



F41 Pink Teeth: Postmortem Posture and Microscopy

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The goal of this presentation is to demonstrate the effects of postmortem posture on the creation of the phenomenon of pink teeth.

Pink teeth have long intrigued odontologists, pathologists, and anthropologists. From the first documentation, pink teeth have been viewed with curiosity, thought to be a clear-cut sign of violent death. While these researchers have studied the histological alteration in dentine, the perimortem and postmortem behavior(s) responsible for producing the phenomenon is idiopathic.

Perimortem variables linked to pink teeth production include head trauma, strangulation, drowning, etc., where some measure of intracranial pressure forces the pulpal ingredients, i.e., haemoglobin and other red blood cell derivatives, into the dentinal tubules. However, current research demonstrates this may not be the case. Rather, these teeth simply represent an artifact of the decomposition process and have little correlation with a cause or manner of death.

Postmortem variables to consider include surface or buried body, temperature, moisture/humidity, and body posture. This research assesses body positioning and the requisite microscopy to help discern etiology.

This study examined 12 recently deceased bodies donated to The University of Tennessee's Anthropological Research Facility to demonstrate the effects of posture on pink teeth formation. Each body was situated face down on a 30-45 degree angle with the head in a dependent position. Gravitational lividity (blood pooling) witnessed in dependent soft tissue after death are a time sensitive, though reliable means of understanding postmortem body positioning. The phenomena could not be simulated 48 hours after death. Like soft tissue lividity, these results have implications for body placement/movement for several days after death.

Microscopy is the obvious investigative tool in understanding dentine change in pink teeth. For this study to be comparative, discolored teeth were prepared using standard petrographic methods and examined using light and scanning electron microscopy. Histologically, discoloration is dominant in the coronal dentine with diminishing color nearing the apex. Van Wyk (1987, 1988) noted that coronal pulp is more discolored due to the increased vascularization in that region of the tooth. Enamel and cementum, being more highly mineralized and virtually non-porous, were resistant to any permeation of vascular contents.

The results of this study and histological examination illuminate the causative factors of the creation of pink teeth on both the macro and microscopic levels. The creation of pink teeth in an experimental setting fully demonstrates the correlation between this postmortem phenomenon and the effects of body positioning. While pink teeth may not be a sign of violent death, they provide telling information concerning the process of decomposition and positioning.

Van Wyk, CW

Pink teeth of the dead: 1. A clinical and histological description. *J Forensic Odontostomatology*. Dec;5(2):41-50

Postmortem pink teeth: in vitro production. *J Oral Pathology* Nov;17(9-10):568-72

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