



**SOUTHWESTERN
INSTITUTE OF FORENSIC SCIENCES
AT DALLAS**



**Office of the Medical Examiner
Autopsy Report**

Case: IFS-16-14001 - ME

Decedent: Timpa, Anthony Alan 32 years White Male DOB: 06/05/1984

Date of Death: 08/10/2016 (Actual)

Time of Death: 11:30 PM (Actual)

Examination Performed: 08/13/2016 07:30 AM

Body Weight: 223 lbs BMI: 31.10

Body Length: 71 in

ORGAN WEIGHTS:

Brain: 1,450 g	Right Lung: 860 g	Right Kidney: 170 g
Heart: 480 g	Left Lung: 820 g	Left Kidney: 180 g
Liver: 1,420 g	Spleen: 380 g	

EXTERNAL EXAMINATION

The decedent is received in a sealed body bag with tag number 5125876. The body is identified by toe tags. Photographs and fingerprints are taken.

When first viewed, the body is clad in a blue hospital gown, which is discarded. No jewelry is present. The hands are not bagged. Received with the body is a brown paper bag containing a pair of blue shorts, cut away white briefs, and a cut away black T-shirt (in two pieces). The clothing is released.

The body is that of a well-developed, obese white male whose appearance is compatible with the stated age of 32 years. The body, as received, weighs 223 pounds and is 71 inches long. Very early decompositional changes are present in the absence of embalming. The body is cold, rigor is fully developed, and there is well-developed, faintly blanching posterior lividity.

The scalp hair is short, red, and straight. Beard and mustache stubble is on the face. An average amount of body hair is in a normal distribution. The irides are blue-green, the corneae are clear, and there are no petechiae of the bulbar or palpebral surfaces of the conjunctivae. The conjunctivae are mildly congested. The ears, nose, and lips are unremarkable. The teeth are natural and in good condition. The neck is unremarkable. The chest is symmetrical, and the abdomen is slightly protuberant. The external genitalia, anus, and perineum are unremarkable. The penis is circumcised and the testes are descended into the scrotum. The extremities are well-developed and symmetrical. The back is normally-formed.



Timpa, Anthony Alan

IDENTIFYING MARKS AND SCARS

A 3 inch, oblique scar is on the left lower quadrant of the abdomen. A 4 inch, vertical scar is over the left knee.

EVIDENCE OF THERAPY

An endotracheal tube protrudes from the mouth. Defibrillation pads are on the chest and abdomen; a paddle mark underlies the chest defibrillation pad. Intravascular catheters are in the right hand and left antecubital fossa.

The right and left first and second ribs are fractured laterally, consistent with cardiopulmonary resuscitation.

EVIDENCE OF INJURY

1. HEAD AND NECK:

A 1-1/2 x 1/2 inch, red contusion is on the right submental chin.

There are no external injuries of the neck. An anterior neck dissection is performed to reveal a small amount of hemorrhage in the inferior belly of the right omohyoid muscle; this is likely secondary to postmortem blood procurement. A posterior neck dissection is performed to reveal no hemorrhage in the cervical paraspinal muscles.

2. TRUNK:

The right nipple is abraded. A 1/2 inch, faint blue contusion is on the left mid back, and a 1/4 inch, faint blue contusion is on the midline mid back. The skin of the back is reflected to reveal no evidence of subcutaneous or intramuscular hemorrhage.

3. EXTREMITIES:

A 1 inch, red-purple contusion is on the ventral right arm. A 3/4 and a 1/8 inch red abrasion are on the right elbow. Four faint red contusions ranging from 1/2 to 1-1/2 inches are on the dorsal right forearm. A 3/8 x 1/8 inch abrasion is on the medial right wrist, and a 3/4 inch linear abrasion is on the dorsal right wrist. A 1 inch red contusion is on the dorsal right hand.

A 1 inch gray contusion is on the ventral left arm. A 1/4 inch abrasion is on the left elbow. A 1 inch, faint red contusion is on the dorsal left forearm. Spotty red contusion is over the dorsal left wrist, and a 3/4 x 1/4 inch red abrasion is on the medial left wrist.

Approximately seven red abrasions ranging from 1/4 to 3/4 inch are on the lateral right knee. A 1/2 inch linear abrasion and a 1/4 inch red contusion are on the anterior right lower leg. A 1 inch, spotty red contusion is on the right ankle. A 1/8 inch red abrasion is on the right ankle. Puncture marks are on the dorsal right foot and the posterior right ankle.

Eight red abrasions ranging from 1/8 to 1 inch are on the medial left knee and below the left knee. A 1/2 inch red contusion and two punctate abrasions are on the anterior left lower leg. Two puncture marks are on the dorsal left foot.



Timpa, Anthony Alan

These injuries, having been once described, will not be repeated.

EVIDENCE SUBMITTED

The following items are collected, sealed within appropriately labeled containers, and submitted to the Criminal Investigation Laboratory:

- Blood standard
- Head hair standard
- Fingernail clippings.

INTERNAL EXAMINATION

BODY CAVITIES: The thoracic and abdominal organs are in their normal anatomic positions. The body cavities contain no adhesions or abnormal collections of fluid.

HEAD: See EVIDENCE OF INJURY. The scalp, subscalpular area, and skull are unremarkable. The dura and dural sinuses are unremarkable. There are no epidural, subdural or subarachnoid hemorrhages. The leptomeninges are thin and delicate. The cerebral hemispheres are symmetrical, with an unremarkable gyral pattern. The cranial nerves and blood vessels are unremarkable. Sections through the cerebral hemispheres, brainstem, and cerebellum are unremarkable. There are no hemorrhages in the deep white matter or the basal ganglia. The cerebral ventricles contain no blood. The spinal cord, as viewed from the cranial cavity, is unremarkable.

NECK: See EVIDENCE OF INJURY. The soft tissues and prevertebral fascia are unremarkable. The hyoid bone and laryngeal cartilages are intact. The lumen of the larynx is not obstructed.

CARDIOVASCULAR SYSTEM: The intimal surface of the abdominal aorta is free of significant atherosclerosis. The aorta and its major branches and the great veins are normally distributed and unremarkable. The pulmonary arteries contain no thromboemboli. The pericardium, epicardium, and endocardium are smooth, glistening, and unremarkable. There are no thrombi in the atria or ventricles. The foramen ovale is closed. The coronary arterial system is free of significant atherosclerosis. The atrial and ventricular septa are intact. The cardiac valves are unremarkable. The myocardium of the left ventricle has a red-brown outer surface and a pale brown inner surface. There are no focal abnormalities. The left ventricular thickness is 1.4 cm, the right ventricular thickness is 0.3 cm, and the interventricular septum thickness is 1.4 cm. The ventricles are dilated.

RESPIRATORY SYSTEM: The upper airway is unobstructed. The laryngeal mucosa is smooth and unremarkable, without petechiae. The pleural surfaces are smooth and glistening. The major bronchi are unremarkable. Sectioning of the lungs discloses a purple, severely congested parenchyma.

HEPATOBIILIARY SYSTEM: The liver is covered by a smooth, glistening capsule. The parenchyma is tan-brown with areas of yellow-tan and scattered air pockets. The gallbladder contains approximately 10 mL of green-brown bile, with no calculi.

GASTROINTESTINAL SYSTEM: The esophageal mucosa is gray, smooth, and unremarkable. The stomach contains approximately 10 mL of dark brown liquid. There are no tablets or capsules. The gastric mucosa has normal rugal folds, and there are no ulcers. The small and large intestines are externally unremarkable. The appendix is present. The pancreas is



Timpa, Anthony Alan

unremarkable externally and upon sectioning.

GENITOURINARY SYSTEM: The capsules of both kidneys strip with ease to reveal smooth and slightly lobulated surfaces. The cortices are of normal thickness, with well-demarcated corticomedullary junctions. A 0.5 cm, fluid-filled cyst is in the cortex of the right kidney. The calyces, pelves, and ureters are unremarkable. The bladder contains approximately 20 mL of yellow urine. The mucosa is gray, smooth, and unremarkable. The prostate gland is unremarkable externally and upon sectioning.

ENDOCRINE SYSTEM: The thyroid and adrenal glands are unremarkable externally and upon sectioning.

LYMPHORETICULAR SYSTEM: The spleen is covered by a smooth, blue-gray, intact capsule. The parenchyma is dark red and predominantly liquefied. The cervical, hilar, and peritoneal lymph nodes are unremarkable.

MUSCULOSKELETAL SYSTEM: See EVIDENCE OF THERAPY. The clavicles, sternum, pelvis, and vertebral column have no fractures. The diaphragm is intact.

MICROSCOPIC EXAMINATION:

Lungs: Early autolytic and putrefactive changes are present, with loss of cell nuclei, homogenization of airspaces, and bacterial overgrowth without associated vital reaction. Intact airspaces contain edema fluid. There is mild anthracosis.

Liver: Mild chronic inflammation surrounds portal triads, and there are scattered small foci of chronic lobular inflammation. Macrovesicular steatosis occupies approximately 10% of hepatic parenchyma. There is centrilobular congestion.

Kidney: There is mild interstitial scarring.

Heart: Early autolytic and putrefactive changes are present, with loss of cell nuclei and bacterial overgrowth without associated vital reaction. Rare enlarged, hyperchromatic myocyte nuclei are seen. Interstitial fibrosis is mildly increased.

TOXICOLOGY:

Evidence Submitted:

The following items were received by the Laboratory from Forensic Pathology:

- 007: Biohazard Bag
- 007-001: Blood, femoral - gray top tube
- 007-002: Blood, femoral - gray top tube
- 007-003: Blood, femoral - gray top tube
- 007-004: Blood, femoral - gray top tube
- 007-005: Vitreous - red top tube
- 007-006: Skeletal muscle - plastic tube
- 007-007: Blood, subclavian - red top tube
- 007-008: Urine - red top tube



Timpa, Anthony Alan

Blood, postmortem

Acid/Neutral Screen (GC/MS)

hydroxy oxcarbazepine detected (007-004)

Alcohols/Acetone (GC)

negative (Item# 007-002)

Alkaline Quantitation (GC/FID)

trazodone: 0.04 mg/L (Item# 007-001)

bupropion: 0.15 mg/L (Item# 007-001)

Alkaline Screen (GC/MS)

dihydrobupropion detected (007-003)

hydroxybupropion detected (007-003)

levamisole detected (007-003)

demethylvenlafaxine detected (007-003)

Cocaine and Metabolites (GC/MS)

cocaine: 0.647 mg/L (Item# 007-001)

ecgonine methyl ester: 0.378 mg/L (Item# 007-001)

benzoylecgonine: 0.843 mg/L (Item# 007-001)

Vitreous

Alcohols/Acetone (GC)

negative (Item# 007-005)

Electrolytes (Analyzer)

sodium: 139 mEq/L (Item# 007-005)

potassium: >20.0 mEq/L (Item# 007-005)

chloride: 115 mEq/L (Item# 007-005)

glucose: 72 mg/dL (Item# 007-005)

urea nitrogen: 22 mg/dL (Item# 007-005)

Note: A blood specimen was sent to NMS for oxcarbazepine metabolite quantitation.

REFERRAL TOXICOLOGY:

10-hydroxycarbazepine

13 mcg/mL

Performing Laboratory

NMS



Timpa, Anthony Alan

FINDINGS:

1. Toxic effects of cocaine:
 - a. Cocaine and its metabolites detected in postmortem blood.
 - b. Reported history of illicit drug use.
2. By history, the decedent became unresponsive after acting erratically and being subdued by police officers:
 - a. Review of surveillance footage, body cam footage, and incident reports show the following to take place on the night of 8/10/16:
 - i. The decedent is seen talking on the phone and appearing agitated. The decedent was reportedly on the phone with 911 at this time, stating he was "off his medication."
 - ii. The decedent is witnessed to run into a busy street.
 - iii. Officers respond to the scene, at which point the decedent has been previously handcuffed by security guards.
 - iv. The decedent is seen rolling on the ground, kicking, and yelling at the edge of the street.
 - v. Approximately 50 seconds after officers arrive, the decedent is placed on his stomach and an officer places a knee on his back.
 - vi. The decedent continues to yell and fight against the officer for approximately 10 more minutes. During this time his feet are also restrained.
 - vii. The decedent begins to calm down and is heard "snoring."
 - viii. The decedent can be seen moving until approximately 13 minutes after force is applied to his back.
 - ix. Approximately 13:30 minutes after pressure is applied, the officer removes pressure.
 - x. The decedent is rolled over and placed on a gurney. He appears unresponsive. Once inside the ambulance, he is found to have no pulse and to not be breathing. Cardiopulmonary resuscitation is initiated.
 - b. The decedent was transported to the hospital and pronounced shortly after arrival.
3. Cardiac hypertrophy (480 grams).
4. Clinical history of bipolar disorder.
5. Prior history of methamphetamine-induced psychosis.
6. Superficial contusions and abrasions to head, trunk, and extremities.
7. Attempted resuscitation.

CONCLUSIONS:



Timpa, Anthony Alan

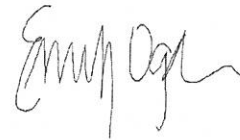
Based on the case history and autopsy findings, it is my opinion that Anthony Alan Timpa, a 32-year-old white male, died as a result of sudden cardiac death due to the toxic effects of cocaine and physiologic stress associated with physical restraint. Cardiac hypertrophy and bipolar disorder contributed to his death.

The mechanism of death in cases such as this is sometimes referred to as "excited delirium syndrome (EDS)." Classically, people affected by EDS are witnessed to exhibit erratic or aggressive behavior, and will often "throw off" attempts at restraint, requiring multiple people to subdue them. The person will appear to calm down and will suddenly become unresponsive. Most cases are associated with drug intoxication and/or psychiatric illness.

In this case, several factors likely contributed to the death. The surveillance and body cam footage and witness reports fit the classic scenario of excited delirium syndrome, and cocaine use and psychiatric illness (bipolar disorder) are common predisposing risk factors for EDS. Cocaine leads to increased heart rate and increased blood pressure, making a cardiac arrhythmia more likely. Due to his prone position and physical restraint by an officer, an element of mechanical or positional asphyxia cannot be ruled out (although he was seen to be yelling and fighting for the majority of the restraint). His enlarged heart size also put him at risk for sudden cardiac death.

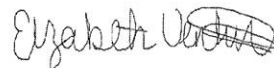
Although the decedent only had superficial injuries, the manner of death will be ruled a homicide, as the stress of being restrained and extreme physical exertion contributed to his demise.

MANNER OF DEATH: Homicide



10/07/2016

Emily Ogden, M.D.
Medical Examiner



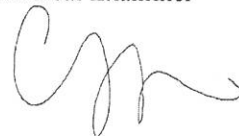
10/12/2016

Elizabeth Ventura, M.D.
Medical Examiner



10/12/2016

Candace Schoppe, M.D.
Medical Examiner



10/11/2016

Chester S Gwin, M.D.
Medical Examiner



Timpa, Anthony Alan



10/12/2016

Stephen M. Lenfest, M.D.
Medical Examiner



10/10/2016

Tracy J Dyer, M.D., J.D.
Medical Examiner



10/11/2016

Stephen M. Hastings, M.D.
Medical Examiner



10/11/2016

Jill E Urban, M.D.
Medical Examiner



10/10/2016

Janis K Townsend-Parchman, M.D.
Medical Examiner



10/11/2016

Reade A Quinton, M.D.
Deputy Chief Medical Examiner



10/08/2016

Jeffrey J Barnard, M.D.
Director and Chief Medical Examiner



SOUTHWESTERN INSTITUTE OF FORENSIC SCIENCES AT DALLAS

CASE NUMBER 16-14001 0 FULL NAME OF DECEASED: Timpa, Anthony Alan

EXAMINATION PERFORMED 8/13/16, commencing at 7:30 AM PM INSPECTION AUTOPSY

AUTHORITY (if other than SWIFS):

IDENTIFICATION AT AUTOPSY - Positive Tentative Unknown

Photo Fingerprint Palmprint Footprint X-Ray Hands bagged Feet bagged

CLOTHING: 1) blue hosp gown (disc)

- 2)
- 3)
- 4)
- 5)
- 6)
- 7)
- 8)
- 9)

5125876

OTHER ITEMS WITH OR UPON BODY (not Rx): blue shorts, CA white briefs, CA black shirt (2 pieces)

DEVELOPMENT: Normal Other _____

RACE: White Black Latin Am. Indian Oriental Other _____

SEX: Male Female AGE: Fetus Infant Child Adolescent Adult

BUILD: Slight Average Large Muscular Heavy set

AGE: _____-apparent Recorded 32-years _____-months _____-weeks _____-days

LENGTH _____-feet 71-inches / _____-cm (Crown-heel) (2.54)

_____ -Crown-rump _____ -Chest _____ -Head _____ -Foot

NUTRITIONAL STATUS: Emaciated Thin Average Overwt Obese (gross/morbid)

WEIGHT: 223-pounds _____-grams Unclothed Clothed (0.4536)

PRESERVATION: Good Very early Early Moderate Advanced Bones

EMBALMED: No Yes Route-

LIVIDITY: Absent Reduced Ill-defined Developed Well-developed

Back Front Right Left Upper Lower Patchy

Red-purple Cherry red Other _____ faintly Blanching Fixed

RIGIDITY: full TEMPERATURE: Cool

CASE NUMBER 16-14001

NAME Timpa, Anthony

HAIR Hairline normal Receded _____ ins. Balding- on top back of head

Head hair _____
 amount character straight color red length (max) ins. short

Moustache _____ Beard _____

Body hair ♂ ♀ preadolescent slight average plentiful

SCALP

EARS Pierced - right x _____, left x _____

EYES closed open Comeae - clear slightly cloudy cloudy opaque

irides- blue-green arcus- _____ pupils- _____ mm =

conjunctivae- petechiae cataracts- _____ other- _____
mild cong

NOSE & MOUTH

TEETH edentulous natural good dentures- upper lower

FACE

NECK

CHEST / BREASTS

ABDOMEN sl protub

LIMBS eq / sym / dev marbling arms

GENITALIA circ uncirc. ♂ ↓ ↓ ♀

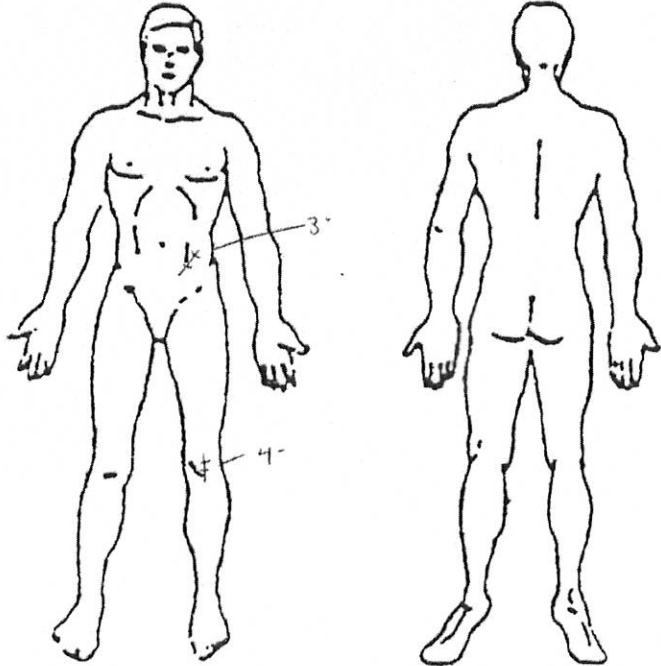
BACK / BUTTOCKS / ANUS

MARKINGS (diagram as required)

Scars

Tattoos

Other surface features



CASE NUMBER: 16-14001 0

NAME: Timpa, Anthony

MEDICAL RECORD SEEN: No Yes

EVIDENCE SUBMITTED: No Yes Handwashings Clothing Blood Head hair standards
 Projectiles - Bullet(s) _____ Shot _____ Wad(s) _____ Gunpowder Fingernail clippings
 Paint chips Glass Hairs Fibers Drugs Sexual activity kit - (above items, plus)-
 Pubic hair standards / combings Head hair combings Oral / Anal / Vaginal - Swabs and smears

EVIDENCE OF TREATMENT (diagram as required)

ET, paddle mark
 Defib chest + abd
 IV R hand, L AC

(B) 1-2 lat

EVIDENCE OF INJURY (diagram as required)

see diagram
 ant neck - hem R ^{inf} omohyoid (PM blood draw)
 post back/neck ⊖

STAT TEST RESULTS:

Blood ETOH _____
 Vitreous glu. _____
 Blood CO _____
 Other _____

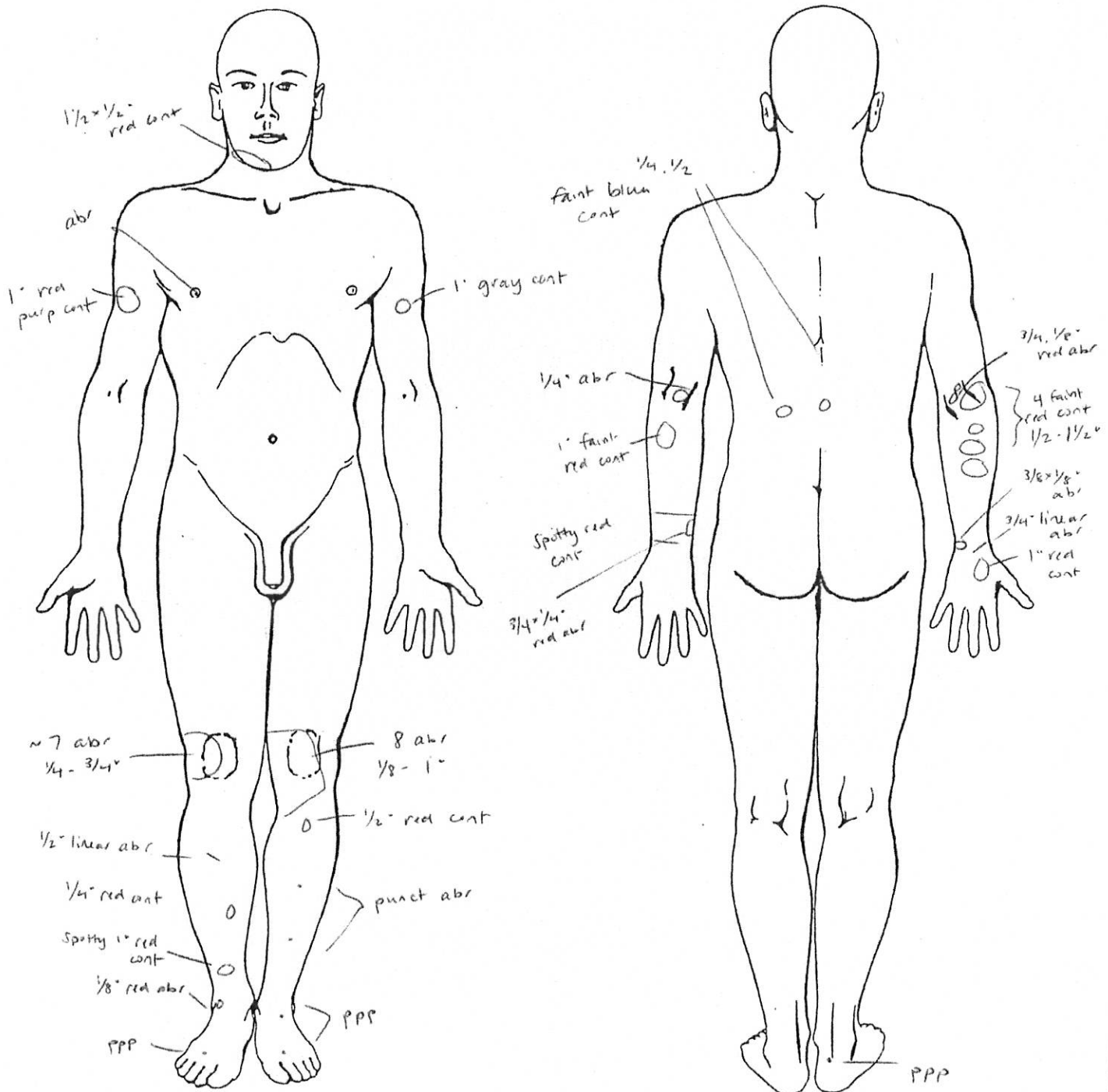
AUTOPSY TECH:

28. Part I. Immediate cause		
28. Part II. Other significant and contributory conditions		
22d. How injury occurred	3. Date of death	24c. Hr. of death M.
	24d. Date pronounced	24e. Time pron. M.
21 Manner of Death NATURAL ACCIDENT SUICIDE HOMICIDE UNDETERMINED PENDING _____		

THE SOUTHWESTERN INSTITUTE OF FORENSIC SCIENCES
AT DALLAS

Name Timpa Anthony Case No. 1b-14001

Age _____ Date _____



For report only:

Case No: 16-14601

Names: Timpa, Anthony

INTERNAL EXAMINATION

Brain 1450 g
 Heart 480 g
 R. Lung 860 g
 L. Lung 820 g
 Liver 1420 g
 Spleen 380 g
 R. Kidney 170 g
 L. Kidney 180 g
 _____ g

R. Pleural 0 ml
 L. Pleural 0 ml
 Pericardial 0 ml
 Peritoneal 0 ml

1 fl.oz. (U.S.)
= 29.573 ml

Stomach 10 ml
dark brown liquid

Bladder 20 ml
yellow

Gallbladder 10 ml
green brown

Body wall fat _____ in. (max)

Appendix present absent

Uterus

Tubes 0

Ovaries

HEAD

CENTRAL NERVOUS SYSTEM

NECK

CAVITIES

CARDIOVASCULAR dark outer myo &
 pale inner
 1.4, 1.4, 0.3 dilated

RESPIRATORY 11 & cong

HEPATOBIILIARY fatty

LYMPHORETICULAR liquid spleen

URINARY 0.5 cm corneal cyst R kid

GENITAL

GASTROINTESTINAL

ENDOCRINE

MUSCULOSKELETAL

MISCELLANEOUS

Special notes:

This section of form is for natural disease only.



Toxicology Laboratory

SOUTHWESTERN
INSTITUTE OF FORENSIC SCIENCES
AT DALLAS

2355 North Stemmons Freeway
Dallas, Texas 75207

Telephone: 214-920-5966
Fax: 214-920-5812

TOXICOLOGY ANALYSIS TEST REPORT

SWIFS Case Number: IFS-16-14001-0005

August 29, 2016

Agency: Emily Ogden
Forensic Pathology
Southwestern Institute of Forensic Sciences
2355 N. Stemmons Fwy.
Dallas, TX 75207

Case of: Anthony Alan Timpa

Evidence Submitted:

The following items were received by the Laboratory from Forensic Pathology:

- 007: Biohazard Bag
- 007-001: Blood, femoral - gray top tube
- 007-002: Blood, femoral - gray top tube
- 007-003: Blood, femoral - gray top tube
- 007-004: Blood, femoral - gray top tube
- 007-005: Vitreous - red top tube
- 007-006: Skeletal muscle - plastic tube
- 007-007: Blood, subclavian - red top tube
- 007-008: Urine - red top tube

Blood, postmortem

Acid/Neutral Screen (GC/MS)

hydroxy oxcarbazepine detected (007-004)

Alcohols/Acetone (GC)

negative (007-002)

Alkaline Quantitation (GC/FID)

trazodone: 0.04 +/-0.01 mg/L (Item# 007-001)

bupropion: 0.15 +/-0.03 mg/L (Item# 007-001)

Alkaline Screen (GC/MS)

dihydrobupropion detected (007-003)

hydroxybupropion detected (007-003)

levamisole detected (007-003)

demethylvenlafaxine detected (007-003)

Cocaine and Metabolites (GC/MS)

cocaine: 0.647 +/-0.084 mg/L (Item# 007-001)

ecgonine methyl ester: 0.378 +/-0.045 mg/L (Item# 007-001)

benzoylecgonine: 0.843 +/-0.126 mg/L (Item# 007-001)

Vitreous

Alcohols/Acetone (GC)

negative (007-005)

Electrolytes (Analyzer)

sodium: 139 +/-3 mEq/L (Item# 007-005)

potassium: >20.0 +/-0.6 mEq/L (Item# 007-005)

chloride: 115 +/-2 mEq/L (Item# 007-005)

glucose: 72 +/-6 mg/dL (Item# 007-005)

urea nitrogen: 22 +/-2 mg/dL (Item# 007-005)

Note: A blood specimen was sent to NMS for oxcarbazepine metabolite quantitation.

Other Tests Performed:

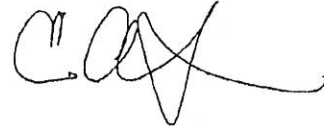
Blood, postmortem
007-004

Immunoassay screening was performed for cannabinoids, opiates, cocaine metabolite, and, if positive, quantitative results are reported above.

Quantitation is reported at a coverage probability of 95.45%.



Sarah Hughes
Primary Analyst



Erin Spargo, Ph.D., F-ABFT
Technical Reviewer



NMS Labs

CONFIDENTIAL

3701 Welsh Road, PO Box 433A, Willow Grove, PA 19090-0437

Phone: (215) 657-4900 Fax: (215) 657-2972

e-mail: nms@nmslabs.com

Robert A. Middleberg, PhD, F-ABFT, DABCC-TC, Laboratory Director

Toxicology Report

Report Issued 08/25/2016 14:02

To: 60762
SW Institute of Forensic Sciences
Attn: Dr. E. Todd
2355 N. Stemmons Freeway
Dallas, TX 75207

Patient Name TIMPA, ANTHONY ALAN
Patient ID IFS-16-14001
Chain 11971756
Age 32 Y DOB 06/05/1984
Gender Male
Workorder 16254094

Page 1 of 2

Positive Findings:

Table with 4 columns: Compound, Result, Units, Matrix Source. Row 1: 10-Hydroxycarbazepine, 13, mcg/mL, 001 - Blood

See Detailed Findings section for additional information

Testing Requested:

Table with 2 columns: Analysis Code, Description. Row 1: 3265B, Oxcarbazepine/Eslicarbazepine Acetate as Metabolite, Blood

Specimens Received:

Table with 6 columns: ID, Tube/Container, Volume/Mass, Collection Date/Time, Matrix Source, Miscellaneous Information. Row 1: 001, Clear Vial, 1 mL, 08/13/2016 11:00, Blood

All sample volumes/weights are approximations.

Specimens received on 08/19/2016.



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Workorder 16254094
Chain 11971756
Patient ID IFS-16-14001

Page 2 of 2

Detailed Findings:

Analysis and Comments	Result	Units	Rpt. Limit	Specimen Source	Analysis By
10-Hydroxycarbazepine	13	mcg/mL	0.50	001 - Blood	LC-MS/MS

Other than the above findings, examination of the specimen(s) submitted did not reveal any positive findings of toxicological significance by procedures outlined in the accompanying Analysis Summary.

Reference Comments:

- 10-Hydroxycarbazepine (Licarbazepine; Oxcarbazepine/Eslicarbazepine Acetate Metabolite) - Blood:

Oxcarbazepine (Trileptal®) is an anticonvulsant drug indicated for use as monotherapy or adjunctive therapy in the treatment of partial seizures in patients with epilepsy. Daily oral dosages of oxcarbazepine range from 1200 to 2400 mg per day in adults and from 900 to 1800 mg per day in children.

Eslicarbazepine Acetate (Aptiom®) is an anticonvulsant drug approved for use as an adjunctive therapy in the treatment of partial seizures in patients with epilepsy. Daily oral dosages of eslicarbazepine acetate range from 800 to 1200 mg per day in adults.

Both drugs are rapidly metabolized by the liver to 10-hydroxycarbazepine (licarbazepine), which is responsible for most of the pharmacologic activity. The therapeutic range for 10-hydroxycarbazepine is 10 - 35 mcg/mL, which are representative serum concentrations in patients treated with the parent drugs.

The reported blood to plasma ratio of 10-Hydroxycarbazepine is 1.2 - 1.4.

One case of a fatal overdose with oxcarbazepine reported 92 mcg/mL of 10-hydroxycarbazepine.

This test is not chiral specific. The reported concentration represents racemic 10-Hydroxycarbazepine in patients who have taken Oxcarbazepine (Trileptal®) and S-10-Hydroxycarbazepine in patients who have taken Eslicarbazepine Acetate (Aptiom®).

Chain of custody documentation has been maintained for the analyses performed by NMS Labs.

Unless alternate arrangements are made by you, the remainder of the submitted specimens will be discarded six (6) weeks from the date of this report; and generated data will be discarded five (5) years from the date the analyses were performed.

Analysis Summary and Reporting Limits:

All of the following tests were performed for this case. For each test, the compounds listed were included in the scope. The Reporting Limit listed for each compound represents the lowest concentration of the compound that will be reported as being positive. If the compound is listed as None Detected, it is not present above the Reporting Limit. Please refer to the Positive Findings section of the report for those compounds that were identified as being present.

Acode 3265B - Oxcarbazepine/Eslicarbazepine Acetate as Metabolite, Blood

-Analysis by High Performance Liquid Chromatography/
TandemMass Spectrometry (LC-MS/MS) for:

Compound	Rpt. Limit	Compound	Rpt. Limit
10-Hydroxycarbazepine	0.50 mcg/mL		