F17 A Positioning Device to Aid the Odontologist in a Morgue Setting

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The goal of this presentation is to show the forensic odontologist that the use of a positioning device while performing a dental autopsy can make the task easier, faster, and safer as well as improve the quality of the postmortem records.

The presentation will impact the forensic science community by illustrating the benefit of the application of a new "hands free" positioning device. The device aids the forensic odontologist, especially the solo investigator, by providing a helping hand to lessen the ardent tasks of radiography, photography, and visual recording of dental records in a morgue setting.

Dental autopsies are accomplished in many facets due to the nature of circumstances: (1) the state of the remains, (fragmented, skeletonized or intact); (2) the range of the postmortem records (those deemed necessary to be collected); and, (3) the objective or limits set by the Medical Examiner/Coroner (ME/C) directing the case. The compliment of available help in a morgue setting also varies greatly. Morgue staff may or may not be a resource. Depending on the manpower or time of day when the forensic odontologist chooses to do the examination, morgue staff or auxiliary staff of the investigating dentist may not be readily available. This lessens the ease of one's record gathering. The practice of dental autopsy is hands on and the use of a versatile, near infinitely posturable positioning device could prove useful. The following paragraphs provide several examples for its intended use.

This positioning device can provide stable, "hands free" assistance, acting as a clip to hold an ABFO #2 rule; held on its proper plane and parallel orientation to a photographed specimen. The device can function as a clamp to hold a UV light source for constant illumination of dental restorations for easier dental inspection and charting of the subject.

The task of postmortem radiography is often difficult to accomplish alone. The supine position of a subject on a gurney and the inability of the subject to facilitate the odontologist are contrary to radiography in a viable dental setting. Exposing the jaws through tissue manipulation, tissue displacement or tissue release allows the operator access to place a dental film or digital sensor; however, tissue rebound, tissue resistance, or lack of supporting structure hampers stability of the imaging medium. Proper angulations for good radiologic results are difficult. Hence, for fixed specimens, the positioning device can hold a dental film packet or digital sensor in a position comparable to a holding device used in the living. This eliminates the out stretched hand of an auxiliary or the operator; the positioning device holds the film or digital sensor with resistance to tissue rebound and maintains stabile angulations during the exposure. Whether using a standard fixed mount or portable X-ray generating source, the operator or auxiliary is not involved with the path of the ionizing radiation.

Jaw removal, whether partial or complete, or fragmented jaws yields specimens in a spatial relationship different from the normal. For excised or fragmented specimens this positioning device is able to suspend or orientate oral structures in a more suitable position to offer better radiologic results. Suspending a specimen, raising it off a hard surface, can give way to better film or digital sensor positioning and can give room to manipulate an X-ray head for better angulations prior

exposure. A better postmortem radiograph leads to a better antemortem/postmortem comparison.

Also, with minor variations, this positioning device can be set on a jig and used to suspend simultaneously both excised upper and or lower jaws in their proper planar orientations for orthopantograph imaging. Lastly, this device can be formed into a "skull cradle" and placed on the same jig for imaging of a complete skull with its associated maxilla and mandible. This positioning device with its articulating segments can replicate the upper portions of the spine for very good orthopantograph positioning, i.e., the Frankfort plane, which could be helpful in identifications as well as research endeavors of the skull.

Positioning Device, Hands Free, Odontology

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