



Odontology Section - 2016

G32 Dental Identification Challenges Using World War II Military Dental Records: Tarawa, 2015

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After attending this presentation, attendees will be better informed regarding the identification of recently recovered United States Marine Corps and Navy personnel who died during the World War II Battle of Tarawa.

This presentation will impact the forensic science community by illustrating that forensic odontologists can assist in the identification of skeletal remains from a different time period, when the only available antemortem dental information consists of dental records and charts without dental radiographs.

The Battle of Tarawa occurred in the Pacific Theater of World War II from November 20 to November 23, 1943. It took place at the Tarawa Atoll in the Gilbert Islands. Nearly 6,400 Japanese, Koreans, and Americans died in the fighting, the majority on the island of Betio. The remains of 35 individuals were recovered from a previously undiscovered post-battle cemetery on Betio Island, Tarawa Atoll, in June 2015. Anthropological examination results indicated that they were males of European or mixed-European ancestry, and the remains were associated with many uniform and equipment items consistent with United States military personnel.

Antemortem military dental records were examined for 315 unrecovered service personnel presumed to have died during the battle. The dental remains were examined, photographed, and radiographed. Dental coding computer software was employed to aid in postmortem and antemortem data comparison. Dental age estimation techniques were applied to the remains. The dental remains were compared to OdontoSearch databases to establish population incidence of dental patterns for the deceased. At time of writing, 17 positive identifications have been made from odontological comparisons, 6 comparisons are classified as "probable," 6 are classified as "not-excluded," and 1 individual had no associated oral, facial, or dental remains. Additional antemortem dental records are reportedly available and forthcoming. Comparisons of those new records with current databases may yield additional results.

The comparison of postmortem evidence with only antemortem records is not a common practice in forensic odontology; however, in this case, several factors combine to allow a high degree of confidence that dental identification can be achieved within a limited population. The four factors include: (1) comprehensive and detailed written and graphical antemortem military dental records; (2) the quality of the excavation, recovery, and processing of the remains; (3) good preservation of the skeletal and dental remains; (3) the relative distinctiveness of certain individual dental patterns; and, (4) the application of multiple supporting techniques.

Dental Identification, World War II, Forensic Odontology