

CLINICAL RECORD

AUTOPSY PROTOCOL

DATE AND HOUR DIED 18 November 1978	A. M. P. M.	DATE AND HOUR AUTOPSY PERFORMED 15 December 1978	A. M. P. M.	CHECK ONE		
				FULL AUTOPSY	HEAD ONLY	TRUNK ONLY
PROSECTOR Joseph M. Ballo, LTC, MC, USA		ASSISTANT Douglas S. Dixon, MAJ, MC, USA		X		

CLINICAL DIAGNOSES (Including operations)

This body (later identified as Ann Elizabeth Moore) was one of a large number of bodies discovered at Jonestown, Guyana on or about 19 November 1978 by members of the Guyanese Defense Force. The scene, as reported in various news media and by government officials of Guyana, was said to be grotesque in the extreme. A few witnesses, again reported in various news media, said that most of these people, some willingly and others unwillingly, had ingested poison(s) which fairly quickly led to their deaths.

After inquiries into the cause and manner of death by Guyanese officials, including Dr. Leslie Mootoo, forensic pathologist to the government of Guyana, the bodies, which were rapidly putrefying in the hot and humid tropical climate of Guyana, were released by the government of Guyana and transported by the United States Air Force from Jonestown, Guyana to Dover AFB, Delaware between 23 and 26 November 1978. Efforts to identify the bodies and add to the store of reliable information about the causes and manners of their deaths were carried on at Dover AFB from 27 November 1978 onward.

PATHOLOGICAL DIAGNOSES

1. Gunshot wound of head, close-contact, perforating with extensive laceration of brain and multiple comminuted fractures of skull. Date and Time of Death: The evening of 18 November 1978. Place of Death: Jonestown, Guyana.
 - a) Entrance: right temple
 - b) Course: right to left, above to below (less than 10°) and horizontal.
 - c) Exit: left temple.
 - d) Missile: not recovered.
 2. Toxicology:
 - a) Cyanide - muscle - 0.2mg/100gm.
 - b) Chloroquine - liver - 7.3mg/100gm.
 3. Extensive postmortem decomposition with maggot infestation.
 4. Embalming artifacts with trocar wounds of upper and lower extremities and right hypogastrium.
 5. Postmortem resection of both cheeks and left temporo-mandibular joint.
 6. Minimal early systemic atherosclerosis.
 7. Circular discoloration on anterior aspect of left shoulder; ? etiology.
- Cause of Death: Acute Cyanide Poisoning; Gunshot wound of head, laceration of brain.
 Manner of Death: Undetermined.

APPROVED SIGNATURE: *[Signature]* DOUGLAS S. DIXON, MAJ, MC, USA

JOSEPH M. BALLO, LTC, MC, USA	DOUGLAS S. DIXON, MAJ, MC, USA				
MILITARY ORGANIZATION (If App. required)	AGE	SEX	RACE	IDENTIFICATION NO.	AUTOPSY NO.
	24	Female	Caucasian		

PATIENT'S IDENTIFICATION (For typed or written entries give Name—last, first, middle, grade, date, hospital or medical facility)	REGISTER NO.	WARD NO.
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MOORE, ANN ELIZABETH
 AFIP #1680343

AUTOPSY REPORT - (A001)

AFIP #1680343

Name: ANN ELIZABETH MOORE
Age: 24 years
Date of Birth: 12 May 1954
Sex and Race: Female, Caucasian
Date of Death: 18 November 1978
Date of Autopsy: 15 December 1978
Prosecutor: Joseph M. Ballo, LTC, MC, USA
Witnesses: Robert L. Thompson, CAPT, MC, USN
Douglas S. Dixon, MAJ, MC, USA
Kenneth H. Mueller, LTCOL, USAF, MC
Rudiger Breitenecker, M.D.

This is one of the bodies (A001) transported by the USAF from Jonestown, Guyana to Dover Air Force Base, Delaware.

An autopsy is performed on the remains of a body having the recovery number A001. This body has been identified as that of Ann Elizabeth Moore. This identification has been effected through comparison of antemortem and post-mortem fingerprints and dental records (including X-rays).

Examination of Clothing and Personal Effects:

The following items of clothing are present on the body when first examined and have been previously cataloged:

1. Shirt with key ring and keys
2. Tan pants with a key chain and keys
3. Pocket knife with folding blade present in pants
4. White panties
5. White socks
6. Blue tennis shoes with "Annie Moore" on them.

External Examination:

The body is that of a well-developed, well-nourished Caucasian female measuring 69" in length and weighing 134 lbs. when clothed. The remains are decomposed and there is evidence of embalming with a strong odor of formalin present in the tissues.

The hair is brown, straight and moderately long. The ears are not pierced. The color of the irides cannot be ascertained. The dentition is complete and in excellent repair. The nose is unremarkable. The neck is supple, the breasts free of masses. The abdomen is scaphoid. The pubic hair is dark brown and the external genitalia are unremarkable. The extremities are unremarkable.

Rigor mortis is not present. Livor mortis is not apparent. In addition to the evidence of embalming, the body has been externally preserved with lime and hardening compound.

Evidence of Embalming:

In both antecubital fossae, in the right hypogastrium, over the anterior aspect of both thighs and on the medial aspect of both calves are 1/4" diameter regular perforations of the skin with no evidence of tissue reaction surrounding them.

Evidence of Injury:

On the right side of the head, superior to a line running between the right eye and right external auditory meatus is a large stellate laceration of the scalp. The center of the laceration is at a point 1" anterior to the external auditory meatus and 1+1/2" caudad to the vertex. The laceration extends anteriorly for 3" and posteriorly for 2+1/2" from the center. The laceration extends caudad for 2+1/2" running anteriorly to the right ear. Along this segment, on the posterior margin, 1+3/4" from the center of the laceration is an irregular defect, roughly circular in shape and measuring 1/4 X 1/2". Caudad to this defect for a distance of 7/8", and posterior for a distance of 1/2" is an irregular area of darkening and roughening of the skin, subcutaneous tissues and underlying muscle.

On the left side of the head, superior to a line running between the left eye and left external auditory meatus is a large stellate laceration of the scalp. The center of the laceration is at a point 1" posterior to the external auditory meatus and 2" caudad to the vertex. The laceration extends posterior for 2", anteriorly for 2+1/2" and then anterior and cephalad for an additional 2+1/4", and caudally for 1+1/4".

The right cheek has been incised posteriorly from the angle of the mouth for a distance of 1+3/4" and the left cheek has been incised posteriorly from the angle of the mouth for a distance of 2+1/4" and the temporomandibular joint has been separated surgically on the left.

On the anterior aspect of the left shoulder, 13" from the vertex, is a circular area of parchment-like discoloration of the skin, brown in color and 1/2" in diameter.

There is no other evidence of external injury to the body.

The scalp is incised posteriorly to the lacerations. The calva is seen to be shattered over its entire extent. Nine fragments of bone are recovered. When these are reconstructed in situ, an irregular bony defect is present under the area of blackening and discoloration on the right temple. This measures 1+1/4" X 1" in its greatest extent. On the left side is an irregular defect 2+1/2" by 2" underlying the laceration in the left temple. At the junction of the posterior and inferior margin of the bony defect on the left is a semicircular defect measuring 3/4" in diameter. There is beveling here on the bony margins on the exterior table of the skull. No metallic fragments are noted in the cranial cavity. The brain is absent except for a few fragments of semiliquid, green-gray, foul, putrid material in the posterior fossa. Running across the sphenoid bone, through the sella turcica is an extensive fracture of the base of the skull which extends laterally to both the inferior margins of the shattered calva. The entire frontal skeleton of the face hinges through this defect. Numerous hair-line fractures extend into both anterior and posterior fossae.

There is no other evidence of trauma on the internal examination of the body.

X-ray Findings:

X-ray studies taken of the thorax, abdomen, pelvis, upper and lower extremities are unremarkable. X-ray studies taken of the skull show extensive shattering of the calva with displacement of the fragments. No retained metallic fragments are visualized.

Internal Examination of Body:

The body is opened with the usual Y-shaped thoracoabdominal incision. The internal organs occupy their usual positions, their relationships are normal and the body cavities are unremarkable.

Neck organs: The trachea, larynx and strap muscles are removed en bloc. The hyoid bone is intact. There is no hemorrhage into the strap muscles of the neck. The thyroid is autolytic but appears otherwise unremarkable. The cartilages of the larynx are intact.

Heart: The heart weighs 240 grams. The organ is flabby and there is vesiculation and evidence of gas production in an otherwise normal myocardium. The coronary arteries are free of atheromatous involvement, the valves are of normal size and configuration, and the chambers are of normal size.

Great vessels: The aorta has a few scattered atherosclerotic plaques around the orifices of the major vessels. The carotids are normal, the pulmonary arteries free of clots.

Lungs: The left lung weighs 330 gms, the right 250 gms. They are of greater than normal consistency posteriorly and caudally where they are fixed by preserving fluid. The pulmonary arteries and veins are normal. The bronchi are normal.

Gastrointestinal tract: The stomach has been perforated and drained. The gastric mucosa is absent, the duodenum appears normal. The intestines are parchment-like and empty. The liver weighs 949 grams, is flabby and on cut section, the normal architecture is obscured by numerous fine (1 mm or less) vesiculations. The gallbladder is present but empty.

Genitourinary tract: The kidneys weigh 290 grams in aggregate. The ureters are unremarkable. The bladder mucosa appears absent, the bladder is empty. The ovaries are present and appear reduced in size. The uterus is firm, measures 3" X 1+1/2" X 1+1/2". It is unremarkable on section. The cervix is nulliparous without lacerations. The vaginal mucosa is rugose.

Endocrine organs: The pituitary is not present. The adrenals are soft but are of normal size and appearance. The pancreas is markedly autolyzed.

Hematopoietic system: The spleen weighs 85 grams and is markedly autolyzed.

Microscopic Examination:

Slides of kidney, lung, heart and uterus show no abnormalities other than evidence of postmortem decomposition with moderate postmortem gas production.

A slide prepared from the area of parchment-like discoloration on the left shoulder shows apparent condensation and coagulation of the superficial dermis in a continuous layer, without apparent tissue reaction.

Three slides prepared from the tissue defect on the right temple show focal areas of condensation of the superficial dermis without apparent tissue reaction.

Special Studies: Portions of tissue from the defect on the right temple, examined by scanning electron microscopy show no definitive contamination by primer residue.

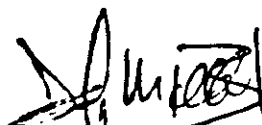
Summary:


The postmortem findings in this case offer two causes of death. The first is a lethal level of cyanide (in muscle), the second is a mutilating gunshot wound of the head with presumed extensive cerebral damage. The measured level of cyanide is within the range of concentrations found in tissues of proven cases of acute cyanide poisoning. Although the production of cyanide in the postmortem period cannot be completely ruled out, the strong circumstantial chain of evidence linking this agent to the deaths in Jonestown cannot be ignored. These items of evidence include the listing of cyanide in the drug inventory of the Jonestown Medical Department, photographs in the media of open bottles of cyanide and reports by the consultant forensic pathologist to the government of Guyana, Dr. Leslie Mootoo, that cyanide was recovered from syringes at the scene and from the stomach contents of 65 victims.

The shooting was surely not antecedent to the administration of cyanide. The possibilities then are a self-inflicted gunshot wound during an agonal period following cyanide ingestion/injection or a coup de grâce gunshot wound inflicted by another party. Incapacitation following cyanide poisoning is not necessarily immediate. The use of multiple modalities for effecting suicide is not uncommon. Notwithstanding this, the absence of witnesses, and the bizarre circumstances surrounding this death make it impossible to choose between the two alternatives with any degree of confidence. Thus, both are listed as "causes of death".

Similarly, the circumstances and the presence of two lethal injuries obscure the manner of death. Had there only been cyanide present, the presence of a note indicating intent at the scene (as reported in the media) would have allowed a strong presumption of suicide. However, since it cannot be determined if the gunshot wound was self-inflicted or not, and if not, whether it was inflicted before or after death by another person, the possibility of homicide cannot be entirely eliminated. Hence, the manner of death must be left undetermined.

The presence of chloroquine is an incidental finding and most probably represents malarial prophylaxis.


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Chief, Missile Trauma Pathology
Branch


DOUGLAS S. DIXON, M.D.
Major, MC, USA
Chief, Division of Forensic Pathology



PATIENT IDENTIFICATION	PLEASE USE AFIP ACCESSION NUMBER IN ALL CORRESPONDENCE
AFIP ACCESSION NUMBER	1690343
MOORE, ANN E.	
PLEASE INFORM US OF ANY PATIENT IDENTIFICATION ERRORS	

ADDRESS REPLY TO THE DIRECTOR
ATTN. AFIP - CPL-T

18 April 1979

CONSULTATION REPORT ON CONTRIBUTOR MATERIAL

Specimens Submitted: Lung, kidney, muscle and liver.

AFIP DIAGNOSIS:

REPORT OF TOXICOLOGIC EXAMINATION

1. All tissues submitted were putrefied; the body was embalmed prior to autopsy.
2. Acid, neutral drugs - LIVER - None Found.
3. Chloroquine (7.3mg/100gm) was identified and quantitated in the liver by uv spectrophotometry and gas chromatography.
4. Cyanide (0.2mg/100gm) was quantitated from muscle using a NiCl_2 procedure.

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