



# Office of the Boulder County Coroner

1777 6th Street • Boulder County Justice Center • Boulder, Colorado 80302 • (303) 441-3535

## AUTOPSY REPORT

Name: SHOELS, ISAIAH  
DOB: 08/04/80

Submit Dr: MEYER, JOHN E  
Age/Sex: 18/M

AUTOPSY NO: 99A 51

### AUTOPSY INFORMATION:

DATE OF DEATH: 4/20/99 @ 1645  
DATE OF AUTOPSY: 4/22/99 @ 1300  
JEFFERSON COUNTY CORONER'S CASE #99-0303

### FINAL DIAGNOSIS:

- I. Shotgun wound of left arm and chest
  - A. Entrance - posterior left arm with perforation of soft tissue of arm
  - B. Re-entry - left axilla
  - C. Path - perforates left pectoral musculature, penetrates left hemithorax through first rib, perforates sternum, disrupting anterior mediastinum with laceration of pulmonary artery and right atrium, perforates anterior right hemithorax, fractures right first and second ribs, perforates right pectoralis musculature, and exits right chest, impacting inner right arm
  - D. Direction - left to right, slightly downward, and slightly posterior to anterior
  - E. Spent shotgun slug and wadding retrieved from clothing
  - F. Right and left hemothoraces
- II. Status post Fontan procedure for tricuspid atresia and hypoplastic right ventricle (remote)
  - A. Intact Fontan anastomosis
  - B. Pericardial adhesions
  - C. Dilated right atrium
  - D. Micronodular cirrhosis, liver

### CLINICOPATHOLOGIC CORRELATION:

Cause of death of this 18-year-old male is a solitary shotgun wound of the chest.

*John E. Meyer, M.D.*  
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 John E. Meyer, M.D.  
 Pathologist  
 05/23/99

Autopsy: 99A 51

**EXTERNAL EXAMINATION:**

**AUTHORIZATION:** The autopsy is performed at the request of the Jefferson County Coroner's office. The identification has been previously made by the Jefferson County Coroner's office. Also submitted with the body are AP X-rays of the head, chest, abdomen. In attendance at the autopsy are Investigator Lonnie Lock from the Jefferson County Sheriff's office, Detective Kelly Quinones from the Denver Police Department, Detective Jim Sewell from the Denver Police Department, Detective Chuck Martinez from the Denver Police Department, and Tom Faure from the Boulder County Coroner's office. The autopsy is performed on 4/22/99 at 1300.

**CLOTHING:** The decedent is clothed in ankle-length white and blue athletic shoes which contain spotty areas of blood-stain. The shoes overlie white, above the ankle length cotton socks with gray toes and heels. There are dark green long corduroy pants secured by a brown belt. The pockets are empty. There are gray boxer-brief-type underwear which exhibit fecal incontinence. There is a short-sleeved black polo shirt which is extensively blood-soaked. Located on the posterior aspect of the left sleeve, 9 cm below the shoulder seam and 3 cm anterior to the arm seam is an irregular round to slightly oval ragged defect measuring 3 x 2.5 cm. On the anterior right chest area of the shirt, 9 cm below the inferior portion of the button placket and 8 cm to the left of the midline is a round to oval, 4 mm in diameter defect. Situated more laterally on the anterior left chest area of the shirt, 15 cm below the inferior border of the button placket and 20.5 cm to the left of the midline is a slightly oblong, 6 x 3 mm defect. The edges of these defects are rather ragged. Twenty-seven centimeters below the inferior border of the button placket and 9 cm to the right of the midline is another 1 to 2 mm defect with ragged edges. When the polo shirt is removed a dull gray metal deformed slug drops from within the shirt. This deformed slug measures 2.2 x 1.7 x 1.1 cm.

Beneath the polo shirt is a short-sleeved white T-shirt which is extensively blood-soaked anteriorly and over both sleeves. Located in the posterior aspect of the left sleeve, 11.5 cm below the shoulder seam and 8 cm anterior to the sleeve seam is an irregularly-shaped, round to oval 2.5 x 2.4 cm defect with ragged, irregular edges. No definitely identifiable soot is present around this defect. On the anterior lower aspect of the right sleeve, 18 cm below the shoulder seam and immediately adjacent to the sleeve seam is a 2.4 x 1.5 cm irregular ragged defect. No soot or stippling surround the wound. Located within the right sleeve and adherent to the inner surface of the cloth via dried blood is a fragment of plastic wadding measuring 1.9 x 1.8 x 1.7 cm. When the shirt is manipulated a second fragment of plastic wadding falls from the sleeve of the shirt. It measures 2.2 x 1.5 x 0.7 cm. On the left anterior chest area of the white T-shirt, 13 cm below the inferior border of the collar yoke and 13 cm to the left of the midline is an irregular, 1.7 x 1.1 cm defect with ragged edges. Two smaller defects are located adjacent to this larger defect in roughly the 4:00 to 6:00 positions. These measure 2 to 3 mm in diameter.

**EXTERNAL EVIDENCE OF INJURY:** Located in the posterior aspect of the left upper triceps area is an irregular, oval defect in the skin which measures 4.3 x 4 cm. The skin margins are ragged and irregular skin tags caused by small secondary lacerations are identified. No stippling surrounds the wound. No definite abrasion is seen on the surrounding skin. The wound of the upper left triceps area is located 9 cm below the tip of the left shoulder, and 11 cm posterior to the anterior midline of the right upper arm. This defect is in line with a gaping defect of the left axilla which measures 12 x 7.5 cm. In the depths of this wound there is abundant hemorrhagic soft tissue including muscle and connective tissue. Embedded in this soft tissue are particles of black fiber material consistent with the shirt. Irregular

Autopsy: 99A 51

**EXTERNAL EXAMINATION:** (Continued)

jagged skin edges surround the central defect. Some of the edges contain secondary lacerations which are somewhat triangular in configuration and point laterally. At the medial aspect of this defect is a 6 x 1.5 cm area of skin abrasion.

Located in the right lateral chest, 33 cm below the top of the head and 17 cm to the right of the midline of the anterior chest is an oblong defect in the skin measuring 2.7 x 1.2 cm. The margins of this wound are irregular and nonabraded. No soot or stippling surround the wound. On the medial aspect of the right upper triceps area, immediately juxtaposed to the right chest wound is an irregular area of linear and nonpatterned abrasion/contusion. The linear component of the abrasion is horizontally oriented and the area encompassed by the abrasion measures 4 x 2 cm. Soft tissue subcutaneous swelling is identified in this area.

Dried blood is noted in both nostrils and around the mouth as well as on the right side of the face and over the anterior chest.

Examination of the extremities and remainder of the body discloses no evidence of defense-type wounds.

**REMAINDER OF EXTERNAL EXAMINATION:** The unembalmed, well-developed and well nourished black male body measures 56 inches in length and weighs 111 pounds. There is early decomposition with a small amount of bloody purge in the mouth and nostrils and early blistering of the skin of the torso and extremities with early skin slippage. The scalp is covered by short black hair and no scalp trauma is identified. Both external auditory canals are patent and free of blood. The eyes are brown and the pupils equally dilated. Tardieu spots are present on the sclerae bilaterally and there is congestion of the conjunctival surfaces. Four cosmetic piercings are present in the left earlobe and two similar piercings are present in the right earlobe. The teeth are native and in good repair. The tongue is smooth pink-tan and granular. No buccal mucosal trauma is seen. The neck contains no palpable adenopathy or masses and the trachea and larynx are midline. The chest is symmetrical and contains no hair. In the midline of the chest and upper abdomen is a 30 cm in length well-healed linear scar. In the left upper quadrant is a scar in the form of an "x". It measures 2 x 2 cm. Just above the umbilicus and to the left of the midline is a well-healed 18 x 15 mm scar. The pubic hair is black and has a normal male distribution. The penis is circumcised. The scrotum and skin of the penis are distended by postmortem gas production. On the medial aspect of the left inner thigh are two vertically oriented scars, the most superior measuring 17 cm in length and the more inferior measuring 13 cm in length. The inferior scar extends from the medial mid thigh to the lower border of the knee and the upper scar from the left inguinal area to the mid thigh area. On the medial aspect of the left tibial area is a 6.5 x 1.2 cm well-healed scar. On the outer aspect of the left lower anterior tibial area is a 4 x 1 cm scar. In the left anterior antecubital fossa is a linear, 1 x 0.2 cm scarred area. On the dorsum of the distal forearm is a 1 x 0.5 cm well-healed scar.

**INTERNAL EXAMINATION:**

**AND SHOTGUN WOUND PATH:**

The anterior chest musculature is well-preserved. The sternum is irregularly transected at a point 4.5 cm below the sternal notch. This complete transection exhibits ragged bone edges. The right first and second ribs are fractured adjacent to the sternum and the left first rib is fractured. The anterior mediastinum is extensively hemorrhagic and the soft tissue has a shredded appearance. The gunshot wound enters the left side of the chest through the wound described in the left

# AUTOPSY REPORT

Name: SHOELS, ISAIAH

Page 4.

Autopsy: 99A 51

**INTERNAL EXAMINATION:** (Continued)

axilla. It traverses through the pectoralis musculature, and enters the left hemithorax through a fracture of the first rib. The wound tract then extends across the anterior mediastinum. The anterior aspect of the pulmonary artery is lacerated as is the anterior aspect of the right atrium. The defect in the pulmonary artery measures 2 cm in maximum dimension and the defect in the atrium 4 cm. The wound tract then proceeds to exit the mediastinum after passing through the anterior aspect of the right hemithorax. It exits in the first intercostal space, fracturing the right first and second ribs. The wound tract then tunnels through the right pectoralis musculature and exits the body through the previously described defect in the right chest. The overall direction of the wound is left to right, slightly downward, and slightly posterior to anterior.

**MEDIASTINUM:** The remainder of the mediastinal structures are characterized by marked fibrous adhesions between the epicardium and pericardium. The pericardial sac is essentially obliterated. There is approximately 100 cc of clotted and nonclotted blood in the right hemithorax and 150 cc in the left hemithorax. The abdominal contents are normally distributed and covered by smooth glistening serosa. No intra-abdominal accumulation of fluid or blood is seen. The pleural surfaces of the chest cavities are unremarkable.

**THYROID:** The 14 gm thyroid gland has a normal configuration. The cut sections are finely lobular and purple-red. No nodules are identified.

**TRACHEOBRONCHIAL TREE:** The tracheobronchial tree is lined by purple-gray mucosa. A small amount of hemorrhagic mucinous material is present in the lumen of the trachea.

**LUNGS:** The lingula of the left lobe is adherent to the pericardial surface via fibrous adhesions. The left lung weighs 150 gm, the right lung 150 gm. Cut sections of the pulmonary parenchyma disclose an intact spongy alveolar architecture. The intrapulmonary bronchi and vasculature are unremarkable.

**HEART:** The 425 gm heart exhibits extensive pericardial adhesion over all surfaces of the heart. The entire base of the heart is extensively shredded with shredding of the anterior right atrium and base of the right ventricle. The coronary arteries appear to be normally distributed. The left ventricular myocardium is homogeneous and tan-pink. The aortic valve contains three cusps and is unremarkable. The architecture of the right side of the heart is quite distorted. A fragment of synthetic graft material is present in the wall of the right atrium. The right atrium is markedly dilated. The anterior wall of the right atrium is shredded by the bullet tract as is the base of the left ventricle at the level of the aortic valve. The left atrium is dilated. The superior vena cava appears to empty into the coronary sinus. What appears to be the pulmonary outflow tract has been macerated by the gunshot wound as has the apparent anastomosis between the right atrium and the pulmonary artery. No definitely identifiable pulmonary valve is seen. The ventricular myocardium is brown-tan and is without obvious infarction or fibrosis. The left atrial endocardium is grey-white and thickened in appearance. There is calcification of the right atrium in the area where the synthetic patch is located. The aorta leaves the heart in the normal fashion. There is no evidence of a patent ductus arteriosus. The mitral and aortic valves contain no evidence of vegetation or thrombosis.

**SPLEEN:** The 125 gm spleen has a finely wrinkled purple capsule. The cut sections are purple and exhibit both white and red pulp. No intrinsic abnormality is seen.

Autopsy: 99A 51

**INTERNAL EXAMINATION:** (Continued)

**PANCREAS:** The pancreas is of normal size and shape. Cut sections are soft and finely lobular with a pink-tan color. The softening is consistent with decomposition.

**ADRENALS:** The adrenal glands are small but probably appropriate for the decedent's size. The golden yellow cortex surmounts a brown medullary area. No intrinsic abnormality is seen.

**KIDNEYS:** The 90 gm right kidney and 95 gm left kidney have a normal external appearance. The surfaces are smooth. The cut sections are pale tan. The corticomedullary junction is well demarcated and the renal papillae are sharply demarcated. The pelvocaliceal system is lined by gray-white mucosa which is unremarkable. The ureters are patent throughout their course to the bladder.

**LIVER:** The 850 gm liver has an abnormal external appearance. The surface is yellow-tan. Cut sections of the liver disclose a somewhat micronodular yellow-tan cross section. The cut sections are firm and suggest fibrosis.

**GALLBLADDER:** The gallbladder contains 5 cc of green-yellow bile. The gallbladder mucosa is smooth and velvety. No stones are identified. The cystic duct, right and left hepatic duct and common bile duct are patent throughout their course to the duodenum.

**BLADDER:** The bladder is empty. It is lined by gray-white mucosa which is unremarkable.

**PROSTATE:** The prostate gland is of normal size and shape. Cut sections are finely lobular and pink-tan with no nodularity. The seminal vesicles are unremarkable.

**TESTES:** The testes are of normal size and shape. The cut sections are spongy and tan. The adnexal structures are unremarkable.

**G.I. TRACT:** The esophagus is empty. It is lined by gray-white mucosa which is unremarkable. The stomach is essentially empty with the exception of several milliliters of cloudy tan material without particulate matter. The gastric mucosa is somewhat autolyzed. No evidence of hemorrhage or ulceration is seen. The small and large intestine are unremarkable and the appendix is present.

**LYMPHATIC SYSTEM:** Unremarkable.

**MUSCULOSKELETAL SYSTEM:** Unremarkable.

**AORTA AND VENA CAVA:** The aorta and vena cava are patent throughout their course. Only minimal atherosclerotic streaking is present in the aorta. The vena cava is unremarkable.

**SKULL AND BRAIN:** The scalp contains no evidence of hemorrhage or traumatic injury. No skull fracture is identified. There is no evidence of subdural, subarachnoid, or epidural hemorrhage. The 1150 gm brain has a normal external appearance. The cerebral vasculature is unremarkable. Multiple coronal sections of the cerebral hemispheres, brain stem and cerebellum are unremarkable. The cut sections of the brain are quite soft, consistent with decomposition change. No intrinsic abnormalities are identified.

# AUTOPSY REPORT

Name: SHOELS, ISAIAN

Page 6.

Autopsy: 99A 51

## INTERNAL EXAMINATION: (Continued)

**EVIDENCE:** Items turned over to the Jefferson County Sheriff's Department include samples of head and pubic hair, fingernail clippings, axillary hair, shotgun slug, two fragments of plastic shotgun wadding, metallic fragment from left axilla, one tube of blood, and all of the items of clothing.

## MICROSCOPIC DESCRIPTION:

All sections stained with H&E.

**HEART:** Sections of the ventricular myocardium contain intact cardiac muscle fibers. In some areas there is fatty infiltration of the myocardium. No evidence of infarction is seen. Sections from the right atrial wall contain intact muscle fibers.

**LUNGS:** The lungs contain an intact alveolar architecture. Some of the larger pulmonary arteries contain intimal fibroplasia and an increased amount of connective tissue around the blood vessels. The smaller branches of the pulmonary arterial system contain no definite evidence of hypertensive change. No thrombosis or inflammation are seen in the lung.

**SPLEEN:** There is mild autolysis of the spleen. White pulp is identified. No intrinsic abnormality is identified.

**THYROID:** The thyroid gland contains autolyzed follicles which vary somewhat in size and shape. Vascular congestion is identified.

**TESTES:** Examination of the testes discloses active spermatogenesis.

**LIVER:** Sections of the liver contain autolysis. The overall architecture of the liver is altered by a proliferation of fibrous tissue which separates nodules of liver parenchyma. No inflammation is seen in the connective tissue.

**PANCREAS:** There is extensive autolysis of the pancreas.

**KIDNEY:** There is autolysis of the renal tubular epithelium as well as the glomeruli. No intrinsic abnormalities seen.

**PROSTATE:** The prostate contains the usual gland structures with autolysis of the glandular epithelium.

**ADRENAL:** The adrenal gland is mildly autolyzed. No intrinsic abnormalities are identified.

**BRAIN:** Unremarkable.

**WOUNDS:** Sections from the wound of the inner right arm disclose fresh hemorrhage in the subcutaneous tissue. No foreign material is seen. Sections from the entrance wound of the left posterior arm exhibit foreign material consistent with synthetic fiber within the subcutaneous connective tissue. The skin of the right chest contains intact skin. In the subcutaneous tissue there is fragmented bone material as well as unidentified foreign material. Sections from the left axillary skin contain fresh subcutaneous hemorrhage. The tissue from the deep portion of this wound is composed of fibroadipose tissue with foreign material consistent with synthetic fiber. No definite soot is seen in any of the specimens.

**AUTOPSY REPORT**

**Name: SHOELS, ISIAH**

**Page 7.**

**Autopsy: 99A 51**

**MICROSCOPIC DESCRIPTION: (Continued)**

**END OF REPORT**