



**B HENNEPIN COUNTY
MEDICAL EXAMINER'S OFFICE
AUTOPSY REPORT**



ME NO.: 16-1990

CASE TITLE: MULTIPLE GUNSHOT WOUNDS

DECEASED: Marquez-Heraldes, Raul **SEX:** M **AGE:** 50

DATE AND HOUR OF DEATH: 4-4-16; 6:19 a.m.

DATE AND HOUR OF AUTOPSY: 4-4-16; 9:00 a.m.

PATHOLOGIST: Stephanie L. Stauffer, M.D. **STAFF:** Lorren W. Jackson, M.D.

FINAL DIAGNOSES:

50-year-old man that was shot by another person(s).

I. Multiple gunshot wounds

A. Gunshot wound of chest, penetrating, indeterminate range of fire

1. Entrance: right chest

2. Path: sequentially perforates soft tissues of right chest, right 2nd intercostal muscle and anterior right 3rd rib, right lung, right hemidiaphragm, and liver; then penetrates right perirenal soft tissue

3. Associated findings: scant hemothoraces and hemoperitoneum

4. Recovery: one jacketed projectile from right perirenal soft tissue

5. Trajectory: downward, backward, and slightly leftward

B. Gunshot wound of lateral right hip, penetrating, indeterminate range of fire

1. Entrance: lateral right hip

2. Path: sequentially perforates soft tissue of right hip and subcutaneous tissue of lower abdomen; then penetrates soft tissues of left hip

I HEREBY CERTIFY THAT THIS IS A TRUE AND EXACT COPY OF THE AUTOPSY REPORT FOR THE ABOVE-NAMED INDIVIDUAL


MELISSA LALLAK, Office Administrator

DATE 7/27/2016

3. Associated findings: contusion of anterior left hip overlying wound track
 4. Recovery: one jacketed projectile from subcutaneous tissue of left hip
 5. Trajectory: leftward, slightly upward, and slightly frontward
- C. Gunshot wound of posterior right hip, penetrating, indeterminate range of fire
1. Entrance: posterior right hip
 2. Path: sequentially perforates soft tissue of right hip, proximal right femur, right pelvis (iliac bone), and urinary bladder; and impacts left side of pelvis (iliac bone) prior to ricochet and re-entry into the soft tissue of the left pelvic bowl
 3. Recovery: one jacketed projectile from left side of pelvic bowl
 4. Trajectory: leftward and slightly upward, with no significant frontward or backward deviation
- D. Gunshot wound of left wrist, perforating, indeterminate range of fire
1. Entrance and exit: left wrist
 2. Path: perforates soft tissues and bones of left wrist
 3. Trajectory: indeterminate (either predominantly frontward, or predominantly backward)
- E. Gunshot wound of left leg, penetrating, indeterminate range of fire
1. Entrance: anterior left leg
 2. Path: penetrates soft tissues of left leg
 3. Recovery: one jacketed projectile from subcutis of lateral left knee
 4. Trajectory: upward, backward, and leftward

- F. Gunshot wound of left foot, perforating, indeterminate range of fire
1. Entrance: plantar surface of left 2nd and 3rd toes
 2. Path: perforates soft tissue and bone of left 3rd toe, and soft tissue of left 2nd toe
 3. Exit: dorsal surfaces of left 2nd and 3rd toes
 4. Trajectory: upward, rightward, and slightly backward

II. Additional injuries

- A. Incisions of right 4th and 5th fingers, left palm, and left 5th finger
- B. Abrasions and contusions of face and extremities
- C. Subcutaneous hemorrhage of frontal scalp

III. No significant natural disease

IV. Toxicology (performed on admission specimens collected at Hennepin County Medical Center on 4/4/16 at 06:06)

- A. Blood volatile screen: negative for acetone, ethanol, isopropanol, and methanol
- B. Blood drug screen: amphetamine detected by immunoassay; methamphetamine detected by mass spectrometry
- C. Blood amphetamine quantitation: amphetamine 0.03 mg/L, methamphetamine 0.51 mg/L

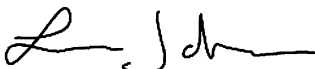
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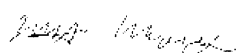
X 
signing for

Stephanie L. Stauffer, M.D.
Deputy Medical Examiners
Signed by: Lorren Jackson

X 

Lorren W. Jackson, M.D.
Assistant Medical Examiner
Signed by: Lorren Jackson

7/27/2016

X 

Mitchel K. Morey, M.D.
Reviewing Pathologist
Signed by: Mitchel Morey MD

ADDITIONAL PERSONNEL PRESENT AT AUTOPSY:

The autopsy is conducted in the presence of Special Agent Doug Henning of the Minnesota Bureau of Criminal Apprehension.

IDENTIFICATION:

Identification is confirmed via comparison of antemortem and postmortem fingerprints by the Minnesota Bureau of Criminal Apprehension. Additionally, a Medical Examiner's identification tag is attached to the outside of the body bag, and is labeled with appropriate case identifying information.

EXTERNAL EXAMINATION:

The body is received in a blue pouch sealed with a yellow plastic zip tie bearing the following handwritten information: "04/04/16 @ 0745 NAB AD", and the following printed information "SEALED 0000503".

The body is that of a well-developed, well-nourished appearing, 65 inches long, 156 pounds (approximate Body Mass Index 26 kg/m²) Hispanic male whose appearance is consistent with the reported age of 50 years. Unfixed red-purple livor mortis is posterior dependent, except in areas exposed to pressure. Rigor is present. The body is slightly warm. Acute injuries are described in a separate section below.

The crown of the head shows male pattern baldness. Elsewhere, the scalp is covered with brown stubble. Facial hair consists of a trimmed brown and white mustache, as well as brown and white beard stubble. The irides are brown, and the pupils are round. The sclerae and conjunctivae are clear. The ears are unremarkable. The nose and maxillae are palpably stable. The nares are patent, and the oral frenula are atraumatic. The teeth appear natural and in adequate condition, with restoration of the left central maxillary incisor. There is antemortem absence of the right central maxillary incisor and the central mandibular incisors.

The neck is straight, and the trachea is midline. The chest is symmetric with iatrogenic injury to be described. The abdomen is flat. The genitalia are those of a normal adult male. The testes are descended, and the scrotum is free of masses. Pubic hair is normally distributed. The back, buttocks, and anus are unremarkable.

The hands are initially covered in tape-sealed evidentiary bags, which are signed, removed, and photographed. The upper and

lower extremities are symmetric and without clubbing, edema, or absence of digits. The fingernails and toenails are short and focally dirt-soiled. On the dorsum of the left hand is a 2 x 1.5 cm faded black tattoo of a cross.

CLOTHING AND PERSONAL EFFECTS:

The following clothing items and personal effects are examined separate from the body at the time of autopsy (Note: All clothing items and personal effects are received in sealed, evidentiary bags and containers. No gross evidence of soot or unburned gunpowder deposition is identified on any of the submitted clothing items):

- One gray and black "Kenneth Cole" brand short-sleeve shirt, size large, with multiple cuts on the front (compatible with medical intervention). On the right front of the shirt is a 1.5 x 1.3 cm oval hole with frayed margins that is centered approximately 7.5 cm below the top right side of the collar.
- One black "Fruit of the Loom" brand tank top-style shirt, size large. On the right front of the shirt is a 2.5 x 2.1 cm irregular hole with frayed margins that is centered approximately 2 cm below the top right side of the collar.
- One pair of blue denim pants (brand not discerned) with multiple cuts on the front (compatible with medical intervention), size 32. The following defects are observed:
 - On the right side of the pants is a 0.7 cm diameter round hole with frayed margins that is centered 13.5 cm below the waistband.
 - On the back right side of the pants, centered approximately 7 cm from the previously described defect, and 12 cm below the waistband is a 0.6 cm diameter round hole with frayed margins.
- One pair of black "Hanes" brand boxer brief-style underwear, size small, with multiple cuts on the front (compatible with medical intervention), and an apparent wear defect in the groin area. The following additional defects are observed:
 - On the front left side is a 0.8 x 0.7 cm oval hole with frayed margins that is centered 13.5 cm below the waistband.
 - On the left side is a 1.1 x 0.7 cm oval hole with frayed margins that is centered 12 cm below the waistband.
- One unmatched pair of black socks. At the toe of one sock, spaced approximately 5 cm apart, are two irregular holes with frayed margins measuring 1.5 and 3 cm in maximum dimension.

- One black and brown leather "Brooks Brothers" brand belt with a white metal buckle, cut (compatible with medical intervention), size 34/85.
- One white metal ring (band).

MEDICAL INTERVENTION:

- An endotracheal tube is in the mouth, and is secured with adhesive face pads and an elastic strap.
- On the central chest is a 63 cm curvilinear open surgical incision with associated thoracotomies through the right 6th intercostal space, and left 5th intercostal space.
- Fractures involve the anterior aspects of the right 2nd through 6th ribs, and anterior aspects of the left 4th through 6th ribs.
- The pericardial sac has been surgically opened; scant blood is in the bilateral pleural and pericardial spaces.
- A vascular catheter is in the medial left forearm, and is secured with adhesive tape.
- A hospital identification band encircles the right wrist, and a hospital identification tag is attached to the left great toe.
- Vascular catheters are in the right and left inguinal areas, and each is secured with suture.

RADIOGRAPHS:

Postmortem full body radiographs show retained radiopaque projectiles and fragments in the following locations:

- Minute irregular fragments are in the right side of the chest.
- Minute irregular fragments and one large irregular projectile are in the right side of the abdomen.
- Several minute irregular fragments are in the area of the proximal right femur (with associated fracture) and right side of the pelvic bowl.
- A projectile is within the left side of the pelvic bowl.
- A projectile is in the soft tissue of the left hip.
- A defect in the medial left wrist with associated carpal fractures and retained minute irregular metal fragments.
- A projectile is in the soft tissue lateral to the left knee.

No retained radiopaque projectiles or projectile fragments are noted in the images of the head, neck, right upper extremity,

mid to distal right lower extremity, or distal left lower extremity. A dental restoration and multiple medical interventions, including thoracotomy-related soft tissue and bony injuries, are also seen in postmortem radiographs.

EVIDENCE OF INJURY:

The order of the following gunshot, blunt force, and sharp force injuries is for descriptive purposes only and does not imply relative severity or order of infliction. All wound pathways are described relative to standard anatomic position.

GUNSHOT WOUND OF CHEST:

ENTRANCE: On the right side of the chest, centered approximately 31.5 cm below the top of the head, 9 cm right of the anterior midline, and 9 cm inferior and medial to the right shoulder (acromion process) is a 1.2 x 1 cm oval defect with a partially dried circumferential abrasion margin that is 0.1 to 0.7 cm in width, and maximally wide at the 10 to 12 o'clock aspect. The skin surrounding the defect shows an area of patchy irregular purple-blue contusion up to 4 x 3.5 cm, but no evidence of searing, soot deposition, unburned gunpowder stippling or muzzle abrasion.

PATH: The hemorrhagic wound track sequentially perforates the soft tissue of the right side of the chest, anterior right 2nd intercostal muscle and superior aspect of the anterior right 3rd rib, upper lobe of the right lung, right hemi-diaphragm, and right lobe of the liver. The projectile then penetrates and comes to rest in the right perirenal soft tissue.

ASSOCIATED FINDINGS: Associated findings include scant hemothoraces and scant hemoperitoneum.

RECOVERY: One deformed lead-color projectile with a copper-color jacket, and relatively intact base (approximate diameter of 0.9 cm), is recovered from the right perirenal soft tissue.

TRAJECTORY: The wound direction is downward, backward, and slightly leftward.

GUNSHOT WOUND OF LATERAL RIGHT HIP:

ENTRANCE: On the lateral right hip, centered approximately 90.5 cm below the top of the head, 9 cm right of the anterior midline of the leg, and 70.5 cm superior to the base of the right heel is a 0.7 cm in diameter round, punched-out defect with a

circumferential abrasion margin that is 0.1 to 0.4 cm wide, that is maximally wide at the 8 to 9 o'clock aspect. The skin surrounding the wound shows no evidence of searing, soot deposition, unburned gunpowder stippling or muzzle abrasion.

PATH: The hemorrhagic wound track sequentially perforates the soft tissue of the right hip and subcutaneous tissue of the lower abdomen, before penetrating and coming to rest in the soft tissue of the left hip.

ASSOCIATED FINDINGS: A 10 x 3 cm irregular purple-blue contusion is on the anterior left hip overlying the wound track.

RECOVERY: One deformed lead-color projectile with a copper-color jacket, and relatively intact base with a diameter of approximately 1 cm, is recovered from the subcutaneous tissue of the left hip.

TRAJECTORY: The wound direction is leftward, slightly upward, and slightly frontward.

GUNSHOT WOUND OF POSTERIOR RIGHT HIP:

ENTRANCE: On the posterior right hip, centered approximately 86.5 cm below the top of the head, 21.5 cm right of the posterior midline, and 72 cm superior to the base right heel is a 0.9 cm round, punched-out defect with a circumferential abrasion margin measuring 0.1 cm or less in width, that is maximally wide at the 4 to 6 o'clock aspect. The skin surrounding the wound shows no evidence of searing, soot deposition, unburned gunpowder stippling or muzzle abrasion.

PATH: The hemorrhagic wound track sequentially perforates the soft tissue of the right hip, proximal aspect of the right femur, right iliac bone, and urinary bladder. The projectile then strikes the inner table of the left iliac bone, and deflects back into the soft tissues of the pelvic bowl (adjacent to the left iliac bone).

RECOVERY: One deformed lead-color projectile with a copper-color jacket, and relatively intact base with a diameter of 1 cm, is recovered from the left side of the pelvic bowl.

TRAJECTORY: The wound direction is leftward and slightly upward, with no significant frontward or backward deviation.

GUNSHOT WOUND OF LEFT WRIST:

ENTRANCE AND EXIT: Two closely spaced defects are associated with a perforating gunshot wound of the left wrist. One defect is on the posterior left wrist, and is centered approximately 77 cm below the top of the head, 2 cm right of the posterior midline of the left arm, and 17.5 cm superior to the tip of the left 3rd finger. This defect consists of a 1.5 x 0.9 cm irregular to stellate laceration that is centered within an approximate 6 x 5 cm area of faint pink-purple contusion. Irregular to curvilinear red-brown abrasions ranging from 0.2 to 1.1 cm in maximum dimension are present on the skin surrounding the wound, between the 9 o'clock and 4 o'clock positions.

The second defect involves a gaping laceration of the acral skin of the anterior aspect of the left wrist, and is centered approximately 77 cm below the top of the head, 2 cm right of the anterior midline of the left arm, and 17.5 cm superior to the tip of the left 3rd finger. This defect measures 2.5 x 2 cm and has irregular to stellate morphology.

Due to tissue destruction, irregular appearance of the wounds on the wrist, and lack of associated searing, soot deposition, gunpowder stippling, or muzzle imprint on the skin surrounding either wound, the points of bullet entry and exit cannot be definitively determined.

PATH: The hemorrhagic wound track perforates the soft tissues and bones of the left wrist.

TRAJECTORY: Because entrance and exit wounds cannot be differentiated, the wound trajectory is also unclear, but is either predominantly frontward or predominantly backward, relative to anatomic position.

GUNSHOT WOUND OF LEFT LEG:

ENTRANCE: Near the anterior midline of the left leg, centered approximately 136 cm below the top of the head and 31 cm superior to the left heel is a 2 x 0.8 cm oval punched-out defect with an associated roughly triangular area of superficial skin disruption and marginal abrasion involving the 2 to 10 o'clock aspects of the wound edge. This abraded area of skin is 0.1 to 2.5 cm wide, and is maximally wide at the 6 o'clock aspect. Three skin tags, which all point roughly inferiorly, are present along the wound edges at the 1 o'clock aspect (0.6 cm long tag), at the 2 o'clock aspect (0.7 cm long tag), and 11 o'clock aspect (1.9 cm long tag). The skin surrounding the

wound shows focal faint pink discoloration, without evidence of searing, soot deposition, unburned gunpowder stippling or muzzle abrasion.

PATH: The hemorrhagic wound track penetrates the soft tissue of the left leg.

RECOVERY: One deformed lead-color projectile with a copper-color jacket, and relatively intact base with a diameter of 1 cm, is recovered from the subcutis of the lateral left knee.

TRAJECTORY: The wound direction is upward, backward, and leftward.

GUNSHOT WOUND OF LEFT FOOT:

ENTRANCE: Near the midline of the left foot, on the plantar surface of the left 2nd and 3rd toes (when closely approximated) is a 0.5 cm diameter round punched-out defect with no apparent abrasion margin. The skin surrounding the wound shows no evidence of searing, soot deposition, unburned gunpowder stippling or muzzle abrasion.

PATH: The hemorrhagic wound track perforates the soft tissue of the left 2nd toe and soft tissue and distal phalanx of the left 3rd toe.

EXIT: On the dorsal aspect of the left 2nd and 3rd toes (when re-approximated), centered approximately 173.5 cm below the top of the head, is a 1.8 x 1.7 cm irregular, partially punched-out and lacerated defect. Separate apparent inferior-pointing skin tags are on the 2nd and 3rd toes and measure 0.4 cm and 0.3 cm long, respectively.

TRAJECTORY: The wound direction is upward, rightward, and slightly backward.

SHARP FORCE INJURIES:

- On the anterior right 4th finger is a 1.3 cm long x 0.3 cm deep curvilinear incision.
- On the anterior right 5th finger is a 3 cm long x 0.8 cm deep horizontal incision.
- On the left palm, near the base of the fingers, is a 4.2 cm long, superficial (less than 0.1 cm in depth) linear incision.

- On the palmar surface of the base of the left 5th finger are three incisions measuring 0.3, 0.5, and 0.8 cm in length, and up to 0.1 cm in depth.

BLUNT FORCE INJURIES:

- On the face (extending over the right and left temporal regions, forehead, bridge of the nose, and left side of the face and chin) is a 23 x 19 cm area of scattered irregular red-brown abrasions and abraded faint red-purple contusions that range in size from less than 0.1 to 3.5 cm in maximum dimension.
- A 2 cm maximum dimension oval area of hemorrhage involves the subcutaneous tissue of the right frontal scalp.
- A 2.8 x 1.6 cm irregular red-purple abraded contusion is on the left side of the chest.
- A 1.2 x 0.7 cm, oval, faint purple contusion is on the left side of the chest.
- Three irregular faint red abrasions, ranging from 0.2 to 0.6 cm maximum dimension, are on the anterior left arm.
- A 1 x 0.8 cm oval faint purple contusion is on the anterior left wrist.
- A 1.4 x 1.2 cm oval purple contusion is on the anterolateral left thumb.
- A 1 x 0.8 cm oval purple contusion is on the anterolateral right thumb.
- Two irregular abrasions, 0.2 and 0.6 cm maximum dimension, are on the anterior right leg.

INTERNAL EXAMINATION:

HEAD: There is injury of the deep scalp, as previously described. The calvarium and underlying dura mater are intact. Clear cerebrospinal fluid surrounds the 1345 g brain, which is symmetric and has unremarkable gyri and sulci. The leptomeninges are thin and transparent. No epidural, subdural, or subarachnoid hemorrhage is identified. Coronal sections demonstrate sharp demarcation between white and gray 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. The pituitary gland is normally positioned and is unremarkable. There are no skull fractures. The atlanto-occipital joint is stable.

NECK: The anterior strap muscles of the neck are homogenous, red-brown, and without hemorrhage. The thyroid cartilage and hyoid bone are intact. The larynx is lined by intact tan mucosa. The thyroid gland is symmetric, red-brown, and without cystic or nodular change. The tongue is free of bite marks, hemorrhage, or other injuries.

MUSCULOSKELETAL SYSTEM: The skeletal muscles are firm and appropriate for body habitus. Where not injured by gunfire or disrupted by medical intervention, the bony skeleton appears normal. The vertebral bodies are visibly and palpably intact.

BODY CAVITIES: Few fibrous adhesions are present in the left pleural cavity. The organs occupy the usual anatomic positions.

RESPIRATORY SYSTEM: The right and left lungs weigh 300 and 310 g, respectively. Each lung contains two lobes. Where not injured by gunfire, the external surfaces are smooth and deep red-purple. The pulmonary parenchyma is diffusely congested and edematous. Sectioning reveals no mass lesions or areas of consolidation. The tracheobronchial tree and the pulmonary vasculature are unobstructed.

CARDIOVASCULAR SYSTEM: The heart weighs 325 g. The epicardial surface is smooth, with minimal fat investment. The coronary arterial distribution is normal and right-dominant. Cross-sections of the vessels show mild (25%) atherosclerotic stenosis of the proximal aspect of both the left anterior descending and right coronary arteries. The left main and left circumflex coronary arteries are widely patent. The myocardium is red-brown, firm, and without areas of discoloration or fibrosis. The valve leaflets are thin, mobile, and free of vegetations or degenerative changes. There is red-purple discoloration of the apical epicardial fat. The atrial and ventricular septa are intact and unremarkable. There is thickening of the interventricular septum immediately inferior to the aortic valve. The walls of the left and right ventricles are 1.3 and 0.5 cm thick, respectively. The foramen ovale is sealed. The endocardium is smooth and glistening. The aorta shows no significant atherosclerosis and gives rise to three intact and patent arch vessels. The renal and mesenteric vessels are unremarkable. The venae cavae and their major tributaries are patent and appear normal.

LIVER AND BILIARY SYSTEM: The liver weighs 1335 g. Where not injured by gunfire, the capsule is smooth. There is a sharp anterior border. The parenchyma is red to tan-brown and congested, with the usual lobular architecture. Sectioning reveals no mass

lesions. The gallbladder contains green bile and no stones. The mucosal surface is green and velvety. The extrahepatic biliary tree is patent.

SPLEEN AND HEMATOPOIETIC SYSTEM: The 100 g spleen has a smooth, intact, capsule. The parenchyma is maroon and congested. No lymphadenopathy is identified. The exposed bone marrow is unremarkable.

PANCREAS: The pancreas is firm and yellow-tan, with the usual lobular architecture. No mass lesions or other abnormalities are seen.

ADRENALS: The right and left adrenal glands are symmetric, with bright yellow cortices and gray medullae. No masses or areas of parenchymal hemorrhage are identified.

GENITOURINARY SYSTEM: The right and left kidneys weigh 145 and 140 g, respectively. The external surfaces are intact and smooth. The cut surfaces are red-tan and congested, with uniformly thick cortices and sharp corticomedullary junctions. The pelves are unremarkable and the ureters are normal in course and caliber. The bladder mucosa is pink. The bladder contains no urine. There are injuries of the urinary bladder, as previously described. The prostate is normal in size, with 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, red-white mucosa. The stomach contains approximately 20 mL of tan-yellow partially digested food. No medications are discerned. The gastric wall is intact. The duodenum, loops of small bowel, colon, and appendix are unremarkable.

ADDITIONAL PROCEDURES:

- Documentary photographs are taken.
- Specimens retained for toxicologic testing: blood (femoral, aortic), vitreous, liver, and gastric contents.
- Representative tissue biopsies are submitted in cassettes for microscopic examination; additional biopsies are retained in formalin for potential microscopic evaluation.
- All recovered projectiles are photographed and placed in labeled, sealed envelopes.
- Fingernail clippings and pulled chest hairs are placed in labeled, sealed envelopes.

MICROSCOPIC EXAMINATION:

- HEART (1):** Sections of the right and left ventricular myocardium show focal expansion of perivascular connective tissue; otherwise, no significant pathologic abnormality.
- KIDNEY (2):** A section shows rare sclerotic glomeruli.
- LUNGS (2,3):** Sections of the right upper lobe (2) and left upper lobe (3) show focally widened airspaces and scattered black pigment deposition. Polarized light microscopy is negative.
- LIVER (3):** Mild macrovesicular steatosis and patchy mild lymphocytic portal inflammation.
- BRAIN (4):** A section of hippocampus shows no significant pathologic abnormality.