

HILLSBOROUGH COUNTY NEWS
August 7, 2009

FOR IMMEDIATE USE

For more information, contact:

**Lori Hudson, Director,
Communications Department
Phone: (813) 307-8388**

Billy Mays Final Autopsy Results and Cause of Death

On June 29th an autopsy was conducted by Associate Medical Examiner Dr. Leszek Chrostowski on the body of William Mays, who was found dead in Tampa on June 28th. Because of hip pain Mr. Mays had prescriptions for tramadol, and more recently, for hydrocodone. Both are narcotic analgesic drugs. He had a family history of heart disease.

At that time the autopsy findings were released but the cause-of-death had not been determined. All tests have now been completed and the cause of death has been determined.

The autopsy revealed hypertensive and arteriosclerotic disease of the heart.

Toxicological tests detected ethyl alcohol, three narcotic analgesic drugs, two benzodiazepine drugs, and a metabolite of cocaine.

The ethyl alcohol was at a low concentration consistent with social consumption of a few beverages.

The detected narcotic drugs were hydrocodone, oxycodone, and tramadol. All were in therapeutic or subtherapeutic concentrations.

The benzodiazepine drugs detected in blood were alprazolam and diazepam. Metabolites of both were detected in urine. Both drugs were in therapeutic or subtherapeutic concentrations.

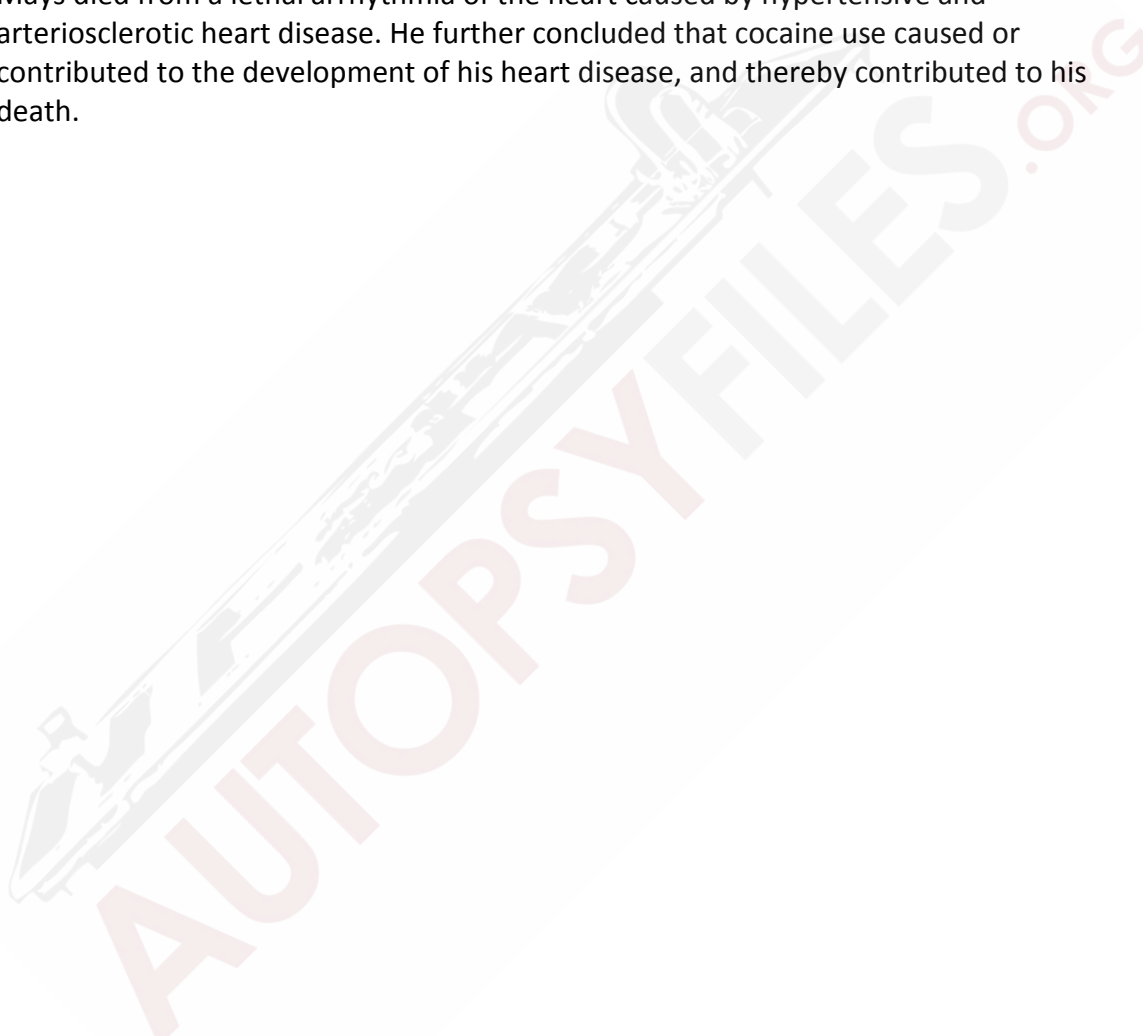
The detected cocaine metabolites were benzoylecgonine and ecgonine methyl ester. A metabolite is a related compound that is the result of a drug being broken down or transformed into a different drug by the body. These test results were confirmed by an outside reference laboratory.

Mr. Mays was not intoxicated by any of these substances at the time he died. From the presence of metabolites of cocaine and the absence of cocaine itself, it was concluded

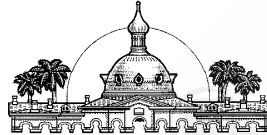
that Mr. Mays used cocaine in the few days prior to death but not immediately prior to death.

Cocaine can raise the arterial blood pressure, directly cause thickening of the wall of the left ventricle of the heart, and accelerate the formation of atherosclerosis in the coronary arteries.

Based on all the investigative information, including the known circumstances, autopsy findings, microscopic findings, and toxicology tests, Dr. Chrostowski concluded that Mr. Mays died from a lethal arrhythmia of the heart caused by hypertensive and arteriosclerotic heart disease. He further concluded that cocaine use caused or contributed to the development of his heart disease, and thereby contributed to his death.



HILLSBOROUGH COUNTY, FLORIDA



MEDICAL EXAMINER DEPARTMENT

11025 NORTH 46TH STREET

TAMPA, FLORIDA 33617

813-914-4500

Report of Diagnosis and Autopsy
on

William Darrell Mays

File 09-04082

OPINION

Final Diagnosis:

Atherosclerotic and hypertensive heart disease
Left ventricular myocardial hypertrophy
Coronary atherosclerosis
Cocaine use
Narcotic analgesia for avascular necrosis of hip
(anamnestic)
Intracranial pseudoaneurysm at the optic chiasm
Sigmoid diverticulosis

Cause of Death:

Hypertensive and Atherosclerotic Heart Disease

Contributory Cause of Death:

Cocaine Use

Manner of Death:

Natural

Leszek Chrostowski, M.D.,
Associate Medical Examiner

Date Signed

Death: 28 Jun 2009 at 0753 hrs
5823 Bowen Daniel Dr. #1204
Age: 50 years

Autopsy: 29 Jun 2009
11025 North 46th St, Tampa
Performed by:
Leszek Chrostowski, M.D.

DESCRIPTION OF AUTOPSY FINDINGS

EXTERNAL EXAMINATION: 29 June 2009 at 0850 hours

The body is that of a well developed and nourished adult white man with a large-boned, muscular body habitus, appearing the stated length of 6'0", and compatible with the reported age.

Condition of the Body: The body is cold to touch, with fully developed rigor mortis. Livor mortis is fixed, purple-red, and extends over the anterior surfaces of the body where it is associated with multiple Tardieu spots. On the face, the livor mortis is on the right side. There is also fixed livor mortis on the posterior aspect of the body. The body is neither decomposed, nor embalmed.

Identifying Marks: The body has no tattoos. Scars are described below.

Head and Face: The scalp hair is black with gray roots, straight, and measures 6 centimeters in maximal length. Facial hair consists of approximately 2 centimeters long beard and mustache, also black; there is gray stubble on the neck anteriorly.

Eyes: The irides are brown. The pupils have equal diameter. The corneae are clouded and have mild corneal arches. The conjunctivae are congested due to livor mortis, with rare Tardieu spots in the palpebral portions. The sclerae are white. The upper eyelid of the left eye medially has a small subconjunctival yellow-white nodule measuring 0.3 x 0.2 x 0.1 centimeters.

Nose: The external nares contain a small amount of dried bloody purge. The nasal skeleton is palpably intact.

Mouth: The lips have no injuries. The oral cavity has natural dentition in good repair, and contains a small amount of white foam. The oral mucosa is congested, and has intact frenula, no injuries, and no petechial hemorrhages in the oral vestibule. It is lined with clear mucus.

Ears: The external ears are free of foreign material. The earlobes are not pierced.

Neck: The neck is symmetrical and unremarkable, with no palpable masses or external injuries.

Chest: The thorax is well developed and symmetrical.

Abdomen: The abdomen is somewhat protuberant and soft, and has no palpable masses. The right side of the abdomen in the inguinal region at the right iliac crest has an acrochordon that measures 1.1 x 0.7 x 0.6 centimeters.

External Genitalia: The external genitalia are those of a normal adult uncircumcised man, with no injuries. The testes are descended into the scrotal sac and are unremarkable to palpation.

Lower Extremities: The lower extremities are symmetrical and have no anatomic abnormalities. The right thigh on the anterolateral aspect distally has a red abrasion that measures 0.6 x 0.2 centimeters. The posterolateral aspect of the left thigh proximally, i.e. the left hip area, has an oblique scar that measures 8 centimeters in length and is slightly erythematous.

Upper Extremities: The arms, forearms, wrists, and hands have no anatomic abnormalities. The fingernails are intact.

Back: The back is unremarkable. The anus has no abnormalities.

Therapy: Four electrocardiogram electrodes are adherent to the skin, including one posterolaterally on the left shoulder, one on the right side of the back in the scapular area, and one on each leg on the left lateral aspect.

INTERNAL EXAMINATION: 29 June 2009 at 0910 hours

Head: The galea aponeurotica is unremarkable. The vault and the base of the skull have no fractures. There are no epidural or subdural hemorrhages. The dura mater and falx cerebri are intact. The brain weighs 1,550 grams and has symmetrical cerebral hemispheres. The external surfaces of the brain are not edematous. The arachnoid membranes are thin and delicate, with congested arachnoid vessels, and conceal clear, unremarkable cerebrospinal fluid. The cranial nerves are intact. Just anteriorly to the optic chiasm in the mid sagittal plane is a nodule measuring approximately 1.0 centimeters in diameter; its cut surfaces reveal a cystic globular lesion filled with tan-red mass resembling thrombus.

The cyst does not have any grossly apparent attachment to any nearby blood vessel, and is tightly adherent to the surface of the optic chiasm, which is slightly attenuated. The cyst is also not attached to the infundibulum of the pituitary gland; it is anterior and inferior to the optic chiasm, pushing the chiasm's anterior portion slightly upward. The cerebral arteries have no atherosclerosis. The cut surfaces of the cerebral hemispheres, brainstem, and cerebellum have no structural lesions. The cerebral ventricles are of normal caliber and shape.

Neck: The cervical spine, laryngeal cartilages, and hyoid bone have no fractures or other abnormalities. The strap muscles of the neck have no hemorrhages. The tongue is normal, with no hemorrhages, bite marks, or other lesions. The epiglottic and laryngeal mucosa has no petechiae or edema, and is lined with clear mucus.

Body Cavities: The serosal cavities have no adhesions or abnormal collections of fluid. The pneumothorax test is negative. The organs are congested, in normal anatomic positions, and have no decomposition.

Cardiovascular: The aorta has mild to moderate atherosclerosis, with plaques occupying an estimated 10-15% of the intimal surface in the abdominal portion of the vessel; the plaques are small, but have calcific complications. A 2 x 1.6 centimeter plaque just proximal to the bifurcation of aorta has calcification with ulceration and a small mural thrombus. The venae cavae and their major tributaries return to the heart in the usual distribution and are unremarkable, with no thrombosis. The pulmonary trunk and pulmonary arteries are patent, have no thromboemboli, and have smooth intimal surfaces. The medium size arteries are unremarkable. The large vessels are not distended and contain partially clotted dark red blood.

The heart weighs 580 grams. The weight increase is due to concentric left ventricular myocardial hypertrophy. The epicardial surfaces are smooth and glistening. The coronary arteries arise normally, have patent orifices, and follow a right dominant distribution. The proximal portion of the anterior descending artery has an eccentric, yellow, focally calcified atherosclerotic plaque; it is 1.8 centimeters long and results in a focal stenosis estimated at up to 75%. The remaining coronary arteries have no significant atherosclerosis. The myocardial cut surfaces are firm, brown-red, and have no grossly distinguishable focal lesions. The

parietal and valvular endocardium is smooth, thin and unremarkable. The valvular rings, leaflets and cusps are normal. The atrial and ventricular septa are intact. The chambers of the heart are not dilated. The thickness of myocardium measures 1.7 centimeters at the left ventricular wall, 1.6 centimeter at the interventricular septum, and 0.4 to 0.5 centimeters at the right ventricular wall.

Pulmonary: The upper and lower airways are patent and are lined with clear mucus. The distal bronchial tree contains a small amount of froth. The bronchial mucosal surfaces are yellow-red, smooth, and have no petechiae. The right and left lungs weigh 1,230 and 950 grams, respectively. They have smooth pleural surfaces. The cut surfaces of the pulmonary parenchyma are red, congested and sodden, have no discrete lesions, and exude a large amount of bloody liquid and froth. The pulmonary arteries have smooth intimal surfaces and no thromboemboli.

Hepatobiliary System: The liver weighs 3,380 grams and has a smooth intact capsule. The liver parenchyma is moderately firm, brown-red, congested, and has no lesions except for a few areas of very mild patchy yellow discoloration visible on the cut surfaces. The gallbladder contains a measured 22 milliliters of viscid green bile. Its mucosa is velvety and unremarkable. The extrahepatic biliary tree is patent. The pancreas has tan-brown lobulated parenchyma, clear ducts, and no lesions. It weighs 160 grams.

Hemic and Lymphatic: The spleen weighs 250 grams and has a smooth, intact capsule. The cut surfaces of the splenic parenchyma are dark maroon, very soft, almost liquefied, with inapparent lymphoid follicles. The lymph nodes and tonsils are not enlarged and have unremarkable cut surfaces. The vertebral marrow is red and homogenous, with no gross evidence of abnormalities. The thymus is fat replaced.

Genitourinary: The right kidney weighs 300 grams and the left 310 grams. The kidneys have smooth, thin renal capsules that strip with ease. The cortical surfaces are brown-red and smooth. The cortices are congested, well delineated from the underlying medullary pyramids, and have no lesions. The calyces, pelves, and ureters are not dilated and have unremarkable lining mucosa. There is no significant increase of hilar adipose tissue in the kidneys. The urinary bladder contains a measured 200 milliliters of cloudy yellow urine. Its mucosa is white-tan, smooth, slightly trabecular, and has no lesions. The urethra is unremarkable.

The prostate gland is of normal size and has monomorphic cut surfaces. The seminal vesicles, testes and spermatic cords have unremarkable cut surfaces, with no hemorrhages or other abnormalities.

Endocrine: The pituitary and adrenal glands have no abnormalities. The thyroid gland weighs 20 grams, is red, congested, and has granular cut surfaces with no lesions.

Digestive: The esophagus is lined by smooth gray-white mucosa, with no lesions. The gastric mucosa has the usual rugal folds. The stomach lumen contains a measured 600 milliliters of gray liquid with non-identifiable particulate food. The duodenum has no lesions. The small and large bowels are unremarkable except for a few small diverticuli in the sigmoid colon, with no inflammation. The vermiform appendix is without note.

Musculoskeletal: The clavicles, sternum, spine, ribs, and pelvis have no fractures or other abnormalities. The musculature is normally developed.

LC:kr 06/30/09

MICROSCOPIC DESCRIPTION

Heart: Myocyte hypertrophy. Focal moderate interstitial fibrosis, mostly perivascular. Moderate hyperplastic arteriolosclerosis, i.e. hypertensive small vessel disease. No inflammation or infarction.

Lung: Congestion and edema. Autolytic changes and post mortem bacterial overgrowth. Scattered deposits of anthracotic pigment. No inflammation.

Liver: No significant histologic change; a few lymphoid aggregates in the portal regions.

Cystic lesion from the anterior cranial fossa: Cystic structure filled with degraded red blood cells, ranging from intact erythrocytes to amorphous eosinophilic material, partially hyalinized and with dystrophic calcifications. Its fibrous capsule has hemosiderin deposits, hemosiderophages, and perivascular lympho-plasmocytic infiltrates. The structure has a pushing border; the adjacent nervous tissue is unremarkable. Special stains reveal no elastic fibers in the cyst wall. Consistent with pseudoaneurysm.

HISTOLOGICAL INDEX

Slide 1, 4, 5, 6: Heart.

Slide 2: Cystic lesion from anterior cranial fossa.

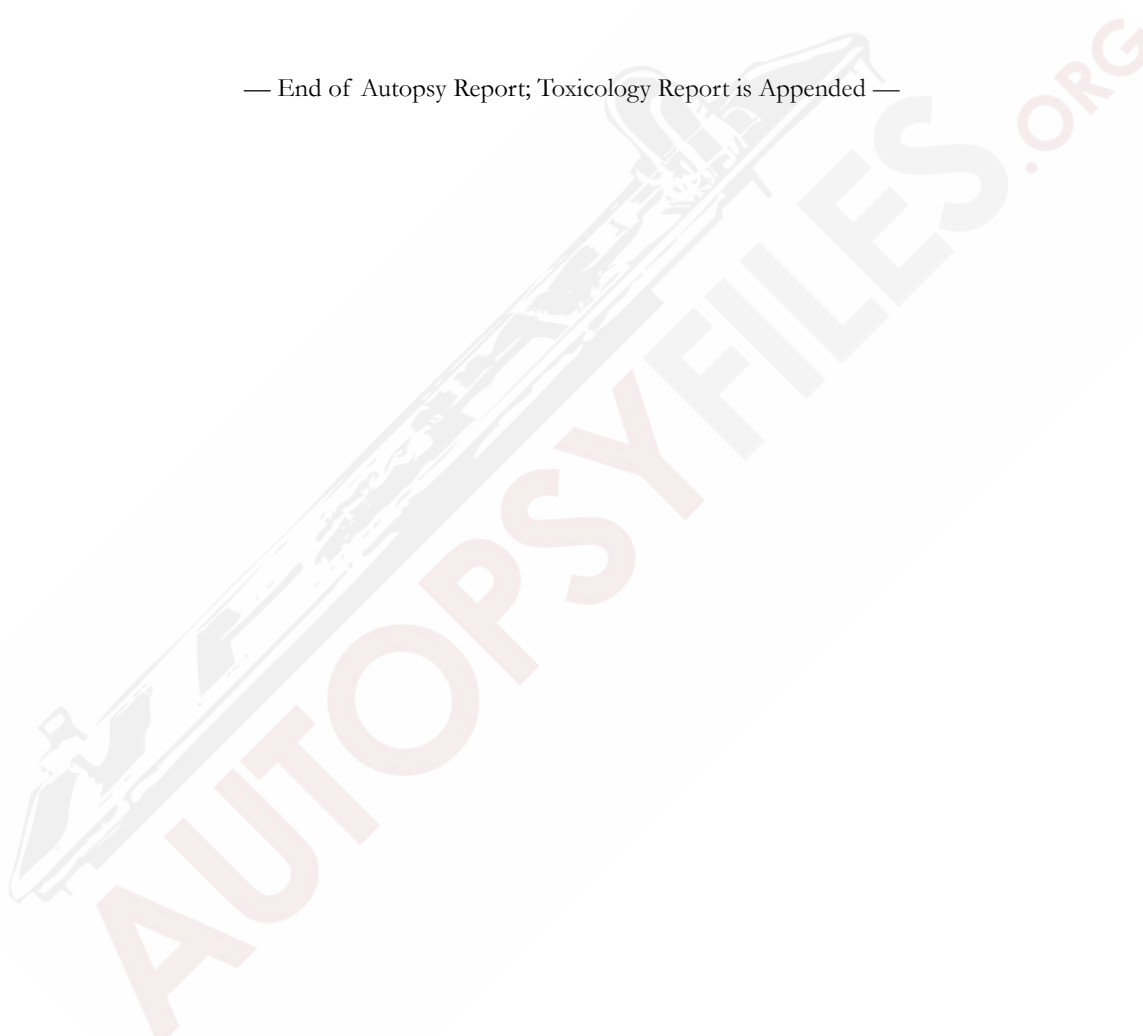
Slide 3: Heart, lung, liver.

Slide 7: Anterior descending coronary artery.

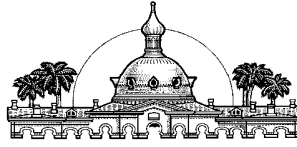
Slide 8, 9: Lungs.

LC

— End of Autopsy Report; Toxicology Report is Appended —



HILLSBOROUGH COUNTY, FLORIDA



MEDICAL EXAMINER DEPARTMENT
TOXICOLOGY REPORT

July 27, 2009

Name of decedent: Mays, William Darrell **Case No:** 09-04082
Medical examiner: Leszek Chrostowski, MD **Date of autopsy:** 29 June 2009

The following toxicology procedures were performed:

Procedure	Specimen type
Volatiles by GC/MS	Ocular Fluid
Volatiles by GC/MS	Peripheral Blood
ELISA	Heart Blood
Thin Layer Chromatography	Urine
Opiates by LCMS	Heart Blood
Cocaine and metabolites by LCMS	Peripheral Blood
Cocaine and metabolites by LCMS	Ocular Fluid
Cocaine and metabolites by LCMS	Urine
Cocaine and metabolites by GCMS (via Wuesthoff)	Urine
Benzodiazepines by GCMS (via Wuesthoff)	Peripheral Blood
Benzodiazepines by GCMS (via Wuesthoff)	Urine
Tramadol by GCMS (via Wuesthoff)	Peripheral Blood

The following substances were detected and confirmed:

Substance	Concentration	Specimen type	Method
Ethanol	0.07 g/dL	Ocular Fluid	GCMS
Ethanol	0.05 g/dL	Peripheral Blood	GCMS
Hydrocodone (Free)	<0.02 mg/L	Heart Blood	LCMS
Hydrocodone (Total)	0.03 mg/L	Heart Blood	LCMS
Oxycodone (Free)	0.14 mg/L	Heart Blood	LCMS
Oxycodone (Total)	0.16 mg/L	Heart Blood	LCMS
Tramadol	0.07 mg/L	Peripheral Blood	GCMS
Alprazolam	0.05 mg/L	Peripheral Blood	GCMS

Substance	Concentration	Specimen type	Method
Diazepam	0.12 mg/L	Peripheral Blood	GCMS
Nordiazepam	0.18 mg/L	Peripheral Blood	GCMS
Benzoylecgonine	0.02 mg/L	Peripheral Blood	LCMS
Benzoylecgonine	0.06 mg/L	Ocular Fluid	LCMS
Benzoylecgonine	2.0 mg/L	Urine	LCMS
Benzoylecgonine	1.8 mg/L	Urine	GCMS
Ecgonine Methyl Ester	0.46 mg/L	Urine	GCMS
Alpha-Hydroxyalprazolam	0.41 mg/L	Urine	GCMS
Alprazolam	0.27 mg/L	Urine	GCMS
Nordiazepam	0.16 mg/L	Urine	GCMS
Temazepam	0.35 mg/L	Urine	GCMS

The following volatiles were not detected or confirmed:

Acetone
Isopropanol
Methanol

The following drugs were not detected or confirmed:

6MAM	Fentanyl	Olanzapine
Amphetamines	Fluoxetine	Oxazepam
Barbiturates	Hydromorphone	Oxymorphone
Cannabinoids	Ketamine	Paroxetine
Chlordiazepoxide	Lorazepam	Phencyclidine
Cocaethylene	Meperidine	Propoxyphene
Cocaine	Methadone	Romifidine
Codeine	Methamphetamine	Sertraline
Desalkylflurazepam	Midazolam	Tricyclic Antidepressants
Dextromethorphan	Morphine	

Julia M. Pearson, PhD, DABFT

Date

Chief Forensic Toxicologist

Key to abbreviations

ELISA	Enzyme-linked immunosorbant assay
GCMS	Gas chromatography mass spectrometry
LCMS	Liquid chromatography mass spectrometry