ARMED FORCES INSTITUTE OF PATHOLOGY
Office of the Armed Forces Medical Examiner
1413 Research Blvd., Bldg. 102
Rockville, MD 20850
301-319-0000

FINAL AUTOPSY EXAMINATION REPORT

Name: Jabar, Walid Tawfiq
SSAN: (b)(6)
Date of Birth: (b)(6) 1983
Date of Death (b)(6) 2008
Date and time of Autopsy: 27 FEB 2008 0900
Date of Report: 01 MAY 2008

Autopsy No.: (b)(6)
AFIP No.: (b)(6)
Rank: CIV
Place of Death: Iraq
Place of Autopsy: Port Mortuary
Dover AFB, Dover DE

Circumstances of Death: 25 year old male civilian detainee reportedly collapsed during interview

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

Identification: Presumptive

CAUSE OF DEATH: Severe metabolic derangement due to acute adrenocortical insufficiency

MANNER OF DEATH: Natural

EXTERNAL EXAMINATION

The body is that of a well-developed, well-nourished male that weighs 137 pounds, is 68 inches in length and appears compatible with the reported age of 25 years. The body is cold after refrigeration. Rigor is passing in all extremities. Lividity is present and fixed on the posterior surfaces of the body, except in areas exposed to pressure. The head is normocephalic, and the scalp hair is black. Facial hair consists of a black beard and mustache. The irides are dark. The corneae are cloudy. The conjunctivae are unremarkable with no evidence of petechial hemorrhages. The sclerae are white. The external auditory canals, external nares and oral cavity are free of foreign material and abnormal secretions. The nasal skeleton and maxilla are palpably intact. The upper and lower lips are dry and chapped. The teeth are natural and in good condition. Examination of the neck reveals no evidence of injury. The chest is unremarkable. No evidence of injury of the ribs or the sternum is evident externally. The abdomen is flat. The external genitalia are those of a normal adult male. The posterior torso and anus are without note. The extremities show no evidence of injury. The fingernails are intact.

CLOTHING AND PERSONAL EFFECTS

- Pair of black sandals, soiled
- Black long-sleeved shirt with the emblem "Down Nour", soiled.
- Tan and orange striped long-sleeved shirt
- Pair of blue sweat pants
- Pair of tan sweat pants

MEDICAL INTERVENTION

- Endotracheal tube
- Nasogastric tube
- Intravascular catheters in both antecubital fossae, the right wrist and right inguinal region
- Foley catheter with attached collection system

EVIDENCE OF INJURY

There is a ¼ inch contusion present on the right lower lip.

RADIOGRAPHS

A complete set of postmortem radiographs is obtained. There is no evidence of skeletal injury or metallic foreign material.

INTERNAL EXAMINATION

BODY CAVITIES:

The body is opened by the usual thoraco-abdominal incision and the chest plate is removed. The ribs, sternum, and vertebral bodies are visibly and palpably intact. No adhesions are present in any

of the body cavities. Approximately 100 ml of amber fluid is present in the left thoracic cavity and 50 ml in the right thoracic cavity. All body organs are present in normal anatomical position. The subcutaneous fat layer of the abdominal wall is ⅛ inch thick.

HEAD AND CENTRAL NERVOUS SYSTEM:

The scalp is reflected. The galeal and subgaleal soft tissues of the scalp are free of injury. There are no skull fractures. 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 cerebral hemispheres are symmetrical. The structures at the base of the brain, including cranial nerves and blood vessels are intact. Clear cerebrospinal fluid surrounds the 1440 gram brain, which has unremarkable gyri and sulci. After fixation, coronal sections through the cerebral hemispheres reveal no lesions. Transverse sections through the brain stem and cerebellum are unremarkable. The atlanto-occipital joint is stable. The upper spinal cord is unremarkable.

NECK:

The anterior strap muscles of the neck are homogenous and red-brown, without hemorrhage by layer-wise dissection. The thyroid cartilage and hyoid bone are intact. The larynx is lined by intact white mucosa. The tongue is free of bite marks, hemorrhage, or other injuries.

CARDIOVASCULAR SYSTEM:

The 250 gram heart is contained in an intact pericardial sac. The epicardial surface is smooth, with minimal fat investment. The coronary arteries are present in a normal distribution, with a right-dominant pattern. Cross sections of the vessels show widely patent lumina. The myocardium is homogenous, red-brown, and firm. The valve leaflets are thin and mobile. The endocardium is smooth and glistening. The aorta gives rise to three intact and patent arch vessels. The renal and mesenteric vessels are unremarkable.

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 diffusely congested, exuding moderate amounts of blood and frothy fluid; no focal lesions are noted. The pulmonary arteries are normally developed, patent and without thrombus or embolus. The right lung weighs 520 grams; the left 650 grams.

HEPATOBILIARY SYSTEM:

The 1420 gram liver has an intact smooth capsule covering dark red-brown, moderately congested tan-brown parenchyma with no focal lesions noted. The gallbladder contains 8 ml of green-brown, mucoid bile; the mucosa is velvety and unremarkable. The extrahepatic biliary tree is patent, without evidence of calculi.

GASTROINTESTINAL SYSTEM:

The esophagus is lined by gray-white, smooth mucosa. The gastric mucosa is arranged in the usual rugal folds and the lumen is empty. The small and large bowel are unremarkable. Formed stool is present in the rectal vault. The pancreas has a normal pink-tan lobulated appearance and the ducts are clear. The appendix is present.

GENITOURINARY SYSTEM:

The right and left kidneys each weigh 130 grams. The renal capsules are smooth, semi-transparent and strip with ease from the underlying smooth, red-brown cortical surface. The cortices are sharply delineated from the medullary pyramids, which are red-purple to tan and unremarkable. The calyces, pelves and ureters are unremarkable. White bladder mucosa overlies an intact bladder wall. The bladder is empty. Approximately 20 ml of urine is present in the collection bag. The testes, prostate gland and seminal vesicles are without note.

LYMPHORETICULAR SYSTEM:

The 160 gram spleen has a smooth, intact capsule covering red-purple, moderately firm parenchyma; the lymphoid follicles are unremarkable. Lymph nodes in the hilar, periaortic and iliac regions are unremarkable. Gastric (greater curvature) lymph nodes appear mildly enlarged.

ENDOCRINE SYSTEM:

The thyroid gland is symmetric and red-brown, without cystic or nodular change. The adrenal glands are poorly discernible from the adjacent adipose tissue.

MUSCULOSKELETAL SYSTEM:

No abnormalities of the muscles, bones or joints are identified. Longitudinal incisions of the posterior surfaces of the torso, upper and lower extremities show no evidence of injury.

ADDITIONAL PROCEDURES

1. Documentary photographs are taken by the OAFME photographer.
2. Personal effects are released to the appropriate mortuary operations representatives.
3. Specimens retained for toxicology testing and/or DNA identification are: vitreous fluid, blood, urine, spleen, liver, lung, kidney, bile, adipose tissue and psoas muscle.
4. The brain and heart are retained for further examination. The remaining dissected organs are forwarded with body.

MICROSCOPIC EXAMINATION

1. Heart (slides 1-4): No significant microscopic abnormality
2. Lungs (slides 5, 11-13): Acute bronchoalveolar pneumonia, right lower lobe; bilateral pulmonary alveolar congestion with patchy pulmonary edema

3. Liver (slide 6): No significant microscopic abnormality
4. Spleen (slide 6): No significant microscopic abnormality
5. Kidneys (slide 7): Tubular autolysis
6. Lymph nodes, peri-gastric (slide 10): Follicular hyperplasia
7. Brain (slides 16,17): No significant microscopic abnormality
8. Tissue from region of adrenal glands (right slides 8,14; left slides 9,15): Scattered fragments of adrenal medullary tissue without evidence of adrenal cortical tissue (9,14,15); portions of lymph nodes and peripheral neural tissue, no adrenal tissue seen (8).

FINAL AUTOPSY DIAGNOSES

I. Adrenocortical atrophy
   A. Metabolic imbalance (per protocol)
      1. Hyponatremia, hyperkalemia, hypoglycemia and metabolic acidosis
      2. ECG finding of prolonged QT interval (per protocol)

II. Acute bronchoalveolar pneumonia (right lower lobe)
   A. Bilateral pulmonary congestion with patchy pulmonary edema
   B. Bilateral pleural effusions (right 50 ml, left 100 ml)

III. Toxicology: Acetone is present in the blood and urine; atropine is present in the urine

OPINION

According to reports, this 25 year old male civilian detainee collapsed while being interviewed. Resuscitative efforts were started at the scene and he was transported to the medical facility where he was found to be hypotensive, hypothermic and have a GCS of 3. Initial laboratory testing showed significant metabolic derangement (hyponatremia, hypokalemia, metabolic acidosis and hypoglycemia). Although the decedent was initially stabilized, his condition continued to worsen until his demise on the following day. Review of the available medical records revealed a history of a "hunger strike" for approximately 7-10 days prior to death and unspecified "kidney" problems for which the decedent was taking daily hydrocortisone.

Autopsy examination showed no evidence of trauma. Microscopic examination showed acute bronchopneumonia of the left lung and bilateral adrenal cortical atrophy. Toxicological examination showed the presence of atropine in the urine and acetone (trace) in the blood and urine.

Acute adrenocortical insufficiency may present as a "crisis" in patients with chronic adrenocortical insufficiency precipitated by any form of stress or from too rapid withdrawal of exogenous steroids in those whose adrenal glands have been suppressed by long term administration.[1] Findings include hyponatremia, hyperkalemia, hypoglycemia, metabolic acidosis and prolongation of the QT interval on EKG.[2] Untreated patients have a poor prognosis.[3]

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[1] Cotran, R, Kumar, V.,et.al., Robbins Pathologic Basis of Disease, W.B. Saunders Co. 1994, 5th Ed., pg 1157
[2] Kirkland, L., Adrenal Crisis, Dec 18, 2007, http://www.emedicine.com/med/topic65.htm
[3] Klauer, K., Adrenal Insufficiency and Adrenal Crisis, Jan 30, 2007, http://www.emedicine.com/emerg/topic16.htm

In the current case the etiology of the adrenal atrophy is uncertain. Contributing stressors included pneumonia and elective food deprivation. Postmortem toxicology showed the presence of the therapeutic substance atropine and trace amounts of acetone. Acetone is a by-product of fat metabolism and can be seen as a result of food deprivation.

In summary, this decedent most likely had long standing (chronic) adrenocortical insufficiency which progressed to acute insufficiency ("crisis") in the face of infectious (pneumonia) and food deprivation stressors (b)(6) succumbed to severe metabolic derangement due to acute adrenocortical insufficiency. The manner of death is natural.

This case is reviewed in consultation with the Departments of Endocrine and Renal Pathology. The latter is pending. Upon completion an addendum report will issued if contributory.

(b)(6)

(b)(6) Medical Examiner

CERTIFICATE OF DEATH *(OVERSEAS)*
Acte dé décès (D'Outre-Mer)

NAME OF DECEASED *(Last, First, Middle)* Nom du décédé (Nom et prénoms)	GRADE Grade	BRANCH OF SERVICE Arme	SOCIAL SECURITY NUMBER Numéro de l'Assurance Social
Jabar, Walid, Tawfiq		Civilian	(b)(6)

ORGANIZATION Organisation	NATION *(e.g. United States)* Pays	DATE OF BIRTH Date de naissance	SEX Sexe
	Iraq	(b)(6) 1983	[X] MALE [ ] FEMALE

RACE Race		MARITAL STATUS État Civil			RELIGION Culte		
[X]	CAUCASOID Caucasique		SINGLE Célibataire		DIVORCED Divorcé		PROTESTANT Protestant		OTHER (Specify) Autre (Spécifier)
[ ]	NEGROID Negroide		MARRIED Marié		SEPARATED Séparé		CATHOLIC Catholique	[X]	UNK
[ ]	OTHER (Specify) Autre (Spécifier)		WIDOWED Veuf				JEWISH Juif		

NAME OF NEXT OF KIN Nom du plus proche parent	RELATIONSHIP TO DECEASED Parenté du décédé avec le sus
STREET ADDRESS Domicilé à (Rue)	CITY OR TOWN OR STATE (Include ZIP Code) Ville (Code postal compris)

MEDICAL STATEMENT Déclaration médicale

	CAUSE OF DEATH (Enter only one cause per line) Cause du décès (N'indiquer qu'une cause par ligne)	INTERVAL BETWEEN ONSET AND DEATH Intervalle entre l'attaque et le décès
DISEASE OR CONDITON DIRECTLY LEADING TO DEATH [1] Maladie ou condition directement responsable de la mort	Severe metabolic derangement due to acute adrenocortical insufficiency	Hours
ANTECEDENT CAUSES Symptômes précurseurs de la mort — MORBID CONDITION, IF ANY, LEADING TO PRIMARY CAUSE Condition morbide, s'il y a lieu, menant à la cause primaire		
ANTECEDENT CAUSES Symptômes précurseurs de la mort — UNDERLYING CAUSE, IF ANY, GIVING RISE TO PRIMARY CAUSE Condition morbide, s'il y a lieu, menant à la cause primaire		
OTHER SIGNIFICANT CONDITIONS [2] Autres conditions significatives [2]		

MODE OF DEATH Condition de décès	AUTOPSY PERFORMED Autopsie effectuée [X] YES Oui [ ] NO Non	CIRCUMSTANCES SURROUNDING DEATH DUE TO EXTERNAL CAUSES Circonstances de la mort suscitées par des causes extérieures
[X] NATURAL Mort naturelle	MAJOR FINDINGS OF AUTOPSY Conclusions principales de l'autopsie	
[ ] ACCIDENT Mort accidentelle		
[ ] SUICIDE Suicide	NAME OF PATHOLOGIST Nom du pathologiste (b)(6)	
[ ] HOMICIDE Homicide	SIGNATURE (b)(6) — DATE Date 27 February 2008	AVIATION ACCIDENT Accident à Avion [ ] YES Oui [X] NO Non

DATE OF DEATH *(day, month, year)* Date de décès (le jour, le mois, l'année)	PLACE OF DEATH Lieu de décès
(b)(6) 2008 1743	Iraq

I HAVE VIEWED THE REMAINS OF THE DECEASED AND DEATH OCCURRED AT THE TIME INDICATED AND FROM THE CAUSES AS STATED ABOVE
J'ai examiné les restes mortels du dé funtet je conclus que le décès est survenu à l'heure indiquée et à, la suite des causes énumérées ci-dessus.

NAME OF MEDICAL OFFICER Nom du médicin militaire ou du médicin sanitaire	TITLE OR DEGREE Titre ou diplôme
(b)(6)	Medical Examiner

GRADE Grade	INSTALLATION OR ADDRESS Installation ou adresse
(b)(6)	Dover AFB, Dover DE
DATE Date 5/7/2008	SIGNATURE (b)(6)

[1] State disease, injury or complication which caused death, but not mode of dying such as,
[2] State conditions contributing to the death, but not related to the disease or condition causing death.
[1] Préciser la nature de la maladie, de la blessure ou de la complication qui a contribué à la mort, mais non la manière de mourir, telle qu'un arrêt du coeur, etc
[2] Préciser la condition qui a contribué à la mort, mais n'ayant aucun rapport avec la maladie ou à la condition qui a provoqué la mort.

DD FORM 1 APR 77 2064 REPLACES DA FORM 3565, 1 JAN 72 AND DA FORM 3565-R(PAS), 26 SEP 75, WHICH ARE OBSOLETE.

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