

H-5 NECROPSY REPORT

DATE August 8, 1964
 NAME Cavanaugh, John William
 ADDRESS
 AGE 34

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SERVICE: Surgery Out Clinic HOSPITAL NO. 63-6350 PATHOLOGY NO. A-64-338

Age: 34 Male White
 Occupation: Student
 Restrictions: None

Marital Status: Married
 Birthplace: Not stated
 Hours Post Mortem: 2.0

Autopsy performed by Michael E. Korn, M. D., on 8 August 1964 at 1500

ANATOMICAL DIAGNOSES:

1. Multiple gunshot wounds of trunk, neck, and left arm with: E981.6
 - a. Perforation of left common iliac artery
 - b. Perforations (2) of spleen
 - c. Perforations (6) of jejunum
 - d. Perforations (2) of lower lobe, left lung
 - e. Perforations (2) of upper pole, left kidney
 - f. Perforation of left leaf of diaphragm
 - g. Comminuted fracture, severe, proximal portion of eighth rib, left
 - h. Lodgment of bullets in eighth thoracic vertebra and sacrum
 - i. Hemothorax, left, mild
 - j. Massive hemoperitoneum
2. Multiple, diffuse, skin abrasions and contusions E936
3. Old peptic ulcer, duodenum Y03.9
4. Myocardial hypertrophy 434.4
5. Chronic granulomatous inflammation, patchy, mild, cause undetermined, lung and hilar lymph nodes 139
6. Mild, diffuse, degenerative changes in cerebrum and cerebellum 355

CASE SUMMARY:

Clinical Summary:

This 34 year old white man was dead on arrival in the Surgical Out Clinic, University Hospitals, Iowa City, Iowa, at approximately 1300 DST on 8 August 1964. He was said to have incurred multiple gunshot wounds a short time earlier during an altercation in an Iowa City restaurant.

The body was identified to me as that of John William Cavanaugh by Dr. George D. Callahan, Johnson County Medical Examiner.

Pathological Summary with Cause of Death:

The significant autopsy abnormalities were related to the gunshot wounds and the bruises and scrapes of the skin.

Detailed descriptions and analyses of the bullet wounds are included in the body of this protocol. None of the skin wounds was associated with powder burns. The body was struck by four bullets, three of which were re-

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covered. The four bullets produced a total of seven skin wounds. In general, the nature of the bullet wounds indicated that the shots were fired from widely varying angles, viz. (1) the front, (2) the back, and (3) from the left side and back. Additionally, the shots from the left side and back had an oblique course (left to right) from above downward.

The bullet (No. 3) which entered the front of the abdomen in the left lower side perforated several loops of the small intestine, perforated one of the large arteries (left common iliac artery), coming off the end of the aorta, and lodged in a bone (sacrum) at the tip of the spine. There was massive bleeding into the abdominal cavity from the perforated artery, and death was attributed to this hemorrhage.

Bullet No. 1 caused three skin wounds and had the longest course. It passed from left to right through the skin and soft tissues of the left upper arm behind the bone (obliquely from above downward) and entered the left side of the chest. The wound on the inner surface of the left arm and the wound in the left side of the chest were "kissing" wounds. This bullet perforated the lower part of the left lung, passed through the diaphragm, two surfaces of the spleen (directly beneath the diaphragm), and two surfaces of the left kidney. This bullet came to rest in the fat adjacent to the left kidney.

Bullet No. 2 was fired from the back, shattered the eighth rib (left) near the midline and lodged in the eighth thoracic vertebra.

Bullets Nos. 1, 2, and 3 were recovered. A fourth bullet not recovered and arbitrarily designated as bullet X, was fired from the front and caused two skin wounds. It entered the neck, missed vital structures, struck the bony spine, and was deflected to the right. It exited the body through the skin wound on the back of the right shoulder.

There were scattered bruises and scrapes on the shoulder arms, and right lower leg. The distribution and appearances of these showed no pattern; the bruises and scrapes were relatively minor injuries.

Incidental autopsy abnormalities included an old peptic ulcer in the first part of the small intestine, enlargement of the heart, very mild, old inflammation of the lungs, and mild, diffuse, degenerative change in cerebrum and cerebellum.

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GROSS AUTOPSY FINDINGS

REGIONS:

General Inspection:

The body is that of a middle-aged man weighing an estimated 180-185 pounds and measuring 180 cm. (71 inches) in length. The scalp is covered by a large amount of bushy, grayish-black hair. The eyebrows are bushy and black. The pupils are of equal size and measure 5 mm. in diameter. There are no external ocular hemorrhages. The nostrils are filled with large amounts of tenacious, mucoid material. The oral cavity is normal, and there are many fillings in both upper and lower teeth.

The body shows the presence of scattered old and new contusions and abrasions. The contusions and abrasions have an apparently patternless arrangement. There are many recent confluent contusions and abrasions on the anterior surface of the right shoulder. The largest measures 1.2 cm. in greatest dimension. These are surrounded by satellite areas of subcutaneous, bluish discoloration. Some of these contusions are linear, cross each other perpendicularly, and have a serrated appearance. On the anterior aspect of the left shoulder, 4 cm. proximal to the axilla, there are smaller areas of confluent, recent, subcutaneous, bluish discoloration. In the anteromedial portion of the left upper arm, 17 cm. distal to the tip of the shoulder, there are similar areas of subcutaneous, recent, bluish discoloration.

There are scattered accumulations of dried, matted blood on the anterior thoracic wall in the midline. There are larger, similar accumulations at the base of the neck anteriorly and anterolaterally on the right side and about the right ear. Clotted blood is present on the dorsal and ventral aspects of all fingers of the right hand and the thumb and index finger of the left hand.

There is a transverse, recent, superficial abrasion at the inferior margin of the right patella measuring 3.0 x 1.2 cm. There is an old, depressed, semilunar scar several centimeters distal to this abrasion. At a point 4 cm. medial to the lateral malleolus of the right ankle there is an area of recent superficial excoriation measuring 1.5 x 0.6 cm. There are no missing members.

Description of bullet wounds: (external inspection of body) (see diagram #1)

The numbers used to designate the various wounds were arbitrarily assigned and were not intended to suggest a sequence in which the wounds were incurred.

Black and white photographs were taken of all wounds before and after blood was washed off.

#1: Location:

left lower abdominal quadrant at the level of the inferior margin of the umbilicus. 14 cm. lateral to the midline of the umbilicus. 5.5 cm. superior and slightly medial to the left iliac crest. 13 cm. inferior to the left anterior inferior costal margin.

Size:

5 mm. (transverse) by 8 mm. (longitudinal)

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- Description: slightly triangular to oval. Sizes given above include a slightly beveled margin at 1700, at which point the wound is more superficial. Central hole contains hemorrhagic material, probably subcutaneous fat. Circumferential bluish discoloration in subjacent subcutaneous tissue; this halo measures 5 mm. in width. No powder burns.
- #2. Location: posterolateral aspect of left upper arm. 15 cm. proximal to the tip of the olecranon process. 12.5 cm. proximal to the lateral condyle of the humerus.
- Size: 9 mm. by 8 mm.
- Description: circular to slightly oval. No powder burns.
- #3. Location: medial aspect, middle third, left upper arm. 11.5 cm. proximal to medial condyle of humerus. 8 cm. inferior to apex of left axilla.
- Size: 1 cm. in greatest diameter
- Description: stellate with irregular margins. Hemorrhagic material extrudes slightly. No bevel. No powder burns.
- #4. Location: Lateral aspect of left hemithorax (midaxillary line). 11.5 cm. inferior to apex of the left axilla. 14.5 cm. proximal to inferior lateral costal margin. 6 cm. posterior to anterior axillary line. Superior margin of tenth rib.
- Size: 1.4 cm. (longitudinal) by 1 cm. (transverse)
- Description: superior margin has straight edge and is beveled superficially more than the inferior margin. Inferior margin has circular outline with undermined edge. Gaping wound. No powder burns.
- #5. Location: anterior aspect of neck, few mm. to right of midline. 2 cm. inferior to tip of thyroid cartilage. 6.5 cm. proximal to upper margin of suprasternal notch.
- Size: 8 mm. (transverse) by 6 mm. (longitudinal)
- Description: circular with smooth margin. Filled with clotted blood. No powder burns.
- #6. Location: near superior medial margin of right scapula. Above scapula 10 cm. medial to bony tip of right shoulder.

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DIAGNOSIS

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Size: 6 cm. from midline
8 mm. by 5 mm.

Description: stellate with ragged margins. Slightly flatter upper border with mild beveling at 1600. No powder burns.

#7. Location: inferior medial aspect left scapula. 7 cm. lateral to midline. 4 cm. proximal to inferior tip of scapula.

Size: 5 mm. by 7 mm.

Description: elliptical with inverted edges. Lateral border and superolateral border superficially beveled. Circumferential bluish discoloration of subcutaneous tissue; this halo varies from 3 mm. to 5 mm. in width. No powder burns.

Additional measurements:

Wounds #1 and #4 lie 27 cm. apart.
Wounds #6 and #7 lie 20.5 cm. apart.
Wounds #4 and #7 lie 21 cm. apart.

Three bullets (jacketed and appearing to be of approximately .25 caliber) were found at necropsy. They were arbitrarily designated as #1, #2, and #3 by inscription of the appropriate number of linear marks on their respective bases. The bullets were given to Dr. George D. Callahan, Johnson County Medical Examiner, after removal.

The paths of the three recovered bullets are indicated below. A fourth missile, not recovered and arbitrarily designated as bullet X, caused wounds #5 and #6. A roentgenogram made with a portable X-ray machine failed to show the presence of bullet X.

Bullet #1: Entered lateral aspect of left arm through wound #2. Traversed soft tissues of left arm posterior to humerus. Exited left arm through wound #3. Entered left side of thorax through wound #4. Traversed lower lobe of left lung obliquely. Perforated left leaf of diaphragm. Traversed both surfaces of spleen. Traversed both anterior and posterior surfaces of superior pole of left kidney. Lodged in perirenal fibroadipose connective tissue adjacent to upper pole of left kidney. Bullet recovered.

Bullet #2: Entered through wound #7 in left side of back.

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Traversed soft tissues of left of chest wall posteriorly
 Produced severely comminuted fracture of eighth rib on
 left side 6 cm. from midline.
 Lodged in left side of body of eighth thoracic vertebra.
 Bullet recovered.

Bullet #3: Entered and traversed anterior abdominal wall in left
 lower quadrant through wound #1.
 Perforated three segments (six holes) of distal jejunum.
 Perforated left common iliac artery 4 cm. from aortic
 bifurcation.
 Lodged in left side of sacrum. Bullet recovered.

Bullet X: Entered anterior aspect of neck through wound #5.
 Traversed neck to right of midline, but missed carotid
 sheath.
 Deflected from right side of cervical vertebra.
 Exited through wound #6 in back of right shoulder.
 Bullet not recovered.

According to this interpretation, the following wounds
 are entrance wounds:
 #2 (posterolateral aspect of left arm)
 #1 (left lower quadrant of abdomen)
 #7 (back)
 #5 (anterior aspect of neck)

Wound #4 is a re-entry wound (left side of chest) of
 the bullet which traversed the left arm.

The following wounds are exit wounds:
 #6 (back of right shoulder)
 #3 (medial aspect of left upper arm)

All wounds except #3 and #5 were covered by clothing.

Interpretative approximations of spatial relationships
 of bullet paths (and wounds) with reference to three planes:

Wound #1:	Frontal plane	20°	
	Mid-sagittal plane	70°	Bullet #3
	Horizontal plane	15°	
Wound #2:	Frontal plane	35°	
	Mid-sagittal plane	30°	Bullet #1
	Horizontal plane	60°	

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Wound #3:	Frontal plane	35°	
	Mid-sagittal plane	30°	Bullet #1
	Horizontal plane	60°	
Wound #4:	Frontal plane	35°	
	Mid-sagittal plane	30°	Bullet #1
	Horizontal plane	60°	
Wound #5:	Frontal plane	90°	
	Mid-sagittal plane	0°	Bullet X
	Horizontal plane	0°	
Wound #6:	Frontal plane	30°	
	Mid-sagittal plane	40°	Bullet X
	Horizontal plane	15°	
Wound #7:	Frontal plane	90°	
	Mid-sagittal plane	0°	Bullet #2
	Horizontal plane	0°	

Abdomen: The anterior abdominal wall is scaphoid, heavily muscled, and the panniculus adiposus averages 3 cm. in thickness. There are no scars. The soft tissue wound in the left lower quadrant has previously been described. There are no herniae in the anterior abdominal wall. The right and left leaves of the diaphragm extend to the fourth and fifth intercostal spaces, respectively.

The abdominal and pelvic organs retain their normal relationships, sizes, and proportions, with the exception that the abdominal cavity contains between 2500-3000 cc. of liquid and partially clotted blood. There are no adhesions. The peritoneal surfaces are smooth and glistening throughout.

The retroperitoneal structures retain their normal relationships, sizes, and proportions except for recent hematoma about the superior pole of the left kidney, smaller hematomata about the cecum and in the right colic gutter, and about the tail of the pancreas.

Thorax: The thoracic cage is symmetrical, and there is a mild increase in the antero-posterior diameter. The structures of the thoracic wall are normal except for the proximal portion of the eighth rib on the left side posteriorly; at a point 6 cm. from the midline the eighth rib is shattered. There are numerous, jagged fragments of bone and hematoma in this region. The parietal pleura bulges anteriorly about a jagged tear.

The right pleural cavity is normal. The left pleural cavity contains an estimated 50 cc. of recently extravasated blood, and the bullet wound in the lateral aspect of the parietal pleura is noted. Apart from these exceptions, the pleural surfaces are smooth, glistening, and free of adhesions.

The pericardium is normal, and the pericardial cavity contains an estimated 25 cc. of clear, straw-colored fluid.

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The mediastinum is normal except for the superior portion contiguous with the inferior neck structures. The bullet hole in the anterior portion of the neck is noted. There are laminar accumulations of semi-liquid blood in the interfascial spaces on the right side of the neck. These extend into the superior portion of the mediastinum and produce globular hematomata about the arch of the aorta.

Cranial Cavity: The calvarium is normal. The brain weighs 1,460 grams and is grossly normal. It will be described further after fixation. The dural sinuses and pituitary gland are normal. The middle ears are not examined.

Spinal Cord and Canal: The proximal portion of the cervical spinal cord, as viewed from the foramen magnum, is normal.

ORGANS:

Heart: The heart retains its usual contours and configuration and weighs 430 grams. The epicardium is normal except for the presence of a few, scattered soldier's plaques. The cardiac chambers contain a minimal amount of post mortem blood clot, and there are no congenital defects. The endocardium is uniformly smooth and glistening, not thickened, and there are no subendocardial hemorrhages. The cardiac valves are not deformed, and the circumferences of the mitral valve, tricuspid valve, aortic valve, and pulmonic valve are 8.0 cm., 11.0 cm., 8.5 cm., and 8.0 cm., respectively. The myocardium is a homogeneous, reddish-tan, and the left ventricular myocardium averages 1.7 cm. in thickness. The right ventricular myocardium averages 0.5 cm. in thickness. The coronary arteries have their usual distribution and are free of thrombi or emboli. The intima shows the presence of scattered, fatty streaks and hyaline plaques. There does not appear to be any calcification in the coronary arterial tree.

Lungs: The right and left lungs weigh 410 grams and 450 grams, respectively. The right lung is normal. The upper lobe of the left lung is normal. The left lower lobe shows a large, nodular, subpleural area of hemorrhage. There is a jagged tear in the pleura surmounting this area, which measures 5.0 cm. in greatest dimension. There is a small, irregularly shaped area of recent hemorrhage at the base of the left lower lobe in its lateral third. The trachea and mainstem bronchi show no significant abnormality. The pulmonary arteries and veins are similarly normal. The hilar lymph nodes are not enlarged but are fibrotic and appear mildly indurated.

There are a few 2-3 mm., subpleural ovoid granuloma.

Spleen: The spleen is present in the usual location and weighs 220 grams. It is surrounded by a large hematoma, and there are jagged, stellate tears in the capsule of the lateral and medial surfaces. The parenchyma between these two areas is ragged, hemorrhagic, and friable. The laceration on the mid-lateral surface measures approximately 1 cm. in diameter. The laceration on the medial surface measures 2.0 x 1.5 cm. and is approximately rectangular. The splenic parenchyma is otherwise normal.

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Pancreas: The pancreas is normal except for hematoma about the tail.

Digestive Tract: The esophagus is normal. The stomach is grossly normal. At a point 1.8 cm. distal to the pylorus the posterior duodenal wall presents a sharply punched-out ulcer crater measuring 1 cm. in diameter. The crater measures 0.8 cm. in depth. The margins and base are smooth, and the subjacent tissues show a narrow area of scarring. There is no evidence of hemorrhage from this ulcer.

Three segments or loops of the distal jejunum show oval perforations. The margins are black and associated with transmural hemorrhage. The three segments or loops show a total of six holes. These perforations measure 1 cm. in greatest dimension, and the margins are shaggy, mucosa appears to extrude through the serosal defect, and the adjacent mesentery shows irregularly shaped areas of hemorrhage.

There is no significant abnormality of the ileum. With the exception of the pericecal hemorrhage, there is no abnormality of the entire large bowel. The vermiform appendix is normal. The omenta are normal. The recent hemorrhages in the jejunal mesentery have been described.

Liver: The liver weighs 1,950 grams and retains its usual configuration. Glisson's capsule is smooth, translucent, and shiny. The cut surfaces show preservation of the normal architectural markings, and there is no evidence of fatty metamorphosis, abscesses, or metastases.

The gallbladder contains an estimated 20 cc. of viscid, greenish-orange bile and no stones. What appears to be an area of firm, yellowish scarring is noted near the neck of the gallbladder. The remainder of the extrahepatic biliary tree is normal.

Adrenals: The combined weight of the adrenal glands is 12 grams. Neither is abnormal, but the left adrenal gland is surrounded by hemorrhagic, fibro-adipose connective tissue.

Urinary Tract: The right and left kidneys weigh 210 grams and 215 grams respectively. The right kidney is normal. There are stellate, ragged lacerations of the anterior and posterior surfaces of the left kidney in the upper pole at a point 1.5 cm. from the superior margin. The tract between these two perforations is shaggy, filled with liquid blood, and the adjacent parenchyma is hemorrhagic. These two perforations are of similar size and do not exceed 1.0 cm. in greatest dimension. The remainder of the kidney parenchyma shows no significant abnormality.

Both ureters are normal. The urinary bladder shows no significant abnormalities. It contains an estimated 20 cc. of clear urine.

The prostate gland weighs 35 grams and measures 3.5 x 3.0 x 3.0 cm. The cut surfaces show no abnormalities.

Genitalia: The penis is uncircumcised. Both testes are present in the scrotum. The combined weight of the testes is 40 grams, and the parenchyma is a homogeneous, porous tan.

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Vascular System: The aortic intima is the seat of scattered, fatty streaks and hyaline plaques. The aortic elasticity is normal. The left common iliac artery, at a point 4 cm. from the aortic bifurcation, shows a perforation measuring 0.6 cm. in greatest dimension. This perforation is oval, and there are large, confluent areas of intra-adventitial hemorrhage proximally and distally.

The venae cavae and portal vein are normal. The peripheral arteries and veins are not examined.

Reticulo-endothelial System: Lymphoid: There are no significant abnormalities. The mesenteric and peripancreatic nodes are bright yellow. The periportal nodes are grayish-yellow and somewhat enlarged but do not exceed 1.0 cm. in greatest dimension. The hilar lymph nodes appear scarred.

Myeloid: Marrow from a vertebral body and rib is of normal color and consistency.

Musculo-skeletal System: The examined muscles, bones, joints, and ligaments and tendons are normal.

Nervous System: Please see above and Brain after Fixation. The peripheral nerves and spinal cord are not examined.

Endocrine System: The thyroid gland is present in the usual location, weighs 45 grams, and the parenchyma is normal. The pericapsular soft tissues on the right are surrounded by large amounts of partly clotted blood.

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Brain after Fixation: Portions of the right and left leaves of the dura, the falx cerebri, the tentorium cerebelli, and their sinuses are available for examination. The internal and external surfaces of the dura are smooth, glistening, and free of hemorrhage or other abnormalities. The dural sinuses are free of ante mortem thrombi.

The cerebral hemispheres are symmetrical. The gyri and sulci are of normal size, shape, and distribution. The leptomeninges are thin, delicate, and transparent throughout. The subarachnoid space is free of hemorrhage or exudate. The vessels of the circle of Willis are thin-walled, semitransparent throughout, and almost totally free of atherosclerosis. No significant asymmetries, malformations, or aneurysms are encountered. The midline structures (cingulate gyri, unci, mammillary bodies, and brain stem) are not herniated or deviated. The right cerebellar tonsil is slightly more prominent than the left, but it does not appear to be significantly medially approximated and does not compress the medulla. The height of the right tonsil from base to tip is 7 mm., compared to a measurement of 5 mm. on the left.

Serial sections of the cerebral hemispheres at 1 cm. intervals reveal sharp demarcation between gray and white matter. There is slight and relatively minimal putrefaction in the central white matter bilaterally, with a sweetish odor emanating therefrom. The nuclear components of the basal ganglia are sharply demarcated and appear well preserved. The lateral and third ventricles are of normal size and shape and are lined by smooth, glistening ependyma. The choroid plexi in the lateral ventricles are grossly normal. The mammillary bodies are free of necrosis or hemorrhage.

Serial sections of the brain stem and cerebellum at 3 mm. intervals reveal the aqueduct of Sylvius and fourth ventricle to be of normal size and shape and lined by smooth, glistening ependyma. The loci caerulei and substantia nigra are normally pigmented bilaterally. The cerebellar midline nuclei are distinct, and are moderately pigmented yellowish-orange. No areas of hemorrhage or encephalomalacia, or neoplasia are encountered in the brain stem or cerebellum. The periaqueductal gray is free of gross abnormalities.

Sections taken: (1) left superior frontal gyrus, (2) left corpus striatum, (3) left hippocampus, (4) mammillary bodies, hypothalamus, and third ventricle, (5) right cerebellar hemisphere, (6) midbrain, (7) pons, (8) medulla, and (9) glomus of left choroid plexus.

Diagnosis: Brain, no gross abnormalities (early putrefaction)

Dr. McCormick
Neuropathology

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MICROSCOPIC EXAMINATION

Heart: (10) Myocardial hypertrophy

Lungs: (6) Large confluent areas of severe hemorrhage
 Patchy congestion and collapse. Focal, small collection of aspirated, mucoid debris containing clumps of bacteria are occasionally seen. Caseating granulomatous inflammation, mild, focal, chronic. Acid-fast, PAS, and Grocott stains are negative for acid-fast bacteria or fungi.

Spleen: (1) The capsule is covered by a narrow layer of acute inflammatory exudate. Near the margin of the bullet tract there is mild exudation of polymorphonuclear leucocytes. There is associated, mild, vascular congestion. The margin of the bullet tract is shaggy.

Esophagus: (1) Lumen contains a moderate amount of mucopurulent debris

Stomach: (1) No significant lesion

Duodenum: (2) Chronic peptic ulcer

Jejunum: (2) Confluent foci of recent hemorrhage in lamina propria, submucosa, and between muscularis interna and externa. In the latter areas the smooth muscle shows early degenerative change.

Large intestine: (1) Episerosal layer of red blood cells

Liver: (2) Scattered cells are binucleate, otherwise no significant lesion

Adrenals: (2) No significant lesion

Kidneys: (2) Perforation of cortex and medulla with frayed, irregular margins

Urinary bladder: (1) No significant lesion

Testes: (1) No significant lesion

Prostate: (1) No significant lesion

Aorta: (1) Intimal fatty streaks and hyaline plaques (mild)

Common iliac artery, left: (2) Perforation, acute, with intra-adventitial hemorrhage

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Patchy medial calcification, mild

Lymph node: (3) Old granulomatous inflammation, hilar lymph node

Bone: (3) Fragmentation of cortex and marrow cavity with disruption of adjacent soft tissue

Diaphragm: (1) Disruption of normal lamellar muscle bundle arrangement with interfascicular hemorrhage and disruption of muscle bundles. Many of the fibers are necrotic and/or degenerating.

Striated skeletal muscle: (1) No significant lesion

Thyroid: (1) Pericapsular hemorrhage

Skin: (1) Penetrating wounds of skin and subcutaneous tissue with fragmentation at margins

Brain: (4) Mild to moderate thickening of leptomeninges with chronic inflammatory cell infiltrate
 Mild to moderate loss of Purkinje cells, cerebellum
 Fyknosis of small pyramidal cells, intermediate layers
 of cerebral cortex
 Excessive accumulations of lipochrome pigment in neurons.

POST MORTEM LABORATORY STUDIES

Serology: Blood type: B Rh positive

Biochemistry: BUN: 10 mgm%
 Creatinine: 1.3 mgm%
 Blood alcohol: 304 mgm%

Bacteriology (culture): Heart blood: No growth

Photographs: Two sets (27 8 x 10 black and white prints) given to Dr. George D. Callahan, Johnson County Medical Examiner
 Two 2 x 2, color, gross--spleen and lung

RLG:jm DEPARTMENT OF PATHOLOGY
 DIAGNOSIS IS APPROVED
 By R. L. GIVLER, M. D.

Michael E. Korn, M. D.
 Michael E. Korn, M. D.

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 PLACOSIS