



## Forensic Science Sample Case Study

**Scenario Note:** Each case study is unique. The case study may include photos and/or a manikin, and or/set props, instead of or in addition to a written medical examiner's report and/or external examination.

### **Police Report by Officer Gold:**

At 0734 hours a 911 call was placed from the residence of Fred Mars. He states that a guest in his home, Red Fisher, is on the living room floor and unresponsive.

Upon arrival by the EMS and Officers Gold and Freeman at 0739 hours, the decedent was found on the floor....

On 6/25/2016, the decedent reportedly went to a party at the home of Fred Mars at 3400 Main Street. It is reported that the decedent was depressed and angry at having been fired from his job that day, and was allegedly using heroin and cocaine, as well as some other drugs. Sometime between 2300 and 2400 hours, Fred Mars and the decedent had a physical altercation, and according to Mars "He collapsed. I figured I knocked him out, or he passed out. I wasn't sure which. I rolled him over onto his back and he didn't wake up. I figured he would be angry when he woke up so I left him there and went to my girlfriend's house. When I got home after seven this morning, Red was still on the floor in the same position I left him, and wouldn't wake up. That's when I called 911."

### **Medical Examiner's Report:**

**Date:** June 26, 2016

**Name:** Red Fisher  
**Address:** 8916 Ashcroft Ave,  
Nashville, Tennessee  
**Sex:** M  
**Age:** 20  
**DOB:** 1-23-96  
**Height:** 67  
**Weight:** 110  
**Eyes:** Brown  
**Hair:** Black  
**Teeth:** Own  
**Condition:** Viewable

**Time Autopsy Began:** 1005 hours

## **EXTERNAL EXAMINATION:**

6/26/2013, 1005 hours. The body is that of an unembalmed adult male who appears the stated age of 20 years. The body is identified by toe tags. The body weighs 110 pounds, measures 67 inches in length and is lean and fairly well nourished. There is no abnormal skin coloring or pigmentation. No tattoos are present. Rigor Mortis is well developed in the limbs and jaw. Livor mortis is present, not fixed, and distributed over the posterior surface of the body as well as the palms of the hands. The liver temperature is 93<sup>0</sup>F.

There are multiple abrasions and lacerations of the upper extremities and hands. The right shin shows a red purple contusion. The head, which is normocephalic, is covered by brown hair. There is no balding. Examination of the eyes reveals pupils with green irides and sclerae that show no injection or jaundice. There are no petechial hemorrhages of the conjunctivae of the lids or the sclerae. The oronasal passages are unobstructed. The nasal septum is intact and without inflammation. Upper and lower teeth are present. The neck is unremarkable. There is superficial chest deformity and a red purple contusion over the right anterior ribs. There is no increase in the anterior posterior diameter of the chest. There are no scars of the chest or abdomen. The abdomen is flat. The genitalia are those of a circumcised adult male. There is no anal or genital trauma. There are no needle tracks identified on the arms or neck. Edema of the extremities is not present. Joint deformities, crepitation and abnormal mobility are not present.

## **CLOTHING:**

The body is unclothed when received. Accompanying the body are the following items:

- 1) A pair of black shorts.
- 2) A tee shirt.
- 3) A pair of socks.

## **INTERNAL EXAMINATION:**

The body cavities are entered through a Y shaped incision. No foreign material is present in the mouth or upper airway. No lesions are present nor is trauma of the gingiva, lips or oral mucosa demonstrated. Both hyoid bone and larynx are intact without fractures. No hemorrhage present in the adjacent throat organs. There are no prevertebral fascial hemorrhages. The pleural cavities contain a small quantity of straw colored fluid. The right chest wall has fractures of ribs six and seven anteriorly. The parietal pleurae are intact. The lungs are well expanded. Soft tissues of the thoracic and abdominal walls are well preserved. There is no recent evidence of injury to the chest and abdominal walls other than the contusion on the right chest wall and liver temperature mark. The organs of the abdominal cavity have a normal arrangement. None are absent. There is no fluid collection of the abdomen. The peritoneal cavity is without evidence of peritonitis. There are no adhesions.

## **TRAUMATIC INJURIES TO HANDS AND UPPER EXTREMITIES:**

1. On the lateral aspect of the right distal forearm, adjacent to the wrist, there is a 3/4 x 1/2 inch abrasion on the ulnar surface, red-brown in color, nonpatterned.
2. On the lateral or outer aspect of the left forearm there are multiple abrasions both linear and one that is approximately triangular measuring 3/4 x 1/2 inch; they are all brown to red-brown in color and antemortem; the longest linear abrasion is 3/4 inch in length.
3. On the dorsal surface of the right hand there are fresh bruises (red-purple in color) and fresh red-brown abrasions.

## CARDIOVASCULAR SYSTEM:

The aorta is elastic and of even caliber throughout with vessels distributed normally from it. It shows a minimal lipid streaking. There is no tortuosity, widening or aneurysm of the aorta.

Within the pericardial sac there is a minimal amount of serous fluid. The heart weighs 310 grams. It has a normal configuration. There are a few petechial hemorrhages of the posterior epicardium. The chambers are normally developed. The valves are thin, leafy and competent. There is no endocardial discoloration. The chambers are without mural thrombosis. There is no scarring or hemorrhage of the apices of the papillary muscles. There are no defects of the septum. The great vessels enter and leave in a normal fashion. The ductus arteriosus and foramen ovale are obliterated. The coronary ostia are widely patent. The right coronary artery is the dominant vessel. There is no coronary artery atherosclerosis. There are no focal lesions of the myocardium.

## RESPIRATORY SYSTEM:

There is no edema of the larynx. There are no fractures of the laryngeal cartilages. Scant mucoid fluid is found in the upper respiratory passages. The mucosa is intact. The right lung weighs 500 grams and the left lung weighs 350 grams. The lungs are subcrepitant and there is dependent congestion. The visceral pleurae are smooth and intact. The parenchyma is mildly congested. The pulmonary vasculature is without thromboembolism.

## GASTROINTESTINAL SYSTEM:

The esophagus is intact throughout. The stomach is moderately distended by gas. It contains approximately 200cc of dark fluid. The mucosa is intact without hemorrhage or ulceration. No medication or capsular material is identified. The external appearance of the small intestine and colon is unremarkable. The small intestine and colon are opened along their anti-mesenteric border and no mucosal lesions are present. The appendix is present. The pancreas occupies a normal position. The parenchyma is lobular and firm. The pancreatic ducts are not ectatic. There is no parenchymal calcification.

## HEPATOBIILIARY SYSTEM

The liver weighs 1860 grams. It is red brown. The capsule is thin. The consistency is soft and the cut surface is smooth. There is a normal lobular arrangement. The gallbladder is present and its wall is thin and pliable. It contains no stones and a moderate quantity of bile is present. There is no obstruction or dilatation of the extrahepatic ducts. The periportal lymph nodes are not enlarged.

## URINARY SYSTEM:

The right kidney weighs 120 grams and the left kidney weighs 140 grams. The kidneys are normally situated and the capsules strip with ease revealing a surface that is smooth and dark purple. The corticomedullary demarcation is obscured by congestion. The pyramids are not remarkable. The peripelvic fat is not increased. The ureters are without dilatation or obstruction. The urinary bladder is unremarkable. The bladder contains approximately 30cc of urine.

## GENITAL SYSTEM

The prostate is without enlargement or nodularity. Both testes are in the scrotum and without trauma.

## HEMOLYMPHATIC SYSTEM

The spleen weighs 250 grams. The capsule is smooth and intact. The parenchyma is firm and dark red. There is no increase in the follicular pattern. Lymph nodes throughout the body are small and inconspicuous.

## ENDOCRINE SYSTEM:

The thyroid gland is unremarkable. The adrenals are intact without necrosis or hemorrhage. The thymus has the usual appearance for the age. The pituitary gland is of normal size.

## CENTRAL NERVOUS SYSTEM:

There is no hemorrhage beneath the scalp, into the orbits nor into the temporal muscles. The external periosteum and dura mater are stripped showing no fractures of the calvarium or base of the skull. There are no intracranial hematomas. There are no tears of the dura mater and no epidural, subdural or subarachnoid hematoma. The brain weighs 1540 grams. The leptomeninges are thin and transparent. A normal convolutionary pattern is observed. Coronal sectioning demonstrates a uniformity of cortical gray thickness. The cerebral hemispheres are symmetrical. There is softening discoloration or hemorrhage of the white matter. The basal ganglia are intact. Anatomic landmarks are preserved. The ventricular system is symmetrical without dilatation or distortion. Pons, medulla and cerebellum are unremarkable. There is no evidence of uncal or cerebellar herniation. Vessels at the base of the brain have a normal pattern of distribution. There are no aneurysms. The cerebral arteries are without arteriosclerosis.

SPINAL CORD: The spinal cord is not dissected.

## HISTOLOGIC SECTIONS:

Representative specimens from various organs are preserved on 10% formalin and placed in the storage jar.

## TOXICOLOGY DATA:

<b>Blood Alcohol:</b>	
<b>Ethanol</b>	Negative
<b>Acetone</b>	Negative
<b>Isopropranol</b>	Negative
<b>Methanol</b>	Negative
<b>Drug Screen:</b>	
<b>Amphetamines</b>	Negative
<b>Antidepressants</b>	Negative
<b>Barbiturates</b>	Negative
<b>Benzodiazepines</b>	<b>Positive</b>
<b>Cannabinoids</b>	<b>Positive</b>
<b>Cocaine</b>	<b>Positive</b>
<b>Lidocaine</b>	Negative
<b>Methadone</b>	Negative
<b>Phencyclidine</b>	Negative
<b>Phenothiazines</b>	Negative
<b>Propoxyphene</b>	<b>Positive</b>
<b>Acetaminophen</b>	Negative
<b>Oxycodone</b>	<b>Positive</b>

**Pentanyl**

Negative

**Quantitation:**

**Cocaine**

**0.05 micrograms/ML**

**Morphine**

**0.5 milligrams/ML**

**Hydrocodone**

**1.2 milligrams/L**

**Oxycodone**

**0.49 micrograms/ML**

**CASE STUDY OPINION**

**Time of Death Range:** \_\_\_\_\_

**Immediate Cause of Death:** \_\_\_\_\_

**Manner of Death:** \_\_\_\_\_

**Other Conditions contributing to the immediate cause of death:**

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**Evidence to support opinion:**

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