

# ARMED FORCES INSTITUTE OF PATHOLOGY Office of the Armed Forces Medical Examiner

1413 Research Blvd., Bldg. 102 Rockville, MD 20850

301-319-0000



## AUTOPSY REPORT

Autopsy No. (b)(6)

AFIP No.: (b)(6)

Rank: Civilian

Name: RAZZAK, Abdul

ISN: (b)(6)

Date of Birth: pot known

Date of Death: (b)(6) 2007

Place of Death: Naval Hospital Guantanamo Bay, Cuba Place of Autopsy: Naval Hospital Guantanamo Bay, Cuba

Date and time of Autopsy: 30 DEC 2007 12:00 AM

Date of Report: 20 FEB 2008

Circumstances of Death: This detainee succumbed to multi-system organ failure complicating

metastatic colon cancer despite appropriate adjuvant therapy

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

Identification: presumptive identity is established by continuous maintenance in custody from time of apprehension

CAUSE OF DEATH: MULTISYSTEM ORGAN FAILURE DUE TO CARCINOMATOSIS

MANNER OF DEATH: NATURAL

## EXTERNAL EXAMINATION

The body is that of a normally developed, cachectic appearing male, 65 inches long, weighing an estimated 110 pounds, and older in appearance than the recorded age of 60 years. Lividity is posterior. Rigor is resolving. The body is cool to touch.

Gray-black hair up to 1/2 inch in length covers the scalp in the usual male pattern of distribution. The sclerae are icteric; the irides are brown; and the pupils are round, 0.3 cm and equal in diameter. The external auditory canals are clear; the ears are unremarkable. The nares are patent and the lips are atraumatic. The nose and maxillae are palpably stable. A gray-black moustache and full beard are present. The teeth are worn, and a prosthodontic appliance is appropriately positioned where teeth are missing.

The neck is straight, and the trachea is midline and mobile. The chest is symmetric. The abdomen is scaphoid. An obliquely oriented 1-1/2 inch scar is noted on the surface of the right lower abdominal quadrant. Additionally, grouped petechiae are present over the right lower quadrant. Grouped petechiae are also present over the back and are aggregated into three large groups ranging from 2 x 1 inch up to 14 x 5 inches. Within the groups, petechiae vary in configuration from individual punctate lesions to coalescent foci. The genitalia are those of a normal adult circumcised male. The testes are descended and free of masses. Pubic hair is present in the usual male distribution. The buttocks and anus are unremarkable.

The upper and lower extremities are symmetric. Petechiae are present in the left antecubital fossa. There are no palpable cords in the popliteal fossae. There is mild edema of the hands and feet.

## CLOTHING AND PERSONAL EFFECTS

The following clothing items and personal effects are present on the body at the time of autopsy:

white robe

## MEDICAL INTERVENTION

Sites of EKG lead placement shaved

EKG leads appropriately deployed over the precordium

Intravenous access site, dorsal right hand

Presumptive venipuncture site right antecubital fossa (taped 2 x 2 inch gauze sponge, right antecubital fossa

Hospital identification band on left wrist

Hospital identification band on right ankle

Medical chart entries documenting inpatient and outpatient care, including chemotherapy

For pain and nausea control agents identified, see "Toxicology"

## RADIOGRAPHS

A complete set of postmortem radiographs is obtained. The results are consistent with the findings described herein.

## INTERNAL EXAMINATION

## HEAD:

The galeal and subgaleal soft tissues of the scalp are free of injury. The calvarium is intact, as is the dura mater beneath it. The cerebral blood vessels are unremarkable. Clear cerebrospinal fluid surrounds the 1324 gm brain, which has unremarkable gyri and sulci. Coronal sections demonstrate sharp demarcation between white and grey matter, without hemorrhage or contusive injury. The ventricles are of normal size. The basal ganglia, brainstem, cerebellum, and arterial systems are free of injury or other abnormalities. There are no skull fractures. The atlanto-occipital joint is stable.

# NECK:

On layer-wise dissection of the anterior and posterior neck, there is no hemorrhage or other evidence of trauma. The anterior strap muscles of the neck are homogenous and red-brown. 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. There are 40 cc of straw-colored fluid in the right pleural space and 60 cc in the left. In excess of 600 cc of fluid is found in the peritoneal cavity. There is no excess fluid is in the pericardial sac. The organs occupy their usual anatomic positions.

## RESPIRATORY SYSTEM:

Dense adhesions envelop the lungs and tether them to the parietal pleural surfaces. The underlying lung surfaces are heavily anthracotic. The lungs are markedly edematous with deep purple congested cut surfaces: the right lung weighs 1145 gm, and the left lung weighs 782 gm. Nodular densities described as being seen in clinical (pre-mortem) imaging studies are not evident grossly.

## CARDIOVASCULAR SYSTEM:

The 270 gm 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 section of the vessels shows negligible focal atheromatous narrowing. The myocardial cut surface is uniformly dark brown. The valve leaflets are thin and mobile. The walls of the left and right ventricles are 1.0 and 0.3 cm thick, respectively. The endocardium is smooth and glistening. The aorta gives rise to three intact and patent arch vessels. The renal and mesenteric vessels are unremarkable.

## LIVER & BILIARY SYSTEM:

The 3400 gm liver is markedly distorted by multiple gray tan nodular masses, ranging from less than 1/16 inch up to 7 inches in maximal dimension. The residual hepatic parenchyma is focally compressed and stained yellow. The gallbladder contains a 50 cc of viscous green-black bile. There are no stones. The mucosal surface is green and velvety. The extrahepatic biliary tree is patent.

## SPLEEN:

The 108 gm spleen has a thickened fibrous capsule, with focal gray tan discoloration of the usual red-purple capsule. The parenchyma is maroon and congested, with distinct Malpighian corpuscles.

## PANCREAS:

The pancreas is firm and yellow, with prominent lobulation. No mass lesions or other abnormalities are seen.

## ADRENALS:

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 120 and 130 gm, respectively. The external surfaces are intact and smooth except for a 0.4 cm cortical cyst of the right kidney, with red-tan cut surfaces, uniformly thick cortices and sharp corticomedullary junctions. The pelves are unremarkable and the ureters are normal in course and caliber. White bladder mucosa overlies an intact bladder wall. The urinary bladder contains less than 200 cc of clear amber 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 in excess of 100 cc of partially digested food. The gastric wall is intact. The duodenum and loops of small bowel are unremarkable. On section of the recto-sigmoid colon, a 2.9 cm tumor mass is identified on the mucosal surface and grossly appears to extend into the surrounding pericolic tissue, and includes a firm 1.4 cm nodular structure grossly consistent with a lymph node. The remaining colon is unremarkable. The appendix appears to have been partially amputated in the remote past.

#### MUSCULOSKELETAL SYSTEM:

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

## MICROSCOPIC EXAMINATION

#### Central Nervous System (slides 5 & 6):

No significant histopathologic alteration

#### Liver (slide 1):

Metastatic adenocarcinoma, moderate-to-poorly differentiated

## Hematopoietic- Lymphoid incl. Spleen (slides 2 & 3):

- Regional lymph node positive for Metastatic adenocarcinoma, moderate-topoorly differentiated
- 2. Spleen: no significant histopathologic alteration

# Gastro-Intestinal (slides 2 & 8):

- Recto-sigmoid colon (site of primary tumor): moderate-to-poorly differentiated adenocarcinoma, with extension into pericolic adipose tissue
- Gastro-intestinal tissue remote from primary tumor:
  - a. No significant histopathologic alteration
  - b. Diffuse autolytic change

#### Heart (slide 4):

No significant histopathologic alteration

### Lung (slide 3):

No significant histopathologic alteration

## Genito-urinary (7):

No significant histopathologic alteration

#### Endocrine (slide 7):

No significant histopathologic alteration

## ADDITIONAL PROCEDURES

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

## AUTOPSY DIAGNOSES

# I. Evidence of Multi-system Organ Failure

- A. Hepatic failure
  - Scieral icterus
  - Features of bleeding diathesis
  - Ascites
- B. Cardiac failure
  - Edema of hands and feet
  - Bilateral pulmonary effusions

## II. Primary Colo-rectal Tumor

- A. Tumor: 2.9 cm in maximal dimension
- Tumor extends through mucosa into pericolic fat
- C. Evidence of regional lymph node involvement
- D. Stage IV: T4, N1, M1 (AJCC 6<sup>th</sup> edition)

# III. Metastatic Tumor Spread

- Multiple liver nodules identified at postmortem examination
- B. Clinical (radiographic) evidence of metastatic tumor nodules in the lungs

## IV. Pre-existing medical Conditions

Multiple dense pleural adhesions, bilateral

# V. Evidence of Medical Intervention

- A. Sites of EKG lead placement shaved
- EKG leads appropriately deployed over the precordium
- C. Appropriate EKG lead placement
- Intravenous access site, dorsal right hand
- E. Presumptive venipuncture site right antecubital fossa
- F. Hospital identification band on left wrist
- G. Hospital identification band on right ankle
- Medical chart entries documenting inpatient and outpatient care, including chemotherapy

# VI. Identifying Features

- Well healed surgical scar, right lower abdominal quadrant
- B. Dental bridge replaces teeth 7 10

# VII. Toxicology

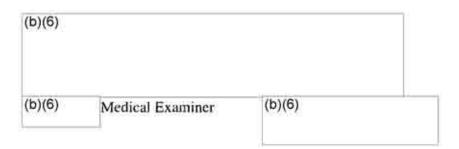
- Blood and vitreous are negative for ethanol
- B. Urine was screened for acetaminophen, amphetamine, antidepressants, antihistamines, barbiturates, benzodiazepines, cannabinoids, chloroquine, cocaine, dextromethorphan, lidocaine, narcotic analgesics, opiates, phencyclidine, phenothiazines, salicylates, sympathomimetic amines and verapamil by gas chromatography, color test or immunoassay. The following drugs were detected
  - acetaminophen was detected in the urine by immunoassay and confirmed by color test. No acetaminophen was detected in the blood at a limit of quantitation of 5 mg/L using immunoassay.
  - oxycodone was detected in the urine by immunoassay and confirmed by gas chromatography/mass spectrometry. The blood contained 0.10 mg/L of oxycodone as quantitated by gas chromatography/mass spectrometry
  - oxymorphone was detected in the urine by immunoassay and confirmed by gas chromatography/mass spectrometry. No oxymorphone was detected in the blood at t limit of quantitation of 0.05 mg/L using gas chromatography/mass spectrometry
  - morphine was detected in the urine by immunoassay and confirmed by gas chromatography/mass spectrometry. The blood contained 0.36 mg/L of morphine as quantitated by gas chromatography/mass spectrometry
  - promethazine was detected in the urine by gas chromatography and confirmed by gas chromatography/mass spectrometry. The blood contained 0.25 mg/L of promethazine as quantitated by gas chromatography/mass spectrometry

## VII Post-mortem Changes

No significant postmortem change is noted; mild postmortem changes consist of early corneal clouding, resolving rigor and posterior fixed lividity.

# OPINION

disseminated carcinomatosis. His liver was almost twice the mass expected for a man his size, and consisted predominantly of metastatic tumor nodules. Correspondingly, features of liver failure were prominent at autopsy and consisted of jaundice, ascites and features of a bleeding diathesis. Smaller tumor deposits identified on clinical roentgenograms were not detected at the postmortem exam. His last round of chemotherapy was on the 13<sup>th</sup> of December. While it is difficult to assess the toxic potential of the decedent's chemotherapy regimen, it is very clear, both from the extensive tumor burden and from the critical organ systems affected, that the overwhelmingly preponderant causal factor in this man's death was carcinoma. The levels of analgesic and antiemetic agents identified on toxicologic analysis of blood and urine indicate that all reasonable efforts were made to control pain and nausea. The cause of death is multisystem organ failure due to carcinomatosis. The manner of death is natural.



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