

MI HOSA Virtual State Leadership Conference

2021

Forensic Science Case Study

Instructions to Competitors

Teams have **ONE HOUR** to access the video on Tallo, read this case study, then write and upload ONE written response. Submissions must be submitted to Tallo by 2:00 PM. No late submissions will be accepted.

Case Study Analysis

Date: April 23, 2021

Location: Orlando, Florida

Time: 1230 hours

Sheriff's Report:

EMS was called on 4/22/21 at approximately 1821 hours by S. Staub, a boxing trainer for C. George, the decedent. The trainer stated that the decedent had a light lunch earlier that day, was fine during boxing practice but later complained of shortness of breath. At approximately 1750 hours, the decedent left practice and headed into the locker room. He was found lying on the floor, unresponsive, approximately 20 minutes later.

When EMTs arrived at 1826, the decedent had no vital signs and was asystolic. He was described as diaphoretic, with fixed, dilated pupils. Resuscitative efforts were unsuccessful and he was pronounced dead.

Later interviews with family revealed the decedent had previously been hospitalized for dehydration and complications of SCD after a boxing match. He was prone to dehydration issues, despite his trainer's reminders to get more water. He had also been complaining about his neck for the last month, but didn't want to see the doctor again until after his big match later this month.

SUMMARY REPORT OF AUTOPSY	
Name: C. George	Coroner's Case #: 74107
Date of Birth: 2.23.1995	Age: 24
Race: Black	Sex: M
Date of Report: 4.23.21	Body Identified by: S. Staub

EXTERNAL EXAMINATION - SUMMARY

Examination performed at Celebration Hospital at 1930 on 22Apr21. The body is clothed in boxing shorts. Hands are taped consistent with just having finished boxing.

The body is that of an unembalmed, well developed, well-nourished male appearing consistent with the recorded age of 24 years. The body weight is measured at 169 pounds. The body length is measured at 73 inches. The state of preservation is good in this unembalmed body. Rigor mortis is moderately advanced in the arms, legs, and jaw. Lividity is not identified. The chest and back are symmetrical with normal conformation. The neck is symmetrical and without masses or unusual mobility. Both upper and lower extremities are symmetrical throughout. The head, neck, and shoulders are not congested. There is no peripheral edema present. Personal hygiene is good. No unusual odor is detected as the body is examined. The hair is black and worn to a short length. It represents the apparent natural color. There is no facial hair. The body hair is of normal male distribution. The pupils are round, regular, equal, and somewhat dilated. The sclerae are normal in color. The orbital and periorbital tissues are unremarkable. The conjunctival surfaces are not remarkable. The irides are brown in color. The mouth shows the teeth of upper maxilla and mandible to be in a fair state of repair. The gums are normal in appearance. The oral cavity is normal. There are no injuries to the lip or tongue. The nose is symmetrical and the air passages are open. The external ears are normal in appearance and without injury. The male breasts are normal. Examination of the skin reveals no significant external lymphadenopathy.

INTERNAL EXAMINATION – SUMMARY

BODY CAVITIES: The body is opened through the customary “Y” shaped incision. Subcutaneous fat is normally distributed, moist, and bright yellow. The musculature through the chest and abdomen is rubbery, maroon, and shows no gross abnormality. The sternum is removed in the customary fashion. The organs of the chest and abdomen are in normal position and relationship. The diaphragms are intact bilaterally.

PARIETAL PLEURA: Smooth, glistening intact membrane without associated adhesions or abnormal effusions.

PERICARDIUM: Is a smooth, glistening, intact membrane, and the pericardial cavity, itself, contains the normal amount of clear, straw-colored fluid.

PERITONEUM: Smooth, glistening membrane in both the abdominal and pelvic cavities. The peritoneal cavity contains no abnormal fluid or adhesions.

HEART: Weighs 550 grams. It has a normal configuration and location. There are no adhesions between the parietal and visceral pericardium, and the latter is a smooth, glistening, fat laden characteristic membrane. The coronary arteries arise and distribute normally with no significant atherosclerosis. The coronary ostia are normally located and widely patent. The chambers and atrial appendages are unremarkable. Cardiomegaly is noted with concentric left ventricular hypertrophy. The endocardium is a smooth, gray, glistening, translucent membrane uniformly. The myocardium is intact, rubbery, and red-tan, with the left ventricle measuring 2.1 cm and the right ventricle measuring 0.3 cm. The papillary muscles and chordae tendineae are intact and unremarkable. The aorta (arch, thoracic and abdominal) and its major branches are unremarkable. The vena cava and major tributaries are widely patent. Sections of the left and right ventricular walls are taken. Myocardial fibers appear viable without necrosis or inflammation.

NECK ORGANS: Musculature is normal, rubbery, and maroon, and the organs are freely movable in a midline position. The tongue is intact and normally papillated, without evidence of tumor or hemorrhage. The hyoid bone is intact. The cartilaginous structures forming the larynx are intact and without abnormality. The thyroid gland is symmetric, rubbery, light tan to maroon, and in its normal position without evidence of neoplasm. The epiglottis is a characteristic plate-like structure which shows no evidence of edema, trauma, or other gross pathology. The larynx is comprised of unremarkable vocal cords and folds, is widely patent without foreign material, and is lined by a smooth, glistening membrane. There are no petechiae of the epiglottis, laryngeal mucosa, or thyroid capsule.

THYMUS: No significant tissue is identified grossly.

BRAIN AND MENINGES: The scalp is opened through the customary intermastoid incision and shows no trauma. The calvarium is removed through the use of an oscillating saw and is intact without evidence of osseous disease. The brain weighs 1460 grams. Dura and leptomeninges are unremarkable without evidence of trauma. Cranial nerves and circle of Willis arise and distribute normally and show no significant pathology. Externally, the brain is normally configured and symmetric, and multiple serial sections of cerebral hemispheres, midbrain, pons, medulla, and cerebellum show no gross pathological change apart from moderate congestion. The ventricular system is also symmetric and unremarkable. The base of the skull is intact without osseous abnormality. Sectioning shows no specific pathologic changes of the parenchyma.

RESPIRATORY SYSTEM: The right lung weighs 710 grams and the left lung weighs 700 grams. Visceral pleurae are smooth, glistening, and intact with minimal anthracosis and no bleb formation. The overall configuration is normal. The trachea is widely patent and lined by characteristic pink membrane. Likewise, the major bronchi and bronchioles bilaterally are patent, normally formed, and contain no significant occlusive

material. The pulmonary arterial tree is free of emboli or thrombi. The parenchyma is congested, varies from pink-tan to dark purple, and exudes moderate amounts of blood and clear, frothy fluid from its cut surfaces. There is no evidence of consolidation, granulomatous, or neoplastic disease. Hilar lymph nodes are within normal limits with relation to size, color, and consistency.

GASTROINTESTINAL TRACT: The esophagus shows an unremarkable mucosa, a patent lumen, and no evidence of gross pathology. The esophagogastric junction is unremarkable. The stomach is of normal configuration, is lined by a smooth, glistening, intact mucosa, has an unremarkable wall and serosa, and contains approximately 120 ml of green homogenate which has passed to the duodenum. The duodenum, itself, is patent, shows an unremarkable mucosa and no evidence of acute or chronic ulceration. Jejunum and ileum are unremarkable and contain soft brown fecal material. There is no Meckel's diverticulum. The ileocecal valve is intact and unremarkable. The appendix is identified. The colon is examined segmentally and shows no evidence of neoplasm or trauma. There are no diverticula. Anus and rectum are unremarkable.

LIVER: Weighs 2050 grams. It is of normal configuration, rubbery, tan, and intact. Cut surface shows no pathology. The sinusoids appear dilated and contain no cirrhosis or active lobulitis.

GALLBLADDER: Lies in its usual position, contains liquid bile, no calculi, and shows a normal mucosa. The biliary tree is intact and patent without evidence of neoplasm or calculi.

PANCREAS: Lies in its normal position, shows a normal configuration is pink-tan and characteristically lobulated with no apparent gross pathology.

SPLEEN: Weighs 310 grams. The capsule is intact. The organ is rubbery, maroon, and shows characteristic follicular pattern.

ADRENALS: Lie in their usual location, show yellow cortices and tan to gray medullae.

KIDNEYS: The right kidney weighs 240 grams and the left weighs 240 grams. Both are configured normally with no abnormality. The capsules strip with ease bilaterally and the subcapsular surfaces are smooth. Sections show the organs to be moderately congested with unremarkable cortices, medullae, calyces and pelves. Ureters and blood vessels are patent and unremarkable.

URINARY BLADDER: Contains no urine. Its serosa and mucosa are unremarkable.

RIBS: Intact.

PELVIS: Intact.

MALE GENITALIA: The prostate is symmetric, rubbery, gray-tan, and of normal size. The seminal vesicles are unremarkable. The prostatic urethra is unremarkable. The testes are bilaterally present and show no evidence of tumor, trauma, or inflammation. The investing membranes are unremarkable as is the epididymis.

VERTEBRAE: There is a fracture of the fifth cervical vertebra involving the right C5 lamina and C5 pedicle. The spinal cord appears intact. Acute hemorrhage is noted in the paravertebral soft tissues extending from C3 to C7. There is no intraspinal canal hemorrhage noted.

BONE MARROW: Moist and dark red. Unremarkable.

HISTOLOGIC REPORT:

Representative specimens from various organs are preserved in 10% formalin and reviewed. Sickled erythrocytes are noted in heart, brain, lung, liver, pancreas, spleen, and kidney tissues.

LABORATORY ANALYSIS REPORT:

BLOOD – ETHANOL/ALCOHOL – not detected

BLOOD- Lidocaine – detected (not confirmed)

BLOOD- Etomidate – detected (not confirmed)

BLOOD- No indication of illegal drug use

