ARMED FORCES INSTITUTE OF PATHOLOGY
Office of the Armed Forces Medical Examiner
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Rockville, MD 20850
301-319-0000

FINAL AUTOPSY EXAMINATION REPORT

Name: BTB Daraj, Rasoul Jabal
ISN: (b)(6)
Date of Birth: (b)(6) 1981
Date of Death (b)(6) 2006
Date/Time of Autopsy: 29 March 2006/0900
Date of Report: 04 October 2006

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: This 25 year old male civilian detainee reportedly sustained head injury as the result of an assault by fellow inmates.

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

Identification: Presumptive, according to hospital band.

CAUSE OF DEATH: Complications of blunt force head injuries.

MANNER OF DEATH: Homicide.

FINAL AUTOPSY DIAGNOSES

I. Blunt force injuries:
   A. Injuries of the head and neck:
      1. Left-sided depressed skull fracture (per report).
      2. Subacute left-sided subdural hematoma.
      3. Subacute contusions in the left middle parietal and lateral occipital lobes.
      4. Multiple healing (sutured) lacerations of the left parietal, occipital and vertex regions of the scalp.
      5. Abrasion (1 inch) of the left lateral surface of the neck.
   B. Injuries of the torso:
      1. Fracture of the right acromion.
         a. Subcutaneous and intramuscular hemorrhage of the anterior surface of the right shoulder.
      2. Hemorrhage of the proximal portion of the right spermatic cord.
   C. Injuries of the extremities:
      1. Multiple healing (sutured) lacerations of the posterior surface of the left forearm.
      2. Healing lacerations (2) of the left lower leg.
      3. Multiple contusions of the right leg.

II. Additional findings:
   A. Subacute meningocerebroventriculitis with early abscess formation.
   B. Multifocal acute to subacute cerebral infarcts.
   C. Diffuse acute hypoxic/ischemic neuronal injury.
   D. Status post left hemicraniectomy.
   E. Status post ventriculostomy placement.
   F. Bilateral pulmonary congestion (right 860 gm, left 740 gm).

III. Toxicology: Morphine and midazolam are present in the blood. Metoclopramide is present only in the urine.

EXTERNAL EXAMINATION

The body is that of a well-developed, thin appearing male. The body weighs 133 pounds, is 68 inches in length and appears compatible with the reported age of 25 years. The body temperature is cool after refrigeration. Rigor is present to an equal degree in all extremities. Lividity is fixed and present predominately on the posterior surfaces of the body, except in areas exposed to pressure.

The scalp hair is black. A 15 inch curvilinear stapled incision extends from the left frontal region posteriorly through the right occipital region to the left temporal region, terminating just anterior to the left external ear. Facial hair consists of a black beard. The irides are brown. The corneae are cloudy. The conjuctivae are unremarkable. The sclerae are white. The external auditory canals, external nares and oral cavity are free of foreign material and abnormal secretions. The nasal skeleton is palpably intact. The teeth appear natural and in fair condition.

The neck is straight, and the trachea is midline and mobile. The chest is symmetric. No evidence of injury of the ribs or the sternum is evident externally. The abdomen is flat. A healing 5 inch vertical incision is present on the right side of the abdomen. The fingernails are intact. The extremities show evidence of injury to be described below. (b)(6) tattoo (b)(6) (b)(6) Multiple scars are present on the posterior surface of the left elbow (area 4 ½ x 2 inches) and the dorsal surface of the left hand (2 ¾ x 2 inches). The external genitalia are those of a normal adult male. The posterior torso is without note. The buttocks and anus are unremarkable.

EVIDENCE OF INJURY

Head and neck:

A healing, sutured 1 inch laceration is present in the right temporal region (posterior to right external ear) of the scalp. A healing 1 ½ inch laceration is present in the left parietal region of the scalp. There are multilple, healing confluent lacerations in the left occipital region of the scalp covering an area measuring 1 ¼ x 1 inch. There are multiple healing, sutured lacerations in the central vertex occipital region of the scalp, covering an area measuring 4 ½ x 2 ¼ inches. A linear 1 inch abrasion is on the left lateral surface of the neck. Internal examination reveals a left-sided subacute subdural hematoma.

Torso:

A ½ inch abrasion is present on the posterior surface of the left shoulder. There are multiple irregular healing lesions on the upper and lower back ranging in size from 1/8 to ¾ inch. Internal examination shows focal intramuscular and subcutaneous hemorrhage in the right upper chest and infraclavicular regions. There is hemorrhage in the region of the right spermatic cord.

Extremities:

There are multiple healing abrasions and sutured lacerations on the dorsal surface of the left upper arm and forearm covering an area measuring 2 ½ x 1 inch, ranging in size from 1/8 to ½ inch. A ¾ inch ill defined contusion is on the dorsal surface of the left wrist. There are multiple healing abrasions on the

dorsal surface of the left hand and index finger ranging in size from 1/16 to 3/16 inch. A focal ¼ inch subcutaneous hematoma is present on the palmar surface of the left middle finger. Incision of the left wrist reveals focal subcutaneous hemorrhage in the ulnar region. There is a 6 x 3 inch discontinuous contusion on the anterior surface of the right lower leg. There are two healing lacerations on the medial surface of the left lower leg and the medial surface of the left ankle (¼ inch each).

EVIDENCE OF MEDICAL THERAPY

Evidence of medical therapy consists of:

1. Intracranial catheter with tubing and drainage bag.
2. Intravascular catheters in the left subclavian region, the right wrist and the left forearm.
3. A foley catheter.
4. Probable therapeutic puncture site on the dorsal surface of the right foot.
5. Status post left hemi-craniectomy with shunt catheter placement.
6. Left parietal portion of skull placed in abdomen.

INTERNAL EXAMINATION

HEAD:
(See above "Evidence of Medical Therapy" and "Evidence of Injury")

The staples are removed and the entire scalp is reflected. The posterior portion of the surgical flap (approximately 2 ¾ x 2 inches) is dark and appears devitalized. The remaining calvarium is removed. The 1720 gm brain is placed in fixative pending consultative review. No skull fractures are noted. The atlanto-occipital joint is stable.

NECK:
The anterior strap muscles of the neck are homogenous and red-brown, without hemorrhage. The thyroid cartilage and hyoid are intact. The larynx is lined by intact white mucosa. The thyroid is symmetric and red-brown, without cystic or nodular change. The tongue is free of bite marks, hemorrhage, or other injuries.

BODY CAVITIES:
The ribs, sternum, and vertebral bodies are visibly and palpably intact. No excess fluid is in the pericardial, pleural or peritoneal cavities. The organs occupy their usual anatomic positions. There is no internal evidence of blunt force or penetrating injury to the thoraco-abdominal region.

RESPIRATORY SYSTEM:
The right and left lungs weigh 860 gm and 740 gm, respectively. The external surfaces are smooth and deep red-purple. The pulmonary parenchyma is moderately congested and edematous. No mass lesions or areas of consolidation are present.

CARDIOVASCULAR SYSTEM:
The 460 gm heart is contained in an intact pericardial sac. The epicardial surface is smooth, with minimal fat investment. The coronary arteries arise normally, follow the usual distribution and are

widely patent, without evidence of significant atherosclerosis or thrombosis. The myocardium is homogenous, red-brown, and firm; the atrial and ventricular septa are intact. The aorta gives rise to three intact and patent arch vessels. The vena cava and its major tributaries return to the heart in the usual distribution. The renal and mesenteric vessels are unremarkable.

LIVER & BILIARY SYSTEM:
The 1620 gm liver has an intact, smooth capsule and a sharp anterior border. The parenchyma is tan-brown and congested, with the usual lobular architecture. No mass lesions or other abnormalities are seen. The gallbladder contains approximately 5 ml of green-black bile and no stones. The mucosal surface is green and velvety. The extrahepatic biliary tree is patent.

SPLEEN:
The 170 gm spleen has a smooth, intact, red-purple capsule. The parenchyma is maroon and congested, with distinct Malpighian corpuscles.

PANCREAS:
The pancreas is firm and yellow-tan, with the usual lobular architecture. No mass lesions or other abnormalities are seen.

ADRENALS GLANDS:
The right and left adrenal glands are symmetric, with bright yellow cortices and grey medullae. No masses or areas of hemorrhage are identified.

GENITOURINARY SYSTEM:
The right and left kidneys weigh 170 gm and 160 gm, respectively. The external surfaces are intact and smooth. The cut surfaces are red-tan and congested, with uniformly thick cortices and sharp corticomedullary junctions. The pelves are unremarkable and the ureters are normal in course and caliber. Tan bladder mucosa overlies an intact bladder wall. The bladder is empty. The urine collection bag contains 200 ml of cloudy yellow urine. The prostate 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.

GASTROINTESTINAL TRACT:
The esophagus is intact and lined by smooth, grey-white mucosa. The stomach contains approximately 250 ml of dark green liquid material. The gastric wall is intact. The duodenum, loops of small bowel, colon and appendix are unremarkable.

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

CONSULTATIVE REPORT

Neuropathology Consultation:

The dura is remarkable for adherent surgical material and blood clot in the left frontoparietal region; two additional foci of subdural hemorrhage are noted in the right parietal region. Thick purulent

exudates are identified on the surfaces of the cerebral hemispheres, on the basilar surface of the cerebrum, on the ventral surface of the midbrain and on the cerebellar vermis. A 1.5 x 1 cm soft area associated with an overlying purulent exudate is noted in the inferior left temporal lobe. Both cerebral hemispheres exhibit diffuse gyral flattening and sulcal narrowing. A 3.2 x 3 cm area of contusion and laceration is identified in the left superior parietal lobe. A similar 3 x 3 cm lesion is present in the lateral left occipital lobe. A white plastic catheter, 0.3 cm in diameter, is identified in the left middle frontal gyrus. The circle of Willis has a normal adult configuration without aneurysms, significant atherosclerosis, or occlusions.

Coronal sections of the cerebrum show a cortical ribbon of normal thickness, well demarcated from subjacent white matter. There is a diffuse dusk discoloration of the cerebral cortex. The left parietal and occipital lobe contusions are confirmed; subjacent wedge-shaped hemorrhagic infarcts, extending up to 4 cm into the white matter, are associated with each contusion. The brain is edematous and soft. A slight right to left shift is identified that focally compresses the right ventricular system more than the left. Definite cingulate gyrus herniation is not identified. The ventricular system is filled with a purulent exudate with the left side containing more than the right. The shunt catheter is noted within the ventricular system. The basal ganglia, thalami, and hypothalamus are unremarkable. Other than the previously described purulent exudate, transverse sections of the cerebellum and brainstem are unremarkable. The substantia nigra and locus ceruleus are normally pigmented for age. The aqueduct is slit-like. The spinal cord is not submitted, but the uppermost cervical cord and cervicomedullary junction are unremarkable.

Microscopic sections of meninges demonstrate patchy acute and chronic inflammation with multifocal abscess formation; several leptomeningeal vessels have inflammatory cells within their walls, consistent with a secondary vasculitis. Foci of hemorrhage, surgical material, and granulation tissue are also noted in the leptomeninges. Extensive perivascular and parenchymal acute/chronic inflammation and gliosis are present in several regions of the cerebrum. A large collection of neutrophils associated with necrosis is noted in the section from the left parietal periventricular region, consistent with early abscess formation. Special stains for microorganisms reveal a mixture of short gram-positive coccobacilli and acid-fast bacteria that are interpreted as contaminants. Multiple foci of rarefaction, vacuolation, lipid-and hemosiderin-laden macrophages, hypereosinophilic neurons, acute hemorrhage and subacute inflammation are identified, consistent with multifocal acute to subacute cerebral and pontine infarcts. Numerous hypereosinophilic neurons are identified in the cerebral cortex, deep gray matter, hippocampus, brainstem, and cerebellum consistent with diffuse acute hypoxic/ischemic neuronal injury. The subdural hemorrhage consists of intact and degenerating erythrocytes adjacent to the dura matter and a well-formed fibrous layer on the arachnoid side. Many pigment-laden macrophages are present. These changes are consistent with a subacute subdural hematoma.

In summary, the above changes are consistent with a subacute meningocerebroventriculitis with early abscess formation, subacute contusions in the left middle parietal and lateral occipital lobes, multifocal acute to subacute infarcts, diffuse acute hypoxic/ischemic neuronal injury, and a left subacute subdural hematoma; the subdural most likely occurred at the time of initial trauma with a secondary component occurring as a result of medical intervention.

RADIOLOGIC EXAMINATION

Full body radiographs are obtained revealing, in addition to above, fracture of the acromion of the right scapula. No evidence of non-therapeutic metallic foreign bodies is identified.

ADDITIONAL PROCEDURES

- Documentary photographs are taken by the OAFME staff photographers.
- Specimens retained for toxicologic testing and/or DNA identification are: blood, bile, gastric contents, urine, vitreous, lung, liver, kidney, spleen, adipose tissue and psoas muscle.
- Selected portions of organs are retained in formalin.
- Personal effects are released to the appropriate mortuary operations representatives.

OPINION

According to reports this 25 year old male detainee sustained a depressed skull fracture as the result of an assault by fellow inmates. During his hospitalization, he underwent a left-sided craniectomy for decompression followed by placement of an intraventricular cathether for subsequent hydrocephalus. His clinical course was complicated by gram negative meningitis and multiple cerebral infarcts. He ultimately sucuumbed to complications of his head injuries on his 13th hospital day. Postmortem toxicological examination showed only the presence of the therapeutic agents morphine (blood 0.63 mg/L), midazolam (blood 0.09 mg/L) and metoclopramide (detected in urine only). The manner of death is homicide.

This case was reviewed in consultation with Department of Neuropathology. Their written consultation is incorporated into the above report.

(b)(6)

(b)(6) Medical Examiner

CERTIFICATE OF DEATH *(OVERSEAS)*

Acte de 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 Sociale
BTB Daraj, Rasoul, Jabal		Civilian	(b)(6)
ORGANIZATION Organisation	**NATION** (e.g. United States) Pays: Iraq	**DATE OF BIRTH** Date de naissance: (b)(6) 1981	**SEX** Sexe: [X] MALE [ ] FEMALE

RACE Race		MARITAL STATUS État Civil			RELIGION Culte		
[ ]	CAUCASOID Caucasique	[ ]	SINGLE Célibataire	[ ] DIVORCED Divorcé	[ ]	PROTESTANT Protestant	[X] OTHER (Specify) Autre (Spécifier)
[ ]	NEGROID Negroïde	[ ]	MARRIED Marié	[ ] SEPARATED Séparé	[ ]	CATHOLIC Catholique	
[X]	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 Domicile 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		Complications of blunt force head injuries	
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		
	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 [3]			

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 ausortées par des causes extérieures
[ ] 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)	
[X] HOMICIDE Homicide	SIGNATURE: (b)(6) DATE Date: 29 March 2006	AVIATION ACCIDENT Accident d'Avion [ ] YES Oui [X] NO Non

DATE OF DEATH (day, month, year) Date du décès (le jour, le mois, l'année)	PLACE OF DEATH Lieu de décès
(b)(6) 2006	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 défunt 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 médecin militaire ou du médecin 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: 4/17/06	SIGNATURE: (b)(6)

[1] State disease, injury or complication which caused death, but not mod
[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 n'ayant aucun rapport avec la maladie ou la condition qui a provoqué la mort.
[2] Préciser les conditions qui a contribué à la mort, mais n'ayant aucun rapport avec la maladie ou la condition qui a provoqué la mort.

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