F23   Visual Enhancement of Conventional Radiographs Using MICS

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The goal of this presentation is to present a new software application which will enable the forensic community to increase information available from conventional radiographs.

This software dramatically increases the availability of information which can be obtained from conventional radiographs. Forensic dental identifications can be both facilitated and validated. Clinically, the extent of both dental and osseous pathology can be determined using conventional radiographs and efficacy of treatment evaluated.

Conventional radiographs are currently interpreted by comparison of contrasting grayscale values. Two hundred fifty-six grayscale values exist. The human eye is capable of perceiving approximately 25 to 32 of these values. This means that when a radiograph is viewed by the unaided human eye, approximately 12% of available information is processed and approximately eighty-eight percent of available information is lost.

Measurement of Internal Consistencies Software (MICS) is a unique solution to this human limitation. A 2dimensional radiograph is scanned into the MICS 2.0 software program. Each pixel is assigned one of the 256 grayscale values and displayed as one of 256 elevation values. This results in the conversion of a 2dimensional radiograph into a 3-dimensional image representing all 256 grayscale values.

MICS is a robust program which allows the investigator to select a region of interest and observe the minutiae of that region in detail while manipulating the image in the x-axis, y-axis and z-axis. A history is generated from each input for documentation purposes. Side by side viewing is available and useful for comparing ante-mortem to postmortem radiographs for forensic identification purposes or comparing pre-treatment to post-treatment radiographs for clinical purposes.

Forensic Software, Conventional Radiographs, Clinical and Forensic Application