasion, contusion, laceration or avulsive, where tissue is actually bitten off of the victim. There may be drag marks, double bite marks, whole arch, half arches, or separate and distinct individual teeth marks. Bite marks change appearance within hours or days. Investigators should be suspicious of any bruise or marks on the body, which may have the remote appearance resembling teeth marks.

The first question that needs to be asked is: Is this a bite mark? An “ideal” bite mark is a circular or ovoid patterned injury with two opposing U-shaped arches. There may be individual variation that simulates biting surfaces. Assuming that the marks appear as probable bite marks, the next question is: Was this mark caused by a human or some other animal? Is the shape and size of the arch form consistent with a human arch form? Or is it unusual in form or size? Are there deep puncture wounds that could indicate an animal’s larger canines? What do animal bites really look like?

The rest of this paper will try to shed some light on what various mammalian teeth look like, the relative size and shape of their arch forms, the extraordinary length of the canine teeth and some general guidelines to assist in determining if the marks were caused by animals or another human.

The methods and materials used included examining over a dozen mammalian skulls and a similar number of adult human skulls. The arch width from canine to canine was measured on each species, using dividers and an accurate millimeter ruler. Color photographs were taken of the skull in various positions and of the individual upper and lower arches. One additional step was taken: an impression was taken of the arches with highly accurate dental polyvinyl siloxane, to give an approximate visual appearance of how a typical static bite wound might appear. The animals chosen included: house cats, wildcat, mountain lion (puma), tiger, various dogs, fox, coyote, wolf, brown bear, others, and of course, man.

Bite Marks, Animal Bites, Intercanine Widths

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