**UNIVERSITY OF NAIROBI – SCHOOL OF MEDICINE**

**DEPARTMENT OF HUMAN PATHOLOGY**

**CLINICAL AUTOPSY REPORT**

**BIODATA**

Name:- Fridah Ndinda

Age:- 38

Sex:- Female

Date of Death:- 03.02.2021

Time of Death:- 10:15am

Place of Death:- KNH Ward 8D

Date of autopsy:- 05.02.2021

Time of autopsy:- 11:45am

Autopsy performed at:- KNH Farewell Home

Autopsy reference number:- A/129/21

Type of autopsy:- Clinical

Pathologist in charge:- Dr. Waithera Mbau

**CLINICAL SUMMARY**

The deceased who was aged 38 years fell sick (had convulsions and low GCS) and was taken to KNH where she died while undergoing treatment at Ward 8D.

**IDENTIFICATION**

Prior to autopsy, the deceased was identified by her sister Florence Mueni and her brother Stephen Munuve.

**EXTERNAL EXAMINATION**

The decedent (length, 166cm; weight, unknown; fundal height 22 weeks) is a well-developed, obese, phenotypically African female appearing about the same age as the recorded age of 38. The unembalmed, unclothed body is identified by a tag attached to the right ankle (KNH 01084/2021). There is no rigor mortis present in the jaws, neck, back and extremities. A violaceous posterior lividity pattern is present. The body is cold. The decedent is normocephalic and without apparent trauma about the face or scalp. The scalp hair is black and is about 5cm length. The bones of the forehead, nose, cheeks, and jaw are intact to palpation. The irides are of brown color, and the pupils are equal and round with unknown measurement bilaterally. The conjunctivae are pink, and the sclerae are yellow. The ears are well-formed and symmetrical, and the external auditor canals are without discharge. The nose is well-formed and symmetrical. The external nares are patent and without haemorrhage or discharge. The lips are intact. The mouth contains a small amount of seromucous secretion and no obstructing materials or lesions. The native teeth are present and in good repair. The buccal mucosa is pink and shows no signs of trauma. The neck is symmetrical. There is no palpable crepitus or hypermobility. The trachea is palpably straight and in the midline. The chest is symmetrical and without palpable crepitus or bony deformity. The breasts are soft without palpable masses, skin retraction, or nipple discharge. The abdomen appears distended, fundal height a 22 weeks without palpable evidence of organomegaly or external trauma. Pubic hair is present in the usual female distribution. The external genitalia are unremarkable and atraumatic. There is no palpable cervical, axillary, or inguinal lymphadenopathy/other. The upper extremities are symmetrical and well developed. The fingernails are thin. The nail beds show peripheral cyanosis. There is no clubbing. The lower extremities are symmetrical and well muscled. There is bipedal edema. The toenails are thin. The soles of the feet are soft. The posterior trunk shows a symmetrical external contour. The spine appears straight. The anus is closed and atraumatic. The skin color is dark brown. The skin shows no irregularity, poor turgor and elasticity/eruptions/rashes.

**SCARS AND IDENTIFYING MARKS**

None

**EVIDENCE OF THERAPEUTIC INTERVENTION**

The following medical paraphernalia are in place: right femoral intravenous catether.

**EVIDENCE OF EXTERNAL TRAUMA**

None

**INTERNAL EXAMINATION**

**PRIMARY INCISION, NECK, AND BODY CAVITIES**

A standard Y-shaped thoracoabdominal incision reveals a moderate subcutaneous fat thickness at the mid abdominal level. There is no evidence of haemorrhage in the anterior muscles and soft tissues of the neck. The carotid sheaths are intact. The anterior cervical spine is palpably unremarkable. No obstructive material or lesions are present in the glottis or larynx. The hyoid bone and laryngeal cartilage are normally formed and intact without evidence of fractures or haemorrhage. The breast tissue consists of a small amount of white stroma within yellow fat. The sternum and ribs of the anterior chest are intact. The mediastinum is midline. The pericardial sac contains 20mL of serous fluid; its surfaces are glistening and smooth. The parietal pleural surfaces are glistening and smooth except for a few easily lysed apical fibrous adhesions. There are bilateral serosanguinous pleural effusions; right 250ml, left 300ml. There are no pneumothoraces. The domes of the diaphragm are at the fifth rib bilaterally. Omental and mesenteric fat is abundant. The peritoneal surfaces are glistening and smooth; there are no unusual fluid collections in the abdominal space, and the organs occupy their usual positions.

**CARDIOVASCULAR SYSTEM**

The **heart** (370g) is normally formed and located in its usual position in the left chest, with its apex pointing to the left. There is a moderate amount of epicardial fat. The epicardial surface is glistening and smooth. The atrial chambers are dilated. The interatrial septum is intact. The atrioventricular connections are present, and the leaflets of the mitral valve are calcific. The chordae tendineae are thin. The interventricular septum is intact. The myocardium is firm and brown. The right and left ventricular free walls measure 10mm and 113mm, respectively. The outflow tracts are widely patent, and the semilunar valves each contain three thin and delicate cusps. The pulmonary artery is of appropriate caliber and configuration; its intimal surface is glistening and intact. The coronary arteries course over the surface of the heart in the usual fashion. The coronary arteries are patent.

The ascending **aorta** is of the usual caliber and arches left before descending along the left side of the vertebral column. The major arteries arise from the aortic arch and descending aorta in the usual configuration and are patent. The intimal surface of the aorta is smooth. The venae cavae and other major veins are patent and thin walled.

**RESPIRATORY SYSTEM**

The **trachea** is of normal/other caliber and courses in the usual fashion.

The **lungs** (right, 550g; left, 435g) contain the usual lobes and fissures. The visceral pleural surfaces are slightly opaque with a small amount of anthracotic pigment. The parenchyma is soft and pale red. Air spaces are not enlarged. Respiratory mucosa is smooth and pale, and the lumen contains a small amount of clear mucus. The vessels are patent.

**GASTROINTESTINAL SYSTEM**

The **oesophagus** courses in the usual fashion to enter the stomach; its mucosal surface is white and intact. The squamocolumnar junction is sharp.

The **stomach** contains 200ml of digested food. An ethanol-like odor is not apparent. Gastric mucosa is intact with tall rugal folds. The wall is pliable. The pylorus is contracted.

The **small intestine** is of the usual caliber, and its walls are pliable.

The **cecum** is freely mobile in the right lower quadrant.

The **appendix** is retrocecal and not inflamed.

The **colon** contains formed brown stool and is of generous calibre. No focal mass lesions are identified throughout the gastrointestinal tract.

**HEPATOBILIARY SYSTEM**

The **liver** (1495g) has a sharp anterior margin; its surface is intact with multiple petechial haemorrhages. The parenchyma is red-brown and firm with the usual lobular pattern. Intrahepatic bile ducts and vessels are patent.

The **gallbladder** is present and contains approximately 30mL of viscid dark green bile. The wall is thin and pliable with reticulated intact mucosa. The common bile duct is patent into the duodenum.

**PANCREAS**

The **pancreas** (110g) is gray and located in its usual position/other within the duodenal sweep. Its parenchyma has a firm architecture with moderate fat in the tail. The pancreatic ducts are of the usual calibre.

**URINARY SYSTEM**

The **kidneys** (right, 135g; left, 135g) are located in their usual retroperitoneal position and have capsules that strip with the usual ease to reveal surface with multiple petechial haemorrhages. The parenchyma is red-brown with clearly demarcated corticomedullary junctions. A moderate amount of peripelvic fat is present. The collecting systems are not dilated. The pelves and ureter are patent and not dilated. Their mucosa is smooth.

The **urinary bladder** is empty. The bladder mucosa is intact.

**REPRODUCTIVE SYSTEM (FEMALE)**

The **uterus, tubes, and ovaries** are in their usual relative positions within the pelvis and appear appropriate for age. The cervical os is elongated.

The endometrium is gravid with a male fetus weighing 895g. The fallopian tubes are narrow and without adhesions.

The ovaries are gray and convoluted with firm grey parenchyma containing a few scattered cortical corpora lutea and albicantia.

**LYMPHORETICULAR SYSTEM**

The **thymic tissue** is ill defined; its parenchyma largely replaced by fat.

The **spleen** (155g) has a smooth, intact capsule. Splenic parenchyma is dark red. The follicles are small, and trabeculae are delicate. There is no lymphadenopathy.

The **mediastinal lymph** nodes are soft and black.

Other **lymph nodes** are small and gray. Rib and vertebral marrow is red, moist, and ample.

**ENDOCRINE SYSTEM**

The **pituitary** fills the sella turcica.

The **thyroid gland** is symmetrical, red-brown, and firm.

The **adrenal glands** have uniform yellow cortices separated from the medullary gray by a thin, red line.

**MUSCULOSKELETAL SYSTEM**

**Cartilage** is firm. The **bone** is hard. The vertebrae, ribs, pelvis, and long bones are intact without gross evidence of fracture or deformity. **Skeletal muscles** are red-brown, firm and appropriate mass for the decedent’s age and sex.

**HEAD AND CENTRAL NERVOUS SYSTEM**

Reflection of the **scalp** reveals no evidence of subgaleal haemorrhage. The underlying **calvarium** is intact and normal in thickness. The **dura** sinuses are patent. Cerebrospinal fluid is clear. The **brain** weighs 1285g. The leptomeninges are thin and transparent with no vascular congestion, subarachnoid haemorrhage, or exudate. The circle of Willis and other basal vasculature are intact and normally formed. The vessels are patent and thin walled. The cranial nerves are intact and normally distributed. The dorsal convexities of the brain are symmetrical with a well-developed gyral pattern. The brainstem and cerebellum show the usual external configuration. There is no localized external softening or contusion of the brain. There is displacement of the cingulate gyrus, and cerebellar tonsils.

**PLACENTA**

The placenta (210g) is intact. Attached to the placenta is a segment of white umbilical cord. Sections through the cord reveal three blood vessels. The placental membranes are thin, delicate, and translucent. The fetal surface is smooth and glistening. The maternal surface is dark red and consists of intact cotyledons. The parenchyma is dark red and spongy.

**OTHER INVESTIGATIONS**

Specimen from organs obtained for histopathological analysis i.e. heart, lung, GIT, liver, pancreas, thyroid gland, parathyroid gland, pituitary gland, adrenal gland, kidney, gonad, urinary bladder, breast, uterus, cervix, muscle, skin, nerve, spleen, lymph node, vertebrae including bone marrow and brain.

**SUMMARY**

The deceased, a 38 year old African female who presented with convulsions and a low GCS was admitted at Ward 8D. While receiving treatment in the ward, the patient was found unresponsive. She died of eclampsia with complications i.e. AKI (acute kidney injury) and liver involvement.

**CAUSE OF DEATH *(Reference WHO ICD 11)***

1. Immediate cause of death
2. Complications of pregnancy (WHO ICD 11 code JA21) due to
3. Eclampsia in pregnancy (WHO ICD 11 code JA25.0) due to
4. Severe pre-eclampsia (WHO ICD 11 code JA24.1)

**MANNER OF DEATH**

Unnatural (Accidental)

**DISCUSSION**

**JUSTIFICATION OF MANNER OF DEATH**

This was an unnatural death because it occurred as a result of external cause and was accidental because the patient was under medical observation where the intent was to help the patient’s condition.

**CLINICAL PATHOLOGICAL CORRELATION**

Pre-eclampsia is a condition that only occurs during pregnancy and is characterized by high blood pressure and signs of damage to other organ systems especially the liver and kidneys. It usually starts 20 weeks into the pregnancy in women whose blood pressure was previously normal. Severe pre-eclampsia causes eclampsia and HELLP (haemolysis, elevated liver enzymes and low platelet count) syndrome. Eclampsia is defined as new onset grand mal seizures and/or unexplained coma peripartum or postpartum in a woman with clinical features of pre-eclampsia. It manifests as one or more seizure where each seizure lasts about a minute. Seizure-induced complications include tongue biting, head trauma, broken bones, and aspiration. Other potential complications of eclampsia include:

1. Permanent neurologic damage from recurrent seizures or intracranial bleeding
2. Renal insufficiency and [acute renal failure](http://emedicine.medscape.com/article/777845-overview)
3. Fetal changes – abruptio placentae, [oligohydramnios](http://emedicine.medscape.com/article/405914-overview)
4. Hepatic damage and rarely hepatic rupture
5. Haematologic compromise and DIC
6. Increased risk of recurrent pre-eclampsia/eclampsia with subsequent pregnancy
7. Maternal or fetal death

**PREVENTION**

The patient should have been admitted in an obs/gyn ward where she would have received specialized care by a specialist in the field as compared to being admitted in a medical ward where pregnancy is not their speciality hence the patient would not have received the best quality care.

Prevention of pre-eclampsia/eclampsia:

1. Aspirin blocks platelet aggregation and vasospasm in pre-eclampsia, and it may be effective in preventing pre-eclampsia.
2. If a patient has pre-existing hypertension then the condition should be well controlled.
3. The high-risk population (previous pregnancy complicated by pre-eclampsia, pre-eclampsia in a first degree relative) should receive supplementation during pregnancy with a special food containing L-arginine and antioxidant vitamins which may reduce the risk of pre-eclampsia.
4. Use little or no salt in meals
5. Drink 6-8 glasses of water per day
6. Avoid fried and junk food
7. Regular exercise
8. Enough rest
9. Avoid alcohol and beverages containing caffeine

**BIBLIOGRAPHY**

1. <https://emedicine.medscape.com/article/253960-overview>
2. <https://americanpregnancy.org/healthy-pregnancy/pregnancy-complications/preeclampsia-927/>
3. <https://www.mayoclinic.org/diseases-conditions/preeclampsia/symptoms-causes/syc-20355745#:~:text=Preeclampsia%20is%20a%20pregnancy%20complication,blood%20pressure%20had%20been%20normal>.

