



ARMED FORCES INSTITUTE OF PATHOLOGY
Office of the Armed Forces Medical Examiner
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Rockville, MD 20850
1-800-944-7912



FINAL AUTOPSY REPORT

Name: Fahad, Mobass	ID number: (b)(6)
Alternate Reported Name: (b)(6)	Autopsy No.: (b)(6)
SSAN: n/a	AFIP No.: (b)(6)
Date of Birth: (b)(6) 1979 (per records)	Rank: Civilian
Date of Death: (b)(6) 2004	Place of Death: Iraq
Date of Autopsy: 28 November 2004	Place of Autopsy: Dover AFB,
Date of Report: 14 March 2005	Dover, DE

Circumstances of Death: This 25 year old male civilian, presumed Iraq national, died while in US custody in Iraq. By report, he was admitted to the hospital at the Baghdad Central Confinement Facility with seizures and asthma on 12 November 2004, requiring an emergent tracheostomy for airway stabilization. He was placed on seizure prophylaxis and stabilized for several days. During preparation for transfer back to the camp, he had a generalized tonic clonic seizure and went into cardiac arrest. CPR was unsuccessful, and he was pronounced dead. By report, he had been in a Fallujah hospital for previous seizures. For complete clinical details, please refer to the medical records.

Authorization for Autopsy: Office of the Armed Forces Medical Examiner, IAW 10 USC 1471

Identification: Visual, per detention facility records; postmortem fingerprints and DNA profile obtained.

CAUSE OF DEATH: Acute Myocarditis

MANNER OF DEATH: Natural

FINAL AUTOPSY DIAGNOSES:

- I. Acute myocarditis (Cardiovascular Pathology consultation)
 - a. Microscopically, acute myocarditis
 - i. Focal myocyte necrosis and interstitial inflammatory infiltrate, right ventricle
 - b. 390 gm heart
 - i. Focal moderate coronary atherosclerosis, single vessel disease
 1. 60% luminal narrowing of proximal left anterior descending artery by pathologic intimal thickening
- II. Clinical history of "Seizures" (Neuropathology consultation)
 - a. Brain, 1400 gm (1385 gm fixed)
 - b. Microscopically, global hypoxic-ischemic injury (Non-specific findings)
 - i. Eosinophilic cytoplasm and nuclear hyperchromasia and pyknosis in basal ganglia, hippocampal formation, brain stem and cerebellum, and in a pseudolaminar distribution in the cerebral cortex
 - ii. Focal petechia hemorrhage in brainstem
 - iii. Meningeal congestion
- III. Clinical history of "Asthma" (Pulmonary Pathology consultation)
 - a. Vascular congestion of lungs; right lung 630 gm, left lung 520 gm
 - b. Microscopically, mild changes suggestive but not diagnostic of asthma (reactive airway disease)
 - i. Airway basement membrane thickening
 - ii. Focal goblet cell metaplasia and mucus plugging
 - iii. No significant eosinophilia or smooth muscle hyperplasia
- IV. No evidence of significant injury
 - a. Minor contusions of the right thigh
 - b. Healing pustules of right arm and left buttock
 - c. No internal evidence of trauma
- V. No evidence of restraint
- VI. Toxicology (AFIP)
 - a. Volatiles: Heart blood and bile negative for ethanol
 - b. Drugs: Blood negative for screened medications and drugs of abuse

EXTERNAL EXAMINATION

The body is that of a well-developed, well-nourished Caucasian male clad in a cut yellow one-piece jumpsuit and a pair of blue paper shorts. The body weighs 220 pounds, is 68" in height and appears consistent with the reported age of 25 years. The body is initially received frozen and is thawed prior to autopsy. Rigor has dissipated, and the body is flaccid once thawed. Lividity is present and fixed on the posterior surface of the body, except in areas exposed to pressure. There is early red marbling of the extremities.

The scalp is covered with dark brown hair averaging 3 cm in length. Facial hair consists of a dark mustache and dark beard. The irides are brown, and the corneae are slightly cloudy. The sclerae and conjunctivae are pale and free of petechiae. The earlobes are not pierced. The external auditory canals, external nares and oral cavity are free of foreign material and abnormal secretions. The nasal skeleton is palpably intact. The lips are without evident injury. The teeth are natural with extensive decay and caries evident.

The neck is straight and the trachea is midline and mobile. The chest is symmetric and well developed. No injury of the ribs or sternum is evident externally. The abdomen is protuberant and soft, with numerous striae. Healed surgical scars of the abdomen are not noted. The extremities are well developed with normal range of motion. The fingernails are intact. The soles of the feet are calloused and hyperkeratotic. There is a 1 x 0.5 cm scar on the left knee. Tattoos are not noted, and needle tracks are not observed. The external genitalia are those of a normal adult circumcised male. The testes are descended and free of masses. The pubic hair is present in a normal distribution. The buttocks and anus are unremarkable.

EVIDENCE OF THERAPY

There is a piece of white tape with gauze covering a tracheostomy incision on the lower anterior aspect of the neck. There is an endotracheal tube in place, protruding from the mouth. There are needle puncture marks with associated ecchymoses of the bilateral antecubital fossae and on the back of the left hand. There is a cluster of needle puncture marks in the left inguinal region. There is an intravenous catheter in the right inguinal region, secured with black sutures. There are five adhesive EKG tabs on the body, two on the upper right anterior aspect of the chest, one on the upper left anterior aspect of the chest, one on the lower right anterior aspect of the chest, and one on the lower left anterior aspect of the abdomen. There are two adhesive defibrillator pads on the body, one on the anterior left mid aspect of the chest and one on the mid left side of the back. There is no other evidence of medical intervention.

EVIDENCE OF INJURY

The ordering of the following injuries is for descriptive purposes only and is not intended to imply order of infliction or relative severity.

AUTOPSY REPORT (b)(6)
FAHAD, Mobass

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There is a 4 x 3 cm red contusion on the lower lateral aspect of the right thigh, and there is a 4 x 3 cm red contusion with central pallor on the lower medial aspect of the right thigh. Incision of the skin over these contusions reveals a small amount of hemorrhage within the subcutaneous adipose tissue, but no deep injury.

There is a 0.3 x 0.2 cm healing crust on the back of the right upper arm, and there is a 0.5 x 0.3 cm healing pustule on the lower lateral aspect of the left buttock.

On internal examination of the head, chest and abdomen, there is no evidence of injury.

INTERNAL EXAMINATION

BODY CAVITIES:

The body is opened by the usual thoraco-abdominal incision and the chest plate is removed. No adhesions or abnormal collections of fluid are present in any of the body cavities. All body organs are present in the normal anatomical position. The vertebral bodies are visibly and palpably intact. The subcutaneous fat layer of the abdominal wall is 8 cm thick. There is no internal evidence of blunt force or penetrating injury to the thoraco-abdominal region.

HEAD: (CENTRAL NERVOUS SYSTEM)

The scalp is reflected, and there is no subgaleal hemorrhage or skull fractures found. The calvarium of the skull is removed. The dura mater and falx cerebri are intact. There is no epidural or subdural hemorrhage present. The leptomeninges are thin and delicate. The cerebrospinal fluid is clear. The brain is darkly discolored from decompositional changes. The cerebral hemispheres are symmetrical. The structures at the base of the brain, including cranial nerves and blood vessels, are intact. The brain is fixed in formalin prior to submission to Neuropathology for sectioning. The dura is stripped from the basilar skull, and no fractures are found. The atlanto-occipital joint is stable. The brain weighs 1400 grams. See "Neuropathology Report" below.

NECK:

Examination of the soft tissues of the neck, including strap muscles, thyroid gland and large vessels, reveals no abnormalities. The anterior strap muscles of the neck are homogeneous and red-brown, without hemorrhage. The thyroid cartilage and hyoid bone are intact. The larynx is lined by intact white mucosa and is unobstructed. The thyroid gland is symmetric and red-brown, without cystic or nodular change. There is no evidence of infection, tumor, or trauma, and the airway is patent. Incision and dissection of the posterior neck demonstrates no deep paracervical muscular injury, hemorrhage, or fractures of the dorsal spinous processes.

CARDIOVASCULAR SYSTEM:

The pericardial surfaces are smooth, glistening and unremarkable; the pericardial sac is free of significant fluid and adhesions. A moderate amount of epicardial fat is present. The heart is fixed in formalin prior to submission to Cardiovascular Pathology for sectioning. The aorta and its major branches arise normally, follow the usual course and are widely patent, free of significant atherosclerosis and other abnormality. The venae cavae and their major

tributaries return to the heart in the usual distribution and are free of thrombi. The heart weighs 390 grams. See "Cardiovascular Pathology Report" below.

RESPIRATORY SYSTEM:

The upper airway is clear of debris and foreign material; the mucosal surfaces are smooth, yellow-tan and unremarkable. The pleural surfaces are smooth, glistening and unremarkable bilaterally. The pulmonary parenchyma is red-purple, exuding a moderate amount of bloody fluid; no focal lesions are noted. The pulmonary arteries are normally developed, patent and without thrombus or embolus. The right lung weighs 630 grams; the left 520 grams.

LIVER & BILIARY SYSTEM:

The liver has an intact, smooth capsule and a sharp anterior border. The hepatic capsule is smooth, glistening and intact, covering dark red-brown, moderately congested and slightly firm parenchyma with no focal lesions noted. The gallbladder contains 10 ml of green-brown, mucoid bile; the mucosa is velvety and unremarkable. The extrahepatic biliary tree is patent, without evidence of calculi. The liver weighs 1950 grams.

ALIMENTARY TRACT:

The tongue is free of bite marks, hemorrhage, or other injuries. The esophagus is lined by gray-white, smooth mucosa. The gastric mucosa is arranged in the usual rugal folds and the lumen contains 100 ml of semisolid digesting food, including rice and vegetables. The small and large bowel are unremarkable. The pancreas has a normal pink-tan lobulated appearance and the ducts are clear. The appendix is present and is unremarkable.

GENITOURINARY SYSTEM:

The renal capsules are smooth and thin, semi-transparent and strip with ease from the underlying smooth, red-brown cortical surfaces. The cortices are sharply delineated from the medullary pyramids, which are red-purple to tan and unremarkable. The calyces, pelves and ureters are otherwise unremarkable. White bladder mucosa overlies an intact bladder wall. The urinary bladder contains a film of cloudy urine. The prostate gland is normal in size, with lobular, yellow-tan parenchyma. The seminal vesicles are unremarkable. The testes are free of mass lesions, contusions, or other abnormalities. The right kidney weighs 140 grams; the left 160 grams.

RETICULOENDOTHELIAL SYSTEM:

The spleen has a smooth, intact capsule covering red-purple, moderately firm parenchyma; the lymphoid follicles are unremarkable. The regional lymph nodes appear normal. The spleen weighs 180 grams.

ENDOCRINE SYSTEM:

The pituitary, thyroid and adrenal glands are unremarkable.

MUSCULOSKELETAL SYSTEM:

Muscle development is normal. No bone or joint abnormalities are noted.

MICROSCOPIC EXAMINATION

HEART: See "Cardiovascular Pathology Report" below.

LUNGS: See "Pulmonary Pathology Report" below.

LIVER: The hepatic architecture is intact. The portal areas show no increased inflammatory component or fibrous tissue. The hepatic parenchymal cells are well-preserved with no evidence of cholestasis, fatty metamorphosis, or sinusoidal abnormalities.

SPLEEN: The capsule and white pulp are unremarkable. There is minimal congestion of the red pulp.

ADRENALS: The cortical zones are distinctive, and the medullae are not remarkable.

KIDNEYS: The subcapsular zones are unremarkable. The glomeruli are mildly congested without cellular proliferation, mesangial prominence, or sclerosis. The tubules are well preserved. There is no interstitial fibrosis or significant inflammation. There is no thickening of the walls of the arterioles or small arterial channels. The transitional epithelium of the collecting system is normal.

BRAIN: See "Neuropathology Report" below.

CARDIOVASCULAR PATHOLOGY REPORT

CV Path, (b)(6)

"Diagnosis: (b)(6)

1. Acute myocarditis with focal myocyte necrosis and interstitial inflammatory infiltrate, right ventricle
2. Focal moderate coronary atherosclerosis, single vessel disease

History: Approximately 24 year old male Iraqi detainee who died in US custody; history of seizures prior to death.

Heart: 390 grams; normal epicardial fat; closed foramen ovale; normal cardiac chamber dimensions: left ventricular cavity diameter 40 mm, left ventricular free wall thickness 13 mm, ventricular septum thickness 13 mm; right ventricle thickness 4 mm, without gross scars or abnormal fat infiltrates; unremarkable valves; no gross myocardial fibrosis or necrosis; histologic sections show focal myocyte necrosis with interstitial infiltrates of lymphocytes and neutrophils in right ventricle, left ventricle is unremarkable.

Coronary arteries: Normal ostia; right dominance; focal moderate atherosclerosis: 60% luminal narrowing of proximal left anterior descending artery by pathologic intimal thickening; no other significant narrowing.

Comment: Although it is uncommon, we have seen cases of acute myocarditis limited to the right ventricle. It has also been suggested that this could represent an early phase of arrhythmogenic right ventricular dysplasia, as the etiology of this entity is not fully understood."

NEUROPATHOLOGY REPORT

Department of Neuropathology and Ophthalmic Pathology, AFIP:

"We examined the approximately 1385-gram formalin-fixed brain submitted in reference to this case. The dural fragment submitted for evaluation does not show significant pathologic findings. The brain is soft and friable and dusky in color and deformed with the right hemisphere appearing larger than the left. There is a 2 x 1.5 cm hyperemic area along the left middle frontal gyrus. The gyral pattern is normal. The brain stem and cerebellum are similarly deformed and dusky in color. Because of these extensive artefactual changes, the cranial nerves and blood vessels at the base of the brain cannot be evaluated. There is no evidence of subfalcine herniation; tonsillar and uncal herniation cannot be assessed because of the extensive artifact. Serial coronal sections of the cerebrum show overall dusky discoloration of the cortical ribbon with slight blurring of the gray-white junction. The ventricular system is distorted and difficult to evaluate. There is extensive distortion, softening and friability of the basal ganglia, hippocampal formations, thalamus, and hypothalamus. The substantia nigra and locus cereleus, and aqueduct cannot be accessed due to the artefactual changes. The spinal cord is not submitted, but the uppermost cervical cord and cervicomedullary junction are soft and distorted. The cerebellum and brainstem are dusky in color and macerated.

Summary of microscopic sections: 1. Superior/middle frontal gyrus, right. 2. Inferior parietal lobule, right. 3. Superior/middle temporal gyrus, right. 4. Cingulate gyrus, left. 5. Hippocampal formation, right. 6. Caudate/putamen/pallidum, right. 7. Thalamus/hypothalamus at mammillary bodies, right. 8. Substantia nigra/midbrain. 9. Pons. 10. Medulla. 11. Cerebellum.

All sections were stained with H&E.

Microscopic sections demonstrate extensive neuronal changes in the form of shrunken eosinophilic cytoplasm and nuclear hyperchromasia and pyknosis in sections of basal ganglia, hippocampal formation, brain stem and cerebellum, and in a pseudolaminar distribution in sections of cerebral cortex. These features are consistent with global hypoxic-ischemic injury. There is focal petechial hemorrhage noted on the sections of the brainstem. Microscopic sections of the left middle frontal gyrus confirms the meningeal congestion."

PULMONARY PATHOLOGY REPORT

Department of Pulmonary Pathology, AFIP:

"Lungs, autopsy material:

- Airway basement membrane thickening, focal goblet cell metaplasia and mucus plugging
- Vascular congestion

The sections of lung show focal mucus plugging associated with basement membrane thickening and goblet cell metaplasia (focal). We note the history of asthma, while the above changes are suggestive of asthmatic changes, they are not striking and the sections lack significant eosinophilia and muscle hyperplasia. The lungs additionally show vascular congestion. There is a mild to moderate amount of fibrin in the alveoli which may be secondary to vascular leak. Fibrin/platelet aggregates are seen in rare vessels in bronchovascular bundles as well as in the capillary bed. It is difficult to discern whether these are pre or postmortem."

ADDITIONAL PROCEDURES

- Documentary photographs are taken by OAFME photographers
- Specimens retained for toxicologic testing and/or DNA identification are: vitreous fluid, femoral blood, heart blood, urine, bile, spleen, liver, kidney, lung, psoas muscle, gastric contents, and adipose tissue
- The dissected organs are forwarded with the body
- Personal effects are released to the appropriate mortuary operations representative

OPINION

This adult male Iraqi detainee died in US custody of acute myocarditis, inflammation of the heart involving the right ventricle. He had a clinical history of "seizures", however, no etiology for the seizures was found on examination of the brain, and the episodes may have been cardiac in origin rather than neurologic. He also had a clinical history of asthma, and while there were microscopic changes suggestive of asthma, these pulmonary findings were not diagnostic for asthma nor significant enough to have contributed to his death. Acute myocarditis may be caused by infectious agents (bacterial, viral, fungal), connective tissue diseases, or can be idiopathic (no recognized cause).

The manner of death is natural.

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(b)(6) Deputy Medical Examiner



DEPARTMENT OF DEFENSE
ARMED FORCES INSTITUTE OF PATHOLOGY
WASHINGTON, DC 20306-8000

REPLY TO
ATTENTION OF

AFIP- (b)(6)

TO:

OFFICE OF THE ARMED FORCES MEDICAL
EXAMINER
ARMED FORCES INSTITUTE OF PATHOLOGY
WASHINGTON, DC 20306-6000

PATIENT IDENTIFICATION

AFIP Accessions Number Sequence

(b)(6)

Name

FAHAD, MOBASS

SSAN:

Autopsy: (b)(6)

Toxicology Accession #: (b)(6)

Date Report Generated: December 15, 2004

CONSULTATION REPORT ON CONTRIBUTOR MATERIAL

AFIP DIAGNOSIS

REPORT OF TOXICOLOGICAL EXAMINATION

Condition of Specimens: GOOD

Date of Incident: (b)(6) 2004

Date Received: 11/30/2004

VOLATILES: The **HEART BLOOD AND BILE** were examined for the presence of ethanol at a cutoff of 20 mg/dL. No ethanol was detected.

DRUGS: The **BLOOD** was screened for amphetamine, antidepressants, antihistamines, barbiturates, benzodiazepines, cannabinoids, chloroquine, cocaine, dextromethorphan, lidocaine, narcotic analgesics, opiates, phencyclidine, phenothiazines, sympathomimetic amines and verapamil by gas chromatography, color test or immunoassay. The following drugs were detected:

None were found.

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