



OFFICE OF THE MEDICAL EXAMINER
701 W. Jefferson St.
Phoenix, AZ 85007

MEDICAL EXAMINER REPORT

DECEDENT: Dustin Deford

CASE: 13-04431

DATE OF EXAMINATION: 07/02/2013

TIME: 1058 Hours

PERSONS PRESENT AT EXAMINATION

Lieutenant Tom Boelts, Yavapai Sheriff's Office
Deputy Jerry Payne, Arizona Forestry Division

PATHOLOGICAL DIAGNOSES

- I. Fire-related injuries:
 - A. Diffuse 2nd to 3rd degree burns with partial sparing of the distal lower extremities.
 - B. History of being a firefighter caught in a wildfire.

- II. Toxicology:
 - A. Carboxyhemoglobin, 16% saturation (pleural fluid).
 - B. Volatiles:
 - 1. Brain: Positive for Benzene, Toluene, and Xylene.
 - 2. Lung: Positive for Benzene.
 - 3. Ethanol measured at 0.01 g% (trace amount) in the pleural fluid.
 - C. Negative for screened drugs of abuse.

PATHOLOGICAL DIAGNOSES CONTINUED.

CAUSE OF DEATH: Fire related injuries
MANNER: Accident

9/6/13
Date Signed

Mark Shelly
MARK SHELLY, DO
MEDICAL EXAMINER

III. Vitreous fluid electrolyte analysis: Non-contributory.

IV. Evidence of natural disease: None identified.

V. Postmortem changes: As noted below.

REPORTED CIRCUMSTANCES OF DEATH

On July 1, 2013, Yavapai County officials requested assistance from the Maricopa County Office of the Medical Examiner with the medicolegal death investigations of 19 firefighters who died in the Yarnell Hill wildfire on June 30, 2013. Under the Maricopa County Manager's authority and direction, the Maricopa County Office of the Medical Examiner examined the firefighters' remains for the purpose of forensic identification and postmortem evaluation. The Maricopa County Office of the Medical Examiner also agreed to provide consultative services to investigating authorities and the Yavapai County Medical Examiner. The Yavapai County Medical Examiner agreed it will certify the firefighters' death certificates. The following Maricopa County Office of the Medical Examiner case numbers were designated for this incident: 13-04425, 13-04426, 13-04427, 13-04428, 13-04429, 13-04430, 13-04431, 13-04432, 13-04433, 13-04434, 13-04435, 13-04436, 13-04437, 13-04438, 13-04439, 13-04440, 13-04441, 13-04442, and 13-04443.

The decedent was involved in fighting a forest fire and sustained thermal injuries.

EXTERNAL EXAMINATION

The body is received in a zippered body pouch secured by evidence seal 025550.

CLOTHING AND PERSONAL EFFECTS

The body is received in a prone position, covered in what is reported to be an emergency fire shelter. The body is clad in the items of clothing and accompanied by the personal effects as detailed in the property inventory list.

EVIDENCE OF MEDICAL INTERVENTION

None identified.

EVIDENCE OF TRAUMA

Fire related injuries: There are diffuse 2nd and 3rd degree burns from the head to the lower extremities, with partial sparing of the distal lower extremities bilaterally. No definitive soot deposition is identified in the proximal and distal airways.

DUSTIN DEFORD

13-04431

SCARS, TATTOOS AND OTHER IDENTIFYING BODY FEATURES

No tattoos or scars are identified.

GENERAL EXTERNAL EXAMINATION

The unembalmed body is that of a male 73 inches in length and weighing 203 pounds. The body demonstrates diffuse changes of decomposition, including skin slippage, green discoloration, marbling, and bullae formation. Rigor mortis is present and livor mortis cannot be ascertained due to thermal and decomposition changes. The scalp hair is red, and eye color cannot be determined due to thermal injuries. Contact lenses are present. Facial hair is present in a beard and mustache pattern. Dentition is good both upper and lower. The tongue is protruding and the lips are edematous. There are no acute oral mucosal lesions. The trachea is in the midline. The thorax is well developed and symmetrical. The abdomen is flat with no palpable intra-abdominal masses. The external genitalia are those of a normal male. There is bloating of the penis and scrotal sac. The extremities are well developed and symmetrical with no significant edema or deformity.

INTERNAL EXAMINATION

The body is opened by a standard Y-shaped thoracoabdominal incision. All viscera occupy their appropriate anatomic relationships and demonstrate moderate to severe changes of decomposition. Subcutaneous adipose tissue ranges up to 2.0 cm in thickness over the abdominal wall. Serous surfaces are smooth and glistening throughout. There are no adhesions in the body cavities. There is red-brown fluid present in the pleural cavities.

CARDIOVASCULAR SYSTEM

The 325-gram heart occupies its usual mediastinal site. The external configuration is unremarkable. The epicardial surfaces are smooth and glistening. All major vessels arise in their appropriate anatomic relationships. The coronary arteries arise normally with no significant atherosclerotic stenosis. The myocardium is firm, red-brown without areas of softening, hemorrhage or gross scarring. No abnormal communications exist between the cardiac chambers. The cardiac valves have thin, pliable leaflets. The valve circumferences are appropriate to the caliber of the cardiac chambers. The valve cusps and surfaces are free of fusion or vegetations.

The aorta is of normal caliber with all major arterial branches arising in their appropriate anatomic relationship. Elasticity is normal. The intimal surfaces are smooth, without aneurysm formation or dissection. No systemic venous abnormalities or thrombi are present.

DUSTIN DEFORD

13-04431

RESPIRATORY SYSTEM

The lungs each weigh 850 grams. The upper and lower airways are patent and of normal caliber. The pleural surfaces are smooth and glistening. The parenchyma is well expanded, light pink to dark red-purple, exuding moderate to large amounts of blood and frothy fluid. There are no areas of induration, consolidation, hemorrhage or gross scarring. The pulmonary vessels are patent and of normal caliber.

DIGESTIVE/HEPATOBIILIARY SYSTEM

The oropharynx is grossly normal and unobstructed. The esophagus is of normal caliber with a smooth, white mucosal lining. The gastroesophageal junction is well defined. The stomach has intact mucosal surfaces and the lumen contains no gastric contents. No areas of ulceration, erosion, or hemorrhage or scarring are present. The small and large intestines are unremarkable. The appendix is present. The lobular tan pancreas is firm, without areas of fat necrosis, gross hemorrhage or space-occupying lesions. The pancreatic ducts are patent and of normal caliber.

The 1225-gram liver has a smooth intact capsule, covering red-brown parenchyma. No localizing masses, lesions or areas of hemorrhage are evident on external or cut surfaces. The intrahepatic and extrahepatic ducts are patent and of normal caliber. The gallbladder contains viscid bile. The gallbladder mucosa is grossly normal.

GENITOURINARY SYSTEM

The kidneys each weigh 150 grams. They are grossly similar. The capsules strip with ease from the smooth, red-brown cortical surfaces. The cortices are sharply delineated from the medullary pyramids. The calyces, pelves and ureters are unremarkable. The renal vessels are patent and of normal caliber.

The urinary bladder contains no urine. The mucosal surfaces are flat and pink-tan. The prostate and seminal vesicles are unremarkable.

HEMATOPOIETIC SYSTEM

The 150-gram spleen occupies its usual anatomic site, with an intact, smooth and glistening capsule covering dark purple, moderately firm parenchyma. Regional lymph nodes have their usual distribution and appearance.

ENDOCRINE SYSTEM

The thyroid and adrenal glands are grossly not remarkable.

DUSTIN DEFORD

13-04431

NECK

The cervical spine is structurally intact. The hyoid bone and thyroid cartilage are intact. There are no hemorrhages in the strap muscles or soft tissues of the neck. The upper airway is patent.

MUSCULOSKELETAL SYSTEM

The bony framework, supporting musculature and soft tissues are unremarkable.

NERVOUS SYSTEM

The scalp is reflected in the usual fashion. There are no contusions, lacerations, or abrasions. There is no skull fracture. The 1400-gram brain is covered by thin, clear, delicate leptomeninges. The dura mater and falx cerebri are intact. There is good preservation of cerebral symmetry without flattening of gyri or widening of sulci. Convolutional patterns remain intact. External landmarks are readily identified. There is no evidence of herniation or either diffuse or localized swelling. The cerebral vessels are intact with no evidence of aneurysm or thrombosis. Atherosclerotic changes are not identified. Multiple coronal sections of cerebrum, cerebellum, and brain stem reveal no localized hemorrhages, masses, or lesions. The ventricular system is symmetrical, non-dilated and filled with clear fluid. The basal ganglia are grossly normal. The atlanto-occipital articulation is grossly normal.

TOXICOLOGY SPECIMENS

Samples of the following are collected and submitted for toxicological testing: Pleural cavity fluid, vitreous fluid, bile, brain, spleen, liver, kidney, and psoas muscle (see Toxicology Report).

FINAL SUMMARY AND OPINION

Based on the autopsy findings and investigative history, as available to me, it is my opinion that Dustin Deford, a 24-year-old male, died as a result of Fire Related Injuries. Per report and investigation, the decedent was involved in fighting a forest fire and sustained thermal injuries. Autopsy examination demonstrated extensive significant burns. Toxicology testing was positive for elevated Carboxyhemoglobin, consistent with the circumstances surrounding the death.

The manner of death is Accident.

MES/hyf
D: 7/03/13
T: 7/03/13

DUSTIN DEFORD

13-04431

The Maricopa County Medical Examiner's Office is required by statute (A.R.S. § 11-594(A)(2) and (4)) to certify the cause and manner of death following completion of the death investigation of each case over which it assumes jurisdiction, and to promptly execute a death certificate, on a form provided by the state registrar of vital statistics, indicating the cause and manner of death. The form provided by the state registrar of vital statistics includes five manners of death: homicide, suicide, accident, natural, and undetermined. The determination of manner of death is a forensic determination by the pathologist predicated upon the totality of all then-known forensic evidence and other circumstances surrounding the cause of death; it is not a legal determination of criminal or civil responsibility of any person(s) for the death.

MARICOPA COUNTY OFFICE OF THE MEDICAL EXAMINER
REPORT OF TOXICOLOGICAL EXAMINATION

Case Number: 13-04431
Decedent: DUSTIN JAMES DEFORD
Date Submitted: 07/02/2013
Report Date: 07/26/2013

Specimens Collected: VITREOUS, KNOWN HEAD HAIR, NASAL SWAB, PLEURAL FLUID, BLOT/FILTER PAPER, CAVITY BLOOD, BILE, KIDNEY, LIVER, SPLEEN, LUNG, PSOAS MUSCLE, BRAIN

Medical Examiner: MARK SHELLY, DO

RESULTS*:

Vitreous: None detected for ethanol, methanol, isopropanol and acetone


Pleural Fluid: Positive for
Ethyl alcohol 0.01 g% (trace amount)
Carboxyhemoglobin (16% saturation)
None detected for methanol, isopropanol, acetone, amphetamine, methamphetamine, phencyclidine, cocaine, benzoylecgonine, methadone, morphine, codeine, benzodiazepines, barbiturates, antihistamines, phenothiazines, tricyclic antidepressants, fentanyl, oxycodone, and acid neutral drugs

Brain: Positive by GC/MS for
Benzene
Toluene
Xylene

Lung Positive by GC/MS for
Benzene

Bile: None detected for amphetamine, methamphetamine, phencyclidine, cocaine, methadone, codeine, antihistamines, phenothiazines, and tricyclic antidepressants

*If results are not listed for any specimen(s), that/those specimen(s) is/are deemed to be on "HOLD"


Norman A. Wade
Laboratory Director

Jurisdictional Agency: YAVAPAI SO
By: svp. Tox.1/2000. DAWN

