How Can the Department of Family Medicine Benefit from the Laboratory Physicians

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How Can the Department of Family Medicine Benefit from the Laboratory Physicians.

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OUTLINE

- Preamble
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- Pathology as a Career in Medicine
- Evolution of Pathology
- Common Terminology in Pathology
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- Takeaway Points
- Recommendations & Way Forward
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The medical profession has been from time immemorial, and universally still remains among the most learned and noble professions of the world.

There are originally three primary learned professionals:
1. The Physician
2. Scribe (Lawyer)
3. Priest.
The physician was the foremost and it is the duty of every doctor to maintain this primary position in the society.
PREAMBLE- 3

- Medicine is an incredibly rewarding and respected career.
- It is a noble profession.
- It is exciting and dynamics.
- It is ultimately about helping people.
- It is putting someone else’s needs first and doing all that you can to improve their health and well being.
- It is far from an easy option.
- It takes years of study and hard work.
- The medical profession is concerned with integrity and committed to uphold a number of timeless values.
Pathology is the basis of medicine. Understanding pathology is critical to understanding the disease that you’re dealing with - Dr. Adrienne Morey

The Royal College of Pathologists of Australasia.
DEFINITION OF PATHOLOGY

- To most people, the word pathology connotes illness, probably death, and a pathologist is generally assumed to look after dead people.
- In reality, Pathology is the precise study and diagnosis of disease, both in living persons (Surgical, Cytological, and Molecular Pathology) and in the dead (Autopsy Pathology)
DEFINITION OF PATHOLOGY

- The word “Pathology” is derived from two Greek words- pathos meaning suffering, and logos meaning study.

- Pathology is, thus the scientific study of the structure, biochemical reaction and function of the body in disease state.
DEFINITION OF PATHOLOGY

- Pathology is same as Laboratory Medicine
- Each country or institution either use Pathology or Laboratory Medicine.
DEPARTMENTS IN LABORATORY MEDICINE OR PATHOLOGY

1. Anatomic Pathology & Forensic Medicine
2. Chemical Pathology & Immunology
3. Haematology & Blood Transfusion
4. Medical Microbiology & Parasitology
PATHOLOGY AS A CAREER IN MEDICINE

• Pathology is the medical speciality that provides a scientific foundation for medical practice.

• Pathology is one of the major investigative arms of modern Medical Science.

• It’s the bridge between the pre-clinical and the clinical.
The Relationship between Pathology & other aspects of Medicine

CLINICAL MEDICINE

PATHOLOGY

BASIC MEDICAL SCIENCES
PATHOLOGY AS A CAREER IN MEDICINE

- The knowledge and understanding of pathology is essential for all medical students and medical practitioners.
- Pathology is one of the major investigative arms of modern Medical Science.
PATHOLOGY AS A CAREER IN MEDICINE

- Pathologists function in four broad areas;
  1. Physicians
  2. Diagnosticians.
  3. as Teachers, and
  4. as Investigators/ Researchers.
MY FOCUS IN THIS PRESENTATION WILL BE ANATOMIC PATHOLOGY & FORENSIC MEDICINE. WE WOULD DISCUSS OTHER SPECIALTIES IN THE LABORATORY MEDICINE IN MY SUBSEQUENT PRESENTATIONS.
VARIOUS NAMES OF THE DEPARTMENT OF ANATOMIC PATHOLOGY IN DIFFERENT INSTITUTIONS GLOBALLY.

- Used interchangeably as Morbid Anatomy, Histopathology, Anatomic Pathology, Pathologic Anatomy and more recently Molecular Pathology.
CONCEPT OF WOMB TO THE TOMB.

- The discipline elicits some degree of fear among some people including surprisingly some doctors.
- Anatomic pathology takes care of homo sapiens from the womb to the tomb.
Available written records have documented the desire of mankind to know more about the causes, mechanisms and nature of diseases.

The answers to these questions have evolved over the centuries and these explained the evolution of pathology.
EVOLUTION OF PATHOLOGY

Basically divided into six periods:
1. Pre-historic period
2. Period of rational approach
3. Period of human anatomy
4. Period of gross pathology
5. Period of technology development & cellular pathology
6. Period of modern pathology.
COMMON TERMINOLOGY IN PATHOLOGY

- **Patient**: is the person affected by disease
- **Lesions**: are the characteristics changes in tissues and cells produced by disease in an individual or experimental animal.
- **Aetiology**: causal factors responsible for a disease. This answers the why of disease.
- **Pathogenesis**: the mechanism by which the lesions are produced. This answers the how of disease.
COMMON TERMINOLOGY IN PATHOLOGY

- Clinical features: the functional implications of the lesion. This could be divided into symptoms which are those felt by the patient and physical signs which are those discovered by the clinicians.

- Diagnosis: this is the combination of morphologic and functional changes with results of other investigations to arrive at a disease entity. This answers what is wrong.
DIAGNOSIS IN ANATOMIC PATHOLOGY

- NAKED-EYE OR GROSS EXAMINATION.

- HISTOLOGY OR MICROSCOPIC EXAMINATION.
COMMON TERMINOLOGY IN PATHOLOGY

- **Treatment**: this is the therapeutic intervention in the management of the disease. This may include supportive care in some cases.
- **Prognosis**: This is the outcome of the disease after treatment.
- **Prevention**: what should be done to avoid complication and spread of the disease.
Sub- divisions of Anatomic Pathology

- Surgical Pathology.
- Cytopathology.
- Forensic Medicine and Autopsy Pathology.
SURGICAL PATHOLOGY
Background

- Surgical Pathology is the aspect of Anatomic Pathology that responsible for the handling of biopsies.
- Biopsies are surgical specimens obtained from humans.
- The surgical pathologist plays a central role in the diagnosis of biopsies or of surgically removed tissues, particularly when tumor is suspected.
- Works closely with surgeons and other physicians in such cases.
Indications for Biopsy

- Inflammatory changes of unknown cause that persist for long periods
- Lesion that interfere with local function
- Bone lesions not specifically identified by clinical and radiographic findings
- Any lesion that has the characteristics of malignancy
Characteristics of lesions that raise the suspicion of malignancy.

- Erythroplasia - lesion is totally red or has a speckled red appearance.
- Ulceration - lesion is ulcerated or presents as an ulcer.
- Duration - lesion has persisted for more than two weeks.
- Growth rate - lesion exhibits rapid growth
- Bleeding - lesion bleeds on gentle manipulation
- Induration - lesion and surrounding tissue is firm to the touch
- Fixation - lesion feels attached to adjacent structures
Types of Biopsy

- The four major types of biopsy routinely used in and around the oral cavity are:
  - cytology,
  - aspiration biopsy,
  - incisional biopsy,
  - and excisional biopsy.
Oral Cytology

- Oral cytology is typically used as an adjunct to, not a substitute for, incisional or excisional biopsy procedures.
- Cytology allows examination of individual cells, but cannot provide the histologic features crucial for an accurate and definitive diagnosis.
- Developed as a diagnostic screening procedure to monitor large tissue areas for dysplastic changes.
- Lesions that lend themselves to cytologic examination may include: post-radiation changes, herpes, fungal infections, and pemphigus.
Procedures of cytological biopsy

- In a cytologic examination, the lesion is scraped repeatedly and firmly with a moistened tongue depressor or cytology brush.
- The cells are then transferred to and smeared evenly on a glass slide.
- The slide is immediately immersed in a fixing solution or sprayed with a fixative, such as hairspray.
- The cells can be stained with any of a myriad of laboratory preparations and examined under the microscope.
The Advantages and Disadvantages of oral cytological procedures include:

**Advantages**
- Cytology may be helpful when large areas of mucosal change are noted, or in areas with difficult surgical access

**Disadvantages**
- Not very reliable with many false positives.
- Expertise in oral cytology is not widely available
Aspiration biopsy is the use of a needle and syringe to remove a sample of cells or contents of a lesion.

The inability to withdraw fluid or air indicates that the lesion is probably solid.
Aspiration Biopsy

**Indications:**

- To determine the presence of fluid within a lesion
- To determine the type of fluid within a lesion
- When exploration of an intraosseous lesion is indicated
Aspiration

Procedures:

- An 18-gauge needle is connected to a 5 or 10 ml syringe and is inserted into the center of the mass via a small hole in the lesion.
- The tip of the needle may need to be positioned in multiple directions to locate a potential fluid center.
- The material withdrawn during aspiration biopsy can be submitted for pathologic examination and/or culturing.
• The inability to withdraw fluid or air indicates that the lesion is probably solid.
• A radiolucent lesion in the jaw that yields straw-colored fluid on aspiration is most likely a cystic lesion.
• If purulent exudate (pus) is withdrawn, then an inflammatory or infectious process should be considered.
• The aspiration of blood might indicate a vascular malformation within the bone.
• Any intrabony radiolucent lesion should be aspirated before surgical intervention to rule out a vascular lesion.
• If the lesion is determined to be vascular in nature, the flow rate (high versus low) should be determined because uncontrollable hemorrhage can occur if incised
Incisional Biopsy

- The intent of an incisional biopsy is to sample only a representative portion of the lesion.
- If the lesion is large or has many differing characteristics, more than one area may require sampling.
Incisional Biopsy
Indications of incisional biopsy

- whenever the lesion is difficult to excise because of its extensive size
- in cases where appropriate excisional surgical management requires hospitalization or complicated wound management.
Technique of Incisional Biopsy

- Representative areas are biopsied in a wedge fashion.
  - Margins should extend into normal tissue on the deep surface.
  - Necrotic tissue should be avoided.
  - The sample should be taken from the edge of the lesion to include surrounding normal tissue
  - It should be deep enough to include underlying changes of the surface lesion.
Incisional biopsy

Field block anesthesia

Includes normal skin
Close normal skin only

Closure
Punch biopsy
Punch biopsy

- Another tool that can be used for incisional or excisional purposes.
- Biopsy is especially well suited for diagnosis of oral manifestations of mucocutaneous and vesiculoulcerative diseases, such as lichen planus, pemphigus, etc.
Punch biopsy
Excisional Biopsy

Indications:

- Should be employed with small lesions. Less than 1 cm
- The lesion on clinical exam appears benign.
- When complete excision with a margin of normal tissue is possible without mutilation.
Technique

- An excisional biopsy implies the complete removal of the lesion.
- A perimeter of normal tissue (2-3 mm) surrounding the lesion is included with the specimen.
- Excisional biopsy should be performed on smaller lesions (less than 1 cm in diameter) that appear clinically benign.
- Pigmented and vascular lesions should be removed, if possible, in their entirety. This avoids seeding of the melanin producing tumor cells into the wound site or in the case of a hemangioma, allows the clinician to address the feeder vessels.
Exisional biopsy
Incisions

- Incisions should be made with a scalpel.
- They should be converging
- Should extend beyond the suspected depth of the lesion
- They should parallel important structures
- Margins should include 2 to 3mm of normal appearing tissue if the lesion is thought to be benign.
- 5mm or more may be necessary with lesions that appear malignant, vascular, pigmented, or have diffuse borders.
Handling of the Tissue Specimen

- special care should be undertaken to hold the specimen gently at the periphery of the sample.
- Injection of large amounts of anesthetic solution in the biopsy area, while providing hemostasis, can produce hemorrhage, which masks the normal cellular architecture.
- Infiltration of local anesthetic around the lesion is acceptable if the field is wide enough in relation to the lesion;
Handling of the Tissue Specimen

- Injection directly into the lesion should be avoided.
- Use of electrocautery to excise the specimen remains a common complicating factor in determining an accurate microscopic diagnosis.
- Heat produced by these units alters both the epithelium and the underlying connective.
- Small tissue biopsies to rule out malignancy are usually nondiagnostic if excised by electrocautery, as the presence of epithelial atypia is typically obscured.
- If electrocautery is to be used, the incision margin should be far enough away from the interface of the lesion to prevent thermal changes at that interface (2).
Specimen Care

- The specimen should be immediately placed in 10% formalin solution, and be completely immersed.
Margins of the Biopsy

- Margins of the tissue should be identified to orient the pathologist. A silk suture is often adequate. Illustrations are also very helpful and should be included.
Biopsy Data Sheet

- A biopsy data sheet should be completed and the specimen immediately labeled. All pertinent history and descriptions of the lesion must be conveyed.
Historical perspective

- Histopathology >100 years -
- Last 50 years birth of cytopathology - mainly exfoliative cytology
- Scandinavia 1950S -1960S ; Sodestroem and Franzen in Sweden and Lopez cardozo in Holland
- Performed by ‘professional hybrids’ - clinicians who used it for rapid diagnosis
FNAC - definition

- Aspiration of cells/ tissue fragments using fine needles (22, 23, 25 G); external diameter 0.6 to 1.0 mm
- 1.5 inches long needle (radiologists use longer needles)
- Diagnostic materials in the needle and not in the syringe even in cystic lesions
Clinical skill required

- Familiarity with general anatomy eg thyroid vs other neck swelling
- Ability to take a focused clinical history
- Sharp skill in performing physical examination eg solid vs cystic, benign vs malignant lesions
Clinical skill required -2

- Good knowledge in normal cellular elements from various organs and tissue and how they appear on smears eg fats cells vs breast tumour cells
- Comprehensive knowledge of surgical pathology
Clinical skill required - 3

- Ability to translate traditional tissue patterns of lesions to their appearance in smears
Who should do FNA?

- Clinicians
- Cytotechnologists
- Radiologists
- Pathologists

The one who examines the patients, does the aspiration, makes the smears, interprets the cytology is the best one to do FNA - PATHOLOGIST
Current status

- Palpable lesions
- Outpatients, in-patients
- Thyroid, breast, lymph nodes, salivary glands, soft tissue lumps...
- Lung, intra-abdominal and retroperitoneal by radiologic imaging: CT, ultrasound, fluoroscopy
ADVANTAGES

- Fast - early diagnosis
- Less pain, less trauma
- No anaesthesia
- Acceptable by patients and doctors
- Accurate
PAP Smear

- PAP smear sampling of cervix involves scraping of cervical surface and a portion of non-visualised cervical canal using various sampling devices.
Significance of Pap smear

- Detect precancerous & invasive cancer cervix cases in early stages
- Positive screeners can be selected for selective tests and management
- With treatment, progression of disease is halted. Thus morbidity associated with advanced cancer decreases
- Mortality reduces by 20-60 %.
- Helps us to study natural history of disease.
disasters “prevention is better than cure’- holds true for cervical cancer

This can be achieved by regular health check up and regular pap smear test

Pap- smear is cancer screening which is easy, painless and reliable method in which the discharge from vagina is taken on slide and sent for examination for presence of abnormal cells

Routine pap smear has reduced ca cx by 75% in developed world

Repeat pap is advised if it shows abnormal cells & than advised colposcopy & biopsy.

It can give early diagnosis of cancer before its sets in and hence early treatment can avoid disease
Transformation zone

Cervix develops from 2 embryonic sites

* from Mullerian duct - lined by columnar epithelium

* from urogenital plate - lined by stratified squamous epithelium

Point at which columnar and squamous epithelium meet is called as original squamo-columnar junction
PAP SMEAR

- The cells are taken from the cervix region by speculum & spatula, then smear is prepared which is then observed under microscope.
- It is not recommended in virgin females.
- Recommended in every 3 years to all female aged more than 30 years.
How to take a Pap Smear?

- Spatula is rotated through 360 degrees maintaining contact with ectocervix
- Do not use too much force [bleeding /pain]
- Do not use too less force [inadequate sample]
- Sample is smeared evenly on the slide and fixed immediately
- Both sides of spatula are to be smeared
How to take a Pap Smear?

- Endocervical sample is collected using an endocervical brush.
- Insert the cytobrush into canal, so that last bristles of brush are visible.
- Rotate the brush through 180 degrees. [more rotations increase the chance of bleeding]
- Sample is rolled on the slide and fixed.
Fixation of smear

- Fixation is done immediately with fixative like 95% alcohol or cytofix spray to avoid air drying.

- Spray should be kept at 10 inches, to avoid destruction of cells by propellant in the spray.

- Smear should monolayer for proper penetration of cell surface by fixative.
Liquid Based Cytology

- Several slides can be prepared from one smear
- Chlamydia, HPV testing can be done at later date
- Reduces the incidence of inadequate and repeat smears
INTRODUCTION TO FORENSIC MEDICINE
DEFINITION

- Forensic Medicine is the study of the Law as it relates to Medical Practice.
- Use of Medical knowledge for the purposes of the Law.
- Forensic derived from Forum: Latin word for the market place.
FORENSIC MEDICINE

1. Law relating to Medical Practice.

2. Clinical Forensic Medicine.

3. Toxicology.

4. Forensic Pathology.
1. LAW RELATING TO MEDICAL PRACTICE.

- Medical Acts and Medical Councils
- Medical Certificates
- Dangerous Drugs
- Medical Ethics:- Consent, Negligence, Secrecy, etc.
THE DOCTOR AND THE DEAD.

- Death certification only by Registered Medical Practitioners.
- SUSPENDED ANIMATION:
  1. Barbiturate Poisoning.
  2. Drowning.
  3. Electrocution.
  4. Hypothermia.
  5. Acute Alcohol Poisoning.
Drunk on morgue slab wakes up — singing

... & 2 docs drop dead from fright

How you can overcome those feelings of crippling shame

Couple wed — after living together 40 yrs
2. CLINICAL FORENSIC MEDICINE.

- Examination of the living for the purposes of the Law.
- All hospital cases are potential medico-legal cases.
- Ab initio cases include: Drunks; Sexual assault cases; Victims of accidents, traffic, domestic, industrial; Other assault cases.
3. TOXICOLOGY

- The study of signs and symptoms of Poisoning.

- The recognition of Poisoning in the Dead.
4. AUTOPSY PATHOLOGY
The Trajectory of Autopsy Pathology
Autopsy Pathology from Antiquity

From necromancy to witchcraft and other occult practices, man has always sought for the knowledge of the truth from among the dead, either by summoning their spirit or raising them bodily.
Search for truth among the dead

- King Saul was no exception. His infamous visit to Edor was to consult a familiar spirit in order to know the truth about the truth about his ineluctable fate from Samuel, who was already dead.
- The search for the truth among the dead continues till today both in the occult and among medical doctors.
Autopsy pathology is NOT a new practice, there was an account in the Holy Bible in the book of Ezekiel 37:1-7. In verse 3: “And he said unto me, son of man, can these bones live? And I answered, O Lord God, thou knowest.” This was the first public demonstration of autopsy pathology documented in history.
Definition of Autopsy

• Autopsy literally means to cut and see for oneself after which you reconstruct.

• Autopsy is the examination of the body after death to find the cause of death.

• The word autopsy is synonymous with necropsy and post mortem.
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The Objectives of Autopsy Pathology

( a ). To make a positive identification of the body and to assess the size, physique, and nourishment.

( b ). To determine the cause of death.

( c ). To determine the mode of dying and time of death.
The Objectives of Autopsy Pathology

( d ) To demonstrate all external and internal injuries.

( e ) To detect, describe, and measure any external and internal injuries.

( f ) To obtain samples for analysis, microbiological, and histological examination, and any other necessary investigations.
The Objectives of Autopsy Pathology

To retain relevant organs and tissues as evidence.

(h). To obtain photographs, and video films for evidence and teaching use.

(i). To provide a full written report of the autopsy findings.

(j). To offer an expert interpretation of those findings.

(k). To restore the body to the best possible cosmetic condition before release to the relatives.
Types of Autopsy

- Though medical conventions and legal systems vary considerably from country to country, there are generally two main types of autopsy:
  1. Hospital or Clinical or Academic Autopsy.
  2. Medico legal or Coronal or Forensic Autopsy.
The clinical autopsy is done on request by a Physician. This autopsy is done with permission / consent of the relatives / next of kin.

Clinical autopsy remains a valuable tool in the medical education and all medical students are required to assist at autopsy.
CLINICAL AUTOPSY

- It was the clinical autopsy that first identified potentially deadly diseases such as Lassa fever, Legionella disease, severe acute respiratory distress syndrome SARS.
- Clinical autopsy helped to define and improve the understanding of HIV and AIDS. Autopsy helps to explain the extent of disease that is not apparent to the Clinician.
CLINICAL AUTOPSY

- The clinical autopsy helps us to highlight unsuspected complications of management.
- It can help to determine the efficacy of drug therapy.
- We use it as a tool to monitor and audit the value of surgical techniques.
- The autopsy helps to detect clinical errors in diagnosis and management.
Clinical autopsy is very useful in medical audit.

The primary purpose of requesting for clinical autopsy is for our medical education.
STEPS IN AUTOPSY

1. External examination.
2. The first cut (Y incision).
3. Internal examination.
4. Removing the brain.
5. Fixing the brain.
6. Weighing the organs.
7. Draining of intestines
STEPS IN AUTOPSY

8. Opening of the stomach.
10. Returning organs to the body.
11. Sewn up the Y incision.
FORENSIC PATHOLOGY.

- Examination of the Dead for the purposes of the Law.
- All citizens of a country belong to the State.
- The state is therefore interested in the Cause of death and the Circumstances of death.
There are three systems:-

1. The Coroners System
2. The Medical Examiner’s System.
3. The Procurator Fiscal System.
THE MEDICAL EXAMINERS SYSTEM.

- More than half of the States in the USA.
- Headed by a Chief Medical Examiner who is usually a Physician. (CME)
- Medical Examiner is assisted by two types of Assistant Medical Examiners.
  - Type 1- Physician.
  - Type 2- Pathologist.
- Report of findings forwarded to the CME.
- No Inquests.
PROCURATOR FISCAL

- Scotland and most of Europe.
- Headed by the Procurator Fiscal. (Lawyer)
- Appointed by the Lord Advocate
- Duties of the Coroner and the DPP.
- Makes enquiries into all cases and orders autopsies.
MODE OF INVESTIGATION.

- There are two types of autopsies:
  1. Double Pathologist- murder cases.
  2. Single Pathologist- other cases.
- Inquests are conducted in Accidental deaths.
- Sheriff and a Jury of Seven conducts inquests. Procurator fiscal acts as Prosecutor.
MODE OF INVESTIGATION.

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THE CORONER’S SYSTEM.

- Oldest medico-legal investigative system
- Dates back to 1194: England
- Operative in UK and the British Commonwealth.
- The Medico-legal system in Nigeria.
APPOINTMENT AND FUNCTIONS OF THE CORONER.

- Magistrate is ex-officio coroner for the district.
- Coroners assisted by the Police Officers.
- Deaths are reported to the Police- Police cases.
- Police investigates and visits the scene.
- Coroner orders the Doctor to perform PM.
- Consent of relatives not required for PM.
CORONERS CASES.

- Sudden deaths. (24hrs)
- All Accidental deaths.
- All Suicidal deaths.
- All Homicidal deaths.
- All deaths from Poisoning.
- Industrial Accidents.
- Industrial Disease.

- Deaths in Prison and Police custody
- Deaths from Abortions
- Deaths in public institutions- Hostels, Hotels, etc.
- Perioperative deaths.
- Relatives not satisfied with the cause of death.
PROCESSING OF CASES.

- Any person who finds a dead body should report to the nearest Police Station.
- Failure to report is an offence in Law.
- Autopsy findings are confidential
- Autopsy report forwarded to the Police.
- Pathologist should keep a copy of report.
- Police process cases for Trial or Inquest.
MODE OF INVESTIGATION.

• HISTORY OF THE CIRCUMSTANCES.
  ◦ Important aspect of Investigation
  ◦ May be designed to mislead.
  ◦ Hear say evidence not part of the report.
  ◦ Should be corroborated by PM findings.

SCENE OF DEATH.
  ◦ Details should be supplied by the IPO
  ◦ Doctors should visit Scene in all Homicides and other suspicious deaths.
AUTOPSY ON CORONER’S CASES.

- EXTERNAL EXAMINATION
  - Most important part of the autopsy
  - Minimum examination in all cases.
  - External autopsies are done in certain cases.

DISSECTION & OTHER INVESTIGATIONS
- Extent depends on the discretion of the doctor.
- X-rays as indicated.
- Histology and Toxicology as indicated.
- Photography in all Homicides & other suspicions cases.
Inquests are public hearings where the Coroner sits as the President.
The Coroners officers act as the prosecutor and the relatives of the deceased have the right to be represented by a solicitor.
THE CORONER’S INQUEST

- The inquest is designed to answer four questions:-
  1. Identity of the deceased.
  2. Date and Place of death.
  3. The medical cause of death.
  4. The circumstances of death.
THE CORONER’S INQUEST

- The inquest may be reviewed by the High Court if the relatives are not satisfied with the verdict.
Fig. 5. Types of death which must be reported to the coroner.
Fig. 8. Scheme for 60-second minimum examination of a corpse.
Fig. 32. Fatal hazards of the bathroom.

- Faulty electrical apparatus
- Pills and medicines
- Hazardous use of portable fires and driers
- Drowning—especially epileptics
- Scalding—small children
- Blocked flue
- Defective gas geyser
- Leaking gas connection
- Good electrical earth
Leaving appliance on until coin meter expires, someone else puts new coin in

Blocked vent
Faulty appliance

Cigarette dropped on bed

Loose taps

Leaking pipes

Frost damage under floor

Senile forgetfulness

Exhaust fumes
Fig. 2. Common surgical mishaps leading to allegations of negligence.
Doctor conducts operation on wrong man
EXAMPLES OF CLINICAL & MEDICOLEGAL CASES OF INTEREST
A case of misdiagnosis - miliary tuberculosis was missed
Pulmonary Embolism
A Scene of Death
TRIANGLE OF INVESTIGATION

Background
- Interviews
- Contacts
- Motives

Laboratory
- Drug Chemistry
- Pathology
- Toxicology
- Serology
- Trace Evidence
- Firearms and Tool Marks
- Document Examination

Investigator
- Theory
- Hypothesis
- Idea
- Diagnosis

Scene
- Evidence Recognition
- Evidence Collection
The Role of Pathology in the Dispensation of Justice

The methods of pathology in the application of forensic medicine

- Cause of death
- Time of death
- Effects of drugs and toxins
- Effects of organic disease on mental processes and responsibility
- Identification of disease, persons and disease-producing situations.
SUMMARY OF MY PRESENTATION
How can the Family Physicians Benefit from the Pathologists

- Surgical Pathology: processing of biopsies.
- Cytopathology
  - Fine Needle Aspiration Cytology (FNAC)
  - Pap Smear
  - Pleural & Ascitic Fluids Cytology.
- Autopsy Pathology mostly Clinical/ Hospital Autopsy. For medical education.
- Special Techniques such as Special staining & Immunohistochemistry.
Exfoliative cytology
Fine needle aspiration cytology
Malignant smear
How can the Family Physicians Benefit from the Pathologists

- Training of residents during rotation to the Laboratory.
- Research & Publication.
- Clinicopathology conference.
- Tumour board or Oncology group.
- Medical Screening Programmes.
- Establishment of Cancer Registry.
- Cancer Screening program e.g. Pap smear screening program.
- Consultations.
Our Experience at a Community Based Cervical Cancer Screening Programme: Evidence from Ife-Ijesha Cancer Registry

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Abstract

Cervical cancer is the most common female gynaecological cancer with increasing morbidity and mortality in Africa despite the availability of Papanicolaou testing method which is affordable, accessible and simple method of screening. It is sad that at the moment, there is no national cervical cancer screening programme in Nigeria. The activities of over 30 cancer registries in Nigeria should be strengthened to include cancer control programmes their various catchment areas.

The aim of the study is to describe the trend of cervical cancer in Ife-Ijesha zone, Southwestern Nigeria as recorded in the Ife-Ijesha cancer registry between January 1991 to December 2010. The study also noted the usefulness of Papanicolaou test as a very important screening tool at the community level.

This work also studied the operations of Well Women Clinic that was established as an avenue for community cervical cancer screening programme in same region.

Results: 6405 cancer cases were studied with 3498 (54.6%) were seen in females while 2907 (45.4%) were seen in males. Total number of cervical cancer recorded was 304 (4.7%) of all the cancers recorded at the cancer registry. Cervical cancer is the sixth most common cancer overall and the second most common cancer in the female in Ife-Ijesha Cancer Registry. There is a decreasing trend of cervical cancer in the region and the period coincided with the period of establishment of Well Women Clinic. Cancer registries have a strategic role in cervical cancer control programme and the effectiveness of Papanicolaou test as a screening tool especially in the developing countries cannot be over emphasized.

Keywords: Community, Cervical Screening, Ife-Ijesha, Cancer Registry.
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This article highlighted my past research collaboration with a Consultant Family Physician. We can explore same here in ELWA as cervical cancer is the leading cancer killing of Liberian women.
Clinicopathology Conference between the Dept. of Anatomic Pathology & Internal Medicine at Ekiti State University Teaching Hospital, Ado-Ekiti, Nigeria. This tradition should be encouraged here at ELWA Hospital, Liberia. This can be done virtually with me.
Recommendations & Way Forward

- As of today, there is no single Consultant Laboratory Physician /Pathologist in Liberia.
- The knowledge gap in the teaching and practice of Laboratory Medicine is obvious in the country.
- I believe these recommendations will assist the Department in maximising this interaction and serve as a way forward.
Recommendations & Way Forward

1. Establishment of Monthly Interactive Session with me. This could be done virtually. This will enable me to cover other vital aspects of Laboratory Medicine.

  ➢ This is just an introductory lecture in my various collections for the Residents in Family Medicine.
Recommendations & Way Forward

2. Seeking grant to establish a community based cervical cancer screening in Liberia. Cervical cancer is highly preventive yet is the No.1 cancer killing the Liberian women. The grant can be used also for recommendation No.3.

3. I could assist to set up a standard laboratory service at ELWA Hospital, Liberia and other of her catchment areas.
4. I am available to help train your laboratory staff and assist in giving needed professional assistance in upgrading your present laboratory.
Conclusion

• Pathology plays a pivotal role in the modern medical education and practice.
• It enables us to use the knowledge of the basic medical sciences such as Anatomy, Medical Biochemistry, Physiology, Molecular Biology to explain the mechanisms and manifestation of disease.
• Pathology is the bridge between the basic clinical sciences and clinical sciences.
• Pathology is still the bedrock of Medicine.
Thank you for Listening