F36 Objective Bite Mark Analysis Using an Electronic Occlusal Diagnostic System: Part II

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The goal of this presentation is to present initial research into the use of the T-Scan® Occlusal Diagnostic System to objectively identify the person or persons responsible for inflicting bite marks on their victim while minimizing potential subjective error in the process.

This presentation is a follow-up of last year's introduction of the technology and hypothesis as to its clinical significance in bite mark analysis.

In vitro studies used a model of a human arm and study models of dentitions mounted on a device to mimic the human jaw. The T-Scan® sensor was applied to the curved surface of the arm to register the forces that occurred over time. Two-dimensional and three-dimensional computer generated charts and graphs registered the patterns of forces. Articulating paper was used to register the areas of contact on the model arm. Comparison of the computer generated bite force charts and graphs with photographs of the areas of ink registration on the model arm where compared for clinical significance.

Initial in vivo studies utilized self-inflicted light pressure bite marks on the volunteers fore arms. Using the same techniques as the in vitro study, the computer generated charts and graphs were compared to both articulator paper registration on the skin and actual photographs of the resulting bruising for clinical significance.

The next step in the study involves the use of the technology on live laboratory animals and application of the technique in actual ongoing criminal cases.

Bite Mark, Identification, Computer Analysis

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