

November 14, 1997

INVESTIGATIVE REPORT #24

**TO:** RALPH J. RAY, JR.  
Chief Assistant State Attorney

**FROM:** PHILIP J. MUNDY  
Investigator

**SUBJ:** Osteological Examination of victim's remains and suspect weapons

**RE:** Homicide Investigation of Adam Walsh

**ENCL:** (1) Report from Anthony B. Falsetti, Ph.D, Univeristy of Florida  
(2) Report from Steven A. Symes, Ph.D, D.A.B.F.A., The University of Tennessee

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Four weapons held in evidence in this case and the victim's remains were submitted to Dr. Falsetti for re-examination for any possible tool mark identification. The report refers to these weapons as A,B,C, and D. Det. Smith advises that the weapons submitted were three machetes which are A, B, and D. Item C is the bayonet that was recovered from Otis Toole's sister, Vinette SYPHERS.

When reviewing the enclosed reports it was noted that the machete that had been recovered from Spencer BENNETT had not been submitted. Upon consulting with Det. SMITH he advised that the examiners had informed him that this item had been examined by the Metro Dade Crime Lab and there would be no advantage to re-examining it at this time.

The enclosed reports seem to provide much more detail regarding the injuries that were sustained by the victim. This information may prove useful at some future date. However, the bottom line is that none of the weapons submitted match the marks on the victim's remains sufficient for an identification.

INV. PHILIP J. MUNDY

cc: Det. John Kerns, Hollywood P.D. ✓

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**ENCLOSURE  
ONE**



## REPORT OF OSTEOLOGICAL EXAMINATION

**ID. LAB CASE NUMBER:** 1F97

**ME CASE NUMBER:** 81-1187, M.E. District 17

**DATE AND MODE OF RECEIPT OF REMAINS:** The human skeletal material, consisting of a cranium plus mandible and 2 cervical vertebrae (C-1, and C-2) of a juvenile, were hand-carried to this laboratory by Detective Mark Smith, Hollywood Florida Police Department on 31 January 1997. The remains had previously been identified, via dental comparison, as representing Adam Walsh, age six (6) years. Additionally, one box containing four (4) long-bladed instruments was also received via Detective Smith.

Detective Smith had requested that a complete examination and documentation of all suspected trauma be completed. Additionally, he has requested that a comparison between the trauma to the remains with the four long-bladed instruments be carried out in order to determine if any one of these suspected instruments could have inflicted the trauma present on the skeleton. For this purpose, Dr. Steven Symes, an expert in cut-mark and tool analysis, from the Regional Forensic Science Center of the University of Tennessee - Memphis was called in for consultation. Dr. Symes' report will be appended to this copy.

**CONDITION OF REMAINS:** In general, the remains were in good condition. The skull and cervical vertebrae were clean, and devoid of any soft tissue or odor. Although no documentation was available at this time, it is clear that the remains had been purposefully cleaned.

**NUMBER OF INDIVIDUALS:** The remains represent one individual.

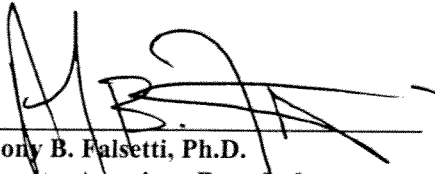
**ANTEMORTEM TRAUMA OR DISEASE:** The lower left deciduous molar presents a dental restoration on the buccal (cheek) aspect.

**PERIMORTEM TRAUMA OR DISEASE:** Several suspected cut-marks are present on the cranium, mandible, and cervical vertebrae. Each suspected cut-mark was photographed using 35 mm film technology. For purposes of comparison to the suspected weapon(s), each instrument was photographed and the cutting-edge molded with an epoxy-like resin. In addition, certain suspected cut-mark on the cranium and mandible were also molded. Results of these comparisons will be enumerated in Dr. Symes' appended report.

**POSTMORTEM DAMAGE:** The inferior nasal concha are separated from their articular surfaces (the maxilla and palatine bones). These very fragile bones are easily damaged and this most likely occurred during postmortem maceration at the District 17 Medical Examiner's Office. Neither Detective Smith, nor any person currently with the District 17 Medical Examiner's Office, could confirm whether any chemical or mechanical treatment was applied during the maceration of soft tissue from these remains.

**SUMMARY OF CONCLUSIONS:** These remains present a biological profile consistent with Adam Walsh, a six (6) year-old, white male. Numerous suspected cut-marks are present on the cranium, mandible, and cervical vertebrae. These marks do not appear to be caused by natural taphonomic forces, and are consistent with several blows to the head and face by a person or persons with malicious intent.

**SUMMARY OF REPORT ATTACHMENTS:** Please see attached report documenting and describing suspected cut-marks, and weapon comparisons.



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**Anthony B. Falsetti, Ph.D.**  
**Diplomate, American Board of**  
**Forensic Anthropology**  
**Director & Assistant Professor**  
**Dated: 22 September, 1997**

**REPORT SUBMITTED TO:**  
**Detective Mark Smith**  
**Hollywood Police Department**  
**Homicide Division**  
**City of Hollywood, Florida**  
**3250 Hollywood Boulevard**  
**Hollywood, FL 33021-6967**

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**ENCLOSURE  
TWO**



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**TO:** Anthony B. Falsetti, Ph.D., D. A.B.F.A.  
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**FROM:** Steven A. Symes, Ph.D., D. A.B.F.A.

**RE:** Examination of remains and suspect weapons of Adam Walsh, W/M/6 years. Case No. FA97-010 (Falsetti case No. 1F97)

**DATE:** September 9, 1997

**Introduction:**

On January 23, 1997, I received a call from Dr. Tony Falsetti concerning the Adam Walsh case. He stated that Detective Mark Smith, of the Hollywood Florida Police Department, had requested that a re-examination of the evidence be performed before the case is discontinued. Dr. Falsetti requested my presence on January 31, 1997, for the examination of the sharp trauma, while he and his graduate students did the conventional anthropological analysis.

My analysis consisted of a gross examination of bones and 4 suspect weapons. Impressions were made of some of the defects and the weapons, then the impressions were transported to Memphis for casting. The resulting descriptions are from the gross examination of the bones and microscopic examination of casts.

## **Description of Bone Defects:**

### Right Mandible

- There are a minimum of 3 sharp chops to the right external mandible in the area of the gonial angle (posterior jaw).
- The three chops are in close proximity, with similar orientation-inferior/posterior to superior/anterior (Figure 1).
- The cut on the maxilla that chips the 1st molar and cuts the alveolus are likely related to one of these cuts.
- The posterior chop terminates in a point or edge with associated fractures. This chop mark is likely oblique to the outer surface of the bone.
- The middle cut terminates into an impression or indentation where the bone essentially fractured under the weight of a narrow edged blow. This could possibly be a hilt mark or simply bone compromise under the impact of a large dull blade.

### Left Mandible (incomplete)

- There is one chop evident to the gonial angle, similar to right mandible (Figure 2).
- The inferior zygomatic (cheek bone) cut mark is probably related to the cut to the gonial angle.
- A fracture separating the right and left mandible occurs at the level of the left lateral incisor and canine. This fracture shows tension posteriorly and compression anteriorly. the fracture is typical in description and location to insults created by severe blows to the external jaw.

### Base of Skull

- There are two major areas of trauma.
- Wound 1 is on the right side of the occipital squamous, posterior to the foramen magnum, and has a round plug of bone removed (Figure 3A). Wound 1 represents a sharp object skimming through very thin bone, leaving a round defect.
- Striae from wound 1 suggests a chop mark oriented posterior to anterior.
- Wound 2 is similar in location to wound 1, but it extends to the left foramen magnum.
- Wound 2 striae suggests a wound orientation posterior to anterior, and left to right.
- Wounds 1 and 2 represent two separate chop marks with similar orientations (Figure 3B).

### First Cervical Vertebra (C1)

- The superior view exhibits small islands of bone (occipital condyles) still adhering to the articular facets of C1. This may represent perimortem- or postmortem forced separation of the first cervical from the base of the skull.
- The bony neural arch immediately posterior to the articular facets is fractured on each side with a third fracture occurring anterior to the right articular facet. The anterior and left posterior fracture may be the result of sharp trauma.
- Side view examination of the area between the two right articular facets reveals at least 2 cut marks in a horizontal orientation. There are associated fractures.

- The inferior view of C-1 reveals a deep cut mark penetrating immediately posterior to the left inferior articular facet. This deep cut mark terminates into a superficial cut mark and fracture in the same area. These cut marks may also be oriented parallel to the spine.
- The posterior aspect of the posterior neural arch of C1 has a shaved defect, demonstrating sharp trauma that is oriented parallel to the spine rather than transversely.

#### Second Cervical Vertebra (C2)

- Examination of C2 reveals cut marks and probably fractures separating the body from the posterior neural arch at the lamina.
- There is a shaved area at the inferior surface of the cervical body.
- A minimum of three horizontal cut marks are visible on the internal dens and the body.

#### Third Cervical Vertebra (C3)

There was likely a small fragment of the articular area C3 represented. This area was probably shaved by a sharp instrument and is probably related to cuts to C2.

#### **Suspect Weapon Comparisons:**

Mark Smith, of the Hollywood Florida Police Department, initially produced 4 suspect weapons. These were given arbitrary identifiers A, B, C, D. A and B were not considered likely suspect weapons, so all efforts were concentrated on weapons C, a bayonet with a blade and grip 50 cm long, and D, a machete with a 74 cm long blade and handle, made in Guatemala.

These weapons were photographed by graduate student Michael Warren, and test cuts were made in "dip Pack" and silicone of the distal ends of each weapon. These impressions were compared with striae from the 2 chop marks in the occipital area of the skull. While this type of comparison is not definitive in ruling out a suspect weapon, it could potentially detect if there were similarities in striae of bone and the ends of these blades. At this time, no similar patterns are evident between bone and suspect weapons.

#### **Conclusion:**

Cut marks in bone listed above appear to substantiate the original medical examiner descriptions (Cox 1981; Wright 1981)

Extensive cutting and chopping wounds are observed posteriorly from ear-to-ear with at least two parallel wounds being separated by a 1.5 cm loose strip of skin and subcutaneous fat.

Cutting wounds also extend on the left side below the ear. . . [and] extends below the right ear to within 2.3 cm to the corner of the mouth

. . . Cutting wounds exposing one of the cervical vertebra, the body of which appears to be transversely sectioned.



Figure 1. Right posterior mandible of FA97-010 with 3 tool mark defects and associated fractures indicated.

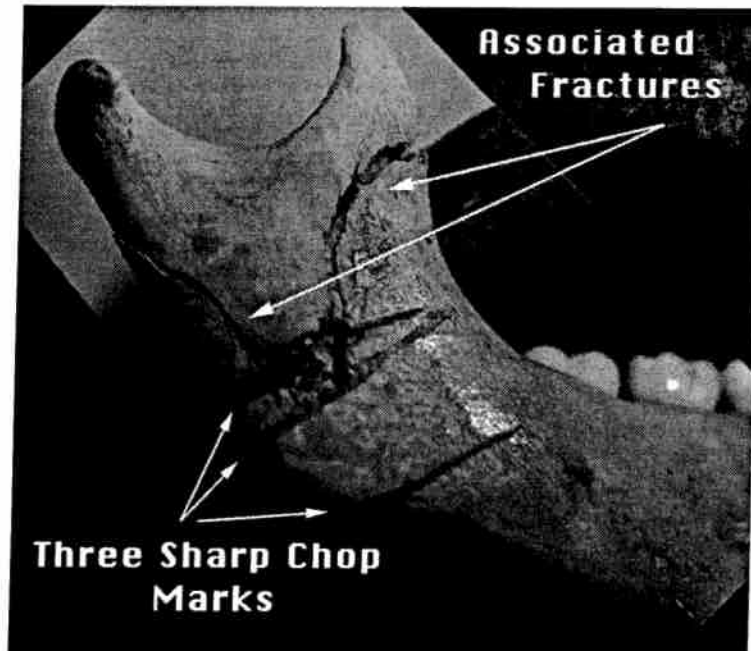
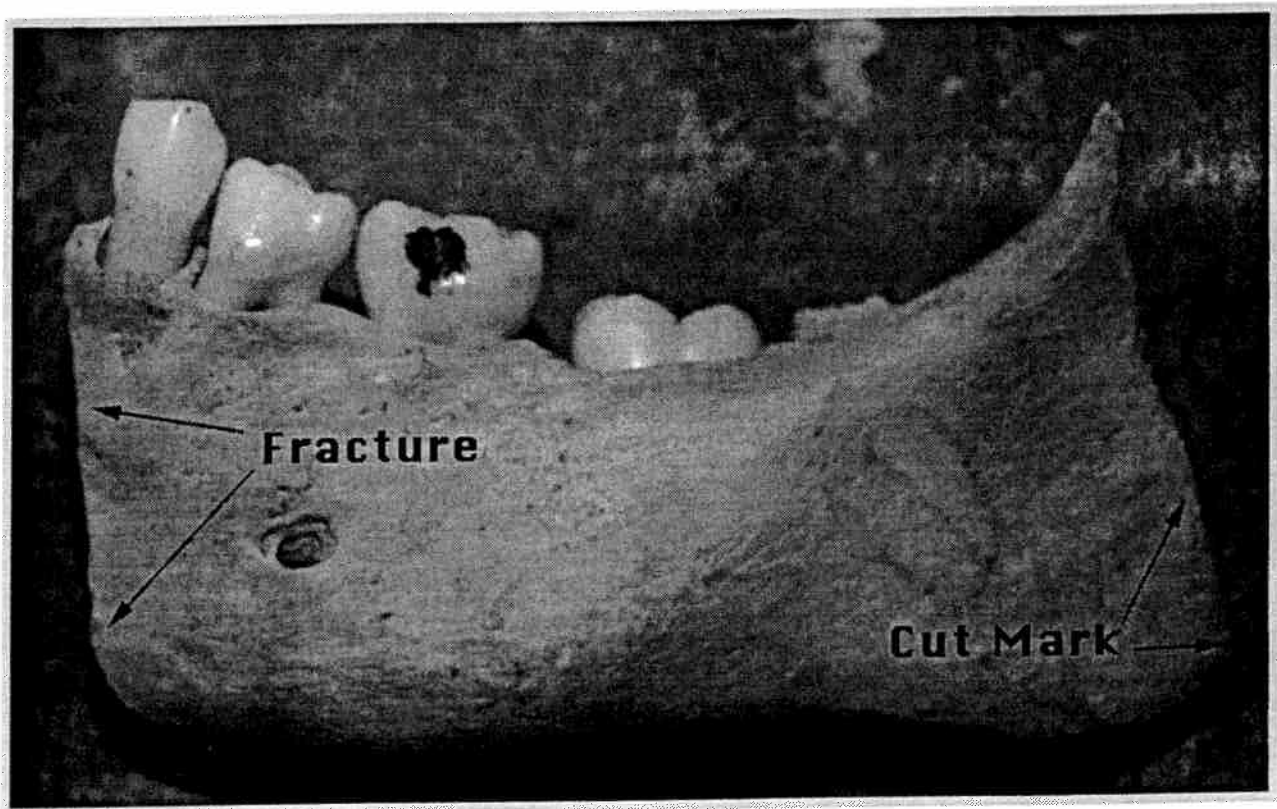


Figure 2. Left horizontal ramus of lateral mandible FA97-010 with tool mark defects and associated fractures indicated



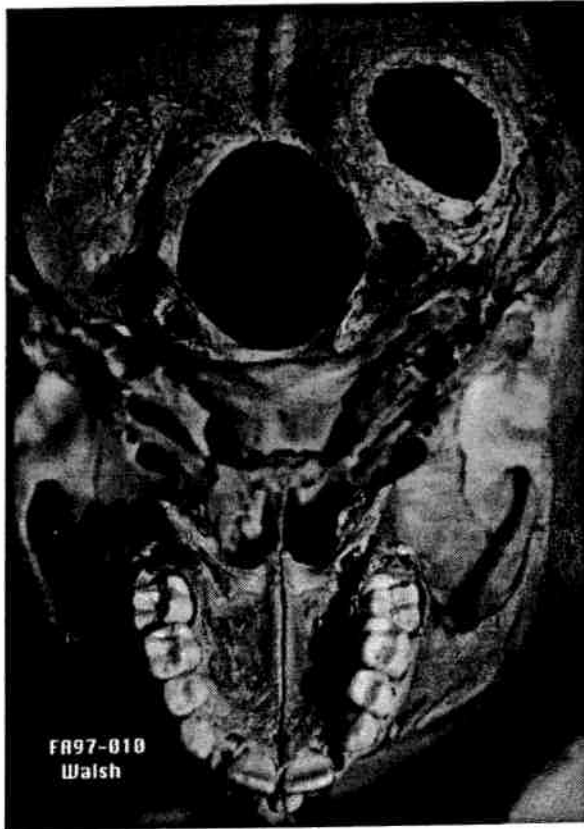


Figure 3. **A**: Base of skull FA97-010 with 2 tool mark defects indicated. **B**: Respective close-ups of sharp entrance striae from the same wounds in approximately the same orientation, illustrating 2 striae directions thus 2 separate chop wounds to the occipital region.

