

KING SAUD UNIVERSITY FELLOWSHIP

TRAINING PROGRAM IN

ANATOMIC PATHOLOGY AND CYTOLOGY

Departments of Pathology and Laboratory Medicine

*King Khalid University Hospital
King Faisal Specialist Hospital & Research Centre
Riyadh Al-Kharj Military Hospital
And
King Fahad National Guard Hospital*

SUMMARY OF KING SAUD UNIVERSITY FELLOWSHIP PROGRAM IN PATHOLOGY (HISTOPATHOLOGY)

RESIDENCY TRAINING PROGRAM

PRIMARY OBJECTIVE:

The primary objective of training in Surgical Pathology service is to acquire and refine skills that enable the trainee to function as a competent consultant, i.e. interpret submitted material as accurately as possible utilizing, when appropriate, ancillary studies and to convey his / her opinions in a clear and concise manner.

These objectives requires:

1. Background knowledge
2. Technical skills
3. Consultative and diagnostic skills
4. Teaching responsibilities
5. Management skills

1. Background knowledge:

- a. Review of gross anatomy, histology and ultra-structural components of normal cells and the principles of the embryological development of the major organ systems.
- b. Knowledge of the general host responses to injury including etiological and pathogenic mechanisms, morphological alterations and functional manifestations. These will be obtained from the
 - i. Basic pathology course given to residents in first year of training.
 - ii. By comprehensive reading guided by the supervising pathologist to Robbins Pathologic Basis of Diseases.

2. **Technical Skills:**

In order to arrive at an accurate diagnosis and to prepare meaningful written report, the trainee will be expected to develop the following technical skills during his / her initial Surgical Pathology rotation.

A. Gross Examination of Organs:

- i. Conduct an appropriate gross examination and dissection of commonly removed organs.
- ii. Describe the specimens, including pertinent negative findings, succinctly and precisely.
- iii. Select appropriate tissue blocks for histology (and special studies) from each particular specimen (given the type of organ and disease process involved). The Surgical Pathology manual contains information to guide you in describing gross specimens and selecting the necessary tissue blocks.

B. Quick (Frozen) Sections:

- i. Examine the fresh specimen, describe it and select a representative block.
- ii. Cut a cryostat section; stain and mount the section.

C. Laboratory Techniques:

- i. Use and care of the light microscope – including learning how to Kohler illuminate and to use a Vernier scale.
- ii. Knowledge of the routine technical procedures of the histology laboratory including tissue fixation, tissue decalcification, clearing, infiltration and sectioning of tissue blocks; performance of routine stains (e.g. H & E).

- iii. Recognition of commonly encountered artifacts and how to avoid them.
- iv. Principles involved in Immunoperoxidase procedures, e.g. peroxidase-antiperoxidase technique.
- v. Principles of immunofluorescence methods.
- vi. Principles of the transmission electron microscope.

3. Consultative and Diagnostic Skills:

During the period of training, the resident will handle a large number of varied specimens. Examination of this material, arriving at an opinion, and discussing the case with the supervising Pathologist provides the most important means by which a trainee “learns” pathology. The practical experience of looking down the microscope must be supplemented by referring to the standard textbooks and salient journal articles.

A. Diagnostic Skills:

- i. The resident must acquire a good background knowledge in the major disease processes.
- ii. Knowledge of the indications, limitations and usefulness of ancillary studies, i.e. histochemistry, Immunoperoxidase staining, immunofluorescence, electron microscopy, DNA hybridization.
- iii. No matter what the stage of training, utilize the current case material to maximize the learning experience. When examples of less common entities or unusual manifestations of the common come across your desk, use the opportunity to read up and learn about the condition or compare with previous cases in the files. A wealth of experience accumulate over 4 years.

- iv. Recognize your limits. Learn when and where to seek the opinion of others within and outside of the department.

B. The Written Report:

- i. Understand the structure of a well-formulated microscopic description including pertinent observations and interpretation of findings that lead to a particular diagnosis.
- ii. Learn to include relevant information to aid in further treatment of the patient, e.g. tumour differentiation, status of resection margins, relevant staging information, and request for additional biopsies.

C. Frozen Sections (F.S):

- i. Know the indication, contraindications and the limitations of the technique.
- ii. Recognize circumstances when deferral to permanent sections is appropriate.
- iii. Learn to formulate a frozen section report, which provides the information necessary to guide intra-operative management.

OBJECTIVES FOR R3 TO R5 RESIDENTS:

The objectives for residents in Third Year and beyond are essentially the same as for those in their Second Year – the difference is one of degree. Thus, the resident should be expected to refine existing technical and diagnostic skills and to generate well formulated Surgical Pathology reports with decreasing supervision. As efficiency increases with experience, the resident will spend proportionately greater time working up challenging cases including searching the literature. Moreover, it is expected that as the capabilities of an individual senior resident become known to the Pathology staff members, the resident will be given increased responsibilities in signing out cases, rendering frozen section diagnoses and presenting at clinical rounds.

4. Teaching Responsibilities:

- Assisting junior residents in all facets of their work.

- Participate as required in small group laboratory teaching to medical students.
- Presentations at clinical and other rounds as required.

5. Management Skills:

- a. Understand the basic organizational structure of the laboratory.
- b. Learn effective manners in which to deal with technologic and secretarial staff and with clinician requests
- c. Knowledge of current systems of data coding storage and retrieval.
- d. Local regulations concerning storage of specimens, slides, tissue blocks and reports.
- e. Knowledge of various facets of Quality Assurance and Medical Audit.
- f. Knowledge of unit systems of lab work and Administration processes applied to their compilation and use.

EVALUATION:

Your progress throughout the rotation is assessed constantly as a result of daily interaction with the Staff Pathologists. Towards the end of the rotation, each Pathologist provides a verbal or written evaluation to the rotation supervisor.

In addition an exam will be held at the end of each year of training. There will be two evaluating practical exams at the end of R2 and R4 and two comprehensive exams at the end of R3 and R5.

DEPARTMENT OF PATHOLOGY AND CYTOLOGY

King Khalid University
King Faisal Specialist Hospital
Riyadh Al Kharj Military Hospital
and
King Fahad National Guard Hospital

RESIDENCY TRAINING PROGRAM

INTRODUCTION

The program is part of the Riyadh Collaborative Training in Pathology involving established King Faisal Specialist Hospital, King Khalid University Hospital (King Saud University), the Riyadh Armed Forces Hospital and King Fahad National Guard Hospital, and lead to the postgraduate qualification of Fellowship in Pathology of King Saud University (FPKSU).

Our program is intended to provide well-trained pathologists for the larger number of medical laboratories in hospitals and clinics throughout the Kingdom of Saudi Arabia, as well as for the academic departments in Pathology.

The Fellowship program requires a period of **five years** full time training, most of it will be undertaken locally.

ANATOMIC PATHOLOGY AND CYTOLOGY OUTLINE OF TRAINING PROGRAMS

The residents who choose to specialize in Anatomic Pathology will undergo five years of intensive training which will include laboratory techniques in Histopathology, cytology and electron-microscopy as well as in depth training in surgical pathology, Cytopathology, autopsy pathology and adequate exposure to advanced techniques used in diagnostic surgical pathology such as flowcytometry, molecular pathology and cytogenetics. This will be achieved by undergoing a series of rotations through these disciplines, which are depicted in the accompanying printout of the rotation schedule for anatomic pathology residents. In the following pages, objectives of the training program and details of the various laboratory rotations are given.

OBJECTIVES

I. SURGICAL PATHOLOGY

These objectives are to be accomplished during the resident's training program. The resident, upon completion of training should be:

1. Cognizant of his or her role in the clinical situation in relation to both the clinician and the patient.
2. Familiar with the technical aspects of Histopathology as related to surgical pathology. This includes techniques of sectioning, embedding and staining, comparative values of different fixatives, operation and servicing microtomes, cryostats, and similar problems.
3. The resident is responsible for the surgical specimen from the time it is obtained from the patient until the final report is received by the clinician. He/She should ensure that the specimen is received in time and in proper condition for processing, the slides are prepared to his satisfaction, and that the diagnosis is received and understood as early as possible by the clinician.

4. Able to identify, describe, and submit appropriate sections from specimens commonly encountered in surgical pathology practice. Establish which cases need to be processed in a day's workload. Be able to dictate the gross descriptions of the great majority of cases in final form at the cutting table. Identify the specimens received, how they are processed, what each section submitted represents in clear enough fashion and that this information is immediately evident to anyone subsequently reading the report. Recognize the importance of maintaining the specimen for subsequent diagnosis work-up and for teaching.
5. Able to determine whether slides received are adequate in number and quality and to take appropriate remedial steps if they are not. Be aware of uses and abuses of special stains, recuts and similar techniques. Be able to assign priorities for the earlier and more extensive investigation of more important cases. Be able to write a clinically relevant, concise but complete, organized, and intelligible microscopic description of those cases where it is required.
6. Able to diagnose correctly the great majority of commonly encountered lesions, be aware of the existence of other lesions, and know when and how to seek consultation. Develop an approach to slide examination, to ensure that lesions even if not always correctly interpreted will at least not be overlooked. Be able to relate the histologic findings to the clinical, radiological and gross features of the case.
7. Cognizant of new and specialized techniques in such fields as histochemistry, electron microscopy, immunohistology, cytogenetics, flow cytometry, and specimen radiography and their applications to diagnostic surgical pathology.
8. The residents should know when and how to use immunohistochemical technique for diagnostic purposes with adequate knowledge about the interpretation and limitation of the antibodies used.
9. Able to perform in reasonable time a technically adequate frozen section examination, and to deliver an appropriate interpretation. Be able to communicate with the surgeon to obtain and deliver pertinent information. Be aware of the limitations of frozen-section technique, and know when a diagnosis must be deferred. Be able to apply special techniques such as imprints, which complement the frozen section examination.

10. Able to understand the clinical manifestations and natural history of lesions encountered. This demands independent reading, beginning with standard textbooks and progressing to familiarity with and critical reading of current pathology literature.
11. Able to cooperate with investigators studying human tissues (research), to the extent that patient care is not compromised.

12. **Quality Control:-**

The residents will be exposed to all aspect to both internal and external quality control and quality assurance practice and by the end of the 3rd year they are expected to be knowledgeable about this important aspect of pathology practice. Residents will also be encouraged to attend, where it is not contrary to hospital policy, meetings of the hospital medicine audit committee.

13. **LABORATORY MANAGEMENT**

During the rotations, the resident will be exposed, wherever possible, to all aspects of laboratory management including preparation and administration of budgets, assignment of duties to laboratory personnel, delegation of administrative functions to other senior laboratory personnel with management responsibilities and administrative assistants and other aspects of management-employee relationships. Didactic lectures on laboratory management are included in the core program. To facilitate development of a knowledge of laboratory management, the Chief Resident will also attend appropriate portions of meetings of the professional staff of the laboratory at the “base” hospital. A priority in development of administrative background and skills is recognized in General Pathology training.

ASSESSMENTS

Evaluations will be performed at the end of each rotation. These assessments will be reviewed by the Committee at the end of six months.

DESCRIPTIONS OF ROTATIONS FOR ANATOMIC PATHOLOGY

Laboratory Techniques-R1

These laboratory technique rotations for a duration of one month long each are designed to familiarize the residents with technical aspects of Histopathology, Cytopathology and Electron Microscopy laboratories. These rotations should be finished during R1.

Laboratory Technique I (Histopathology) –R1

Objectives:

A. Fixation and decalcification

Type of fixatives and their purpose

B. Automatic Tissue Processing

- 1) Solution and their purpose
- 2) Numbering systems and anatomic designations

C. Microtomy

- 1) Technique (microtome)
- 2) Knife sharpening

D. H & E Staining

- 1) Solutions
- 2) Types of staining
- 3) Frozen sections
- 4) Problem encountered & procedure to overcome it.

E. Special Stain Orientation (resident will perform)

- 1) Gram
- 2) Masson Trichrome
- 3) Iron
- 4) GMS
- 5) PAS
- 6) PAS / Al. blue
- 7) ZN
- 8) Mucicarmine

- 9) Immunoperoxidase and enzyme histochemistry
 - 9.1) The residents should know the principle and application of important special stain such as stain for melanin, mucin, glycogen, micro-organism, iron and other pigments, connective tissue stain and others.
 - 9.2) The residents should have enough knowledge about the principle of immunohistochemical studies, the common antibodies used and its application in routine diagnostic surgical pathology practice. They should be aware of the limitation of such techniques.

- 10) Immunofluorescence studies.
 - 10.1) The resident should know the principle and application of immunofluorescence in daily surgical pathology practice.

- 11) Others as applicable

- F. Become competent in performing and staining of frozen sections. Emphasis will be on the techniques of frozen section and their limitations (methodology).
- G. Be able to discuss the advantages and disadvantages of the following fixatives: 10% neutral buffered formalin, Bouins, and mercuric- formalin (B-5), Hollande's.
- H. Be able to perform frozen sections, stain slides and evaluate the quality.
- I. Be able to take good quality photographs of gross specimens and obtain reasonable working knowledge of the principles of photography.

Laboratory Technique II (Electron Microscopy) –R1

Description

This is a four-week rotation to be taken after the resident has finished at least one rotation in surgical Pathology. The purpose of this rotation is to familiarize the resident with the application of electron microscopy diagnosis. Following this rotation, the residents will be expected to continue working in close coordination with the EM Laboratory during subsequent rotations in Cytology and Surgical Pathology.

Rotation

1 st Week	Use and functions of electron microscopes
2 nd Week	Sample preparation and ultramicrotomy
3 rd and 4 th Week	Study of cases on the electron microscope including darkroom techniques

Objectives

ELECTRON MICROSCOPY

- 1. To become competent in the use of the electron microscope. At the end of the rotation, the resident should be able to use the electron microscope with little or no help from the technical staff.

2. To become knowledgeable in preparatory procedures for tissue specimens. The resident will have the opportunity to observe the fixation, dehydration, and embedding process.
3. To become conversant with the ultramicrotomy.
4. To become familiar with the ultra-structure of well –fixed tissues.
5. To work through a series of “unknown” surgical cases. The resident will work with a series of thin sections in addition to the adjacent thick sections of “unknown human tumor and kidney tissue.
6. Residents will have the opportunity to work in the darkroom to print some micrographs for a better understanding of density and contrast.

LABORATORY TECHNIQUE II (CYTOLOGY) –R1

1. The resident must be able to recognize artifacts caused by preparation or staining.
2. The resident must be familiar with the various preparation techniques, their advantages and disadvantages and their interpretation (filter preparations, cell blocks Saccomanno techniques). The resident should spend at least a week in cyto-preparatory laboratory to achieve this objective.
3. The resident must learn to perform the basic stains such as Diff-Quik and Pap-stains.
4. Resident must screen at least 50 gynaecology cytology pap smears.

SURGICAL PATHOLOGY I & II (R1)

1. To acquire a professional approach to major surgical pathology specimens.
 - a. Orientation (anatomy) of the gross specimen.
 - b. Development of vocabulary to describe gross specimens.
 - c. Learn proper methods of sampling a gross specimen.

- d. *During the rotation in Cytology Lab, residents are expected to know and study handling and processing of different Cytologic materials, different stains used for Cytologic materials and are expected to collect at least 10 positive cases in a booklet. Each case should include:*
- *Patient clinical details (age, sex, and type of material).*
 - *Brief notes about processing of Cytologic material.*
 - *Type of stains used and outline briefly the principle of each stain (not the step by step procedure)*
 - *Interpretation of Cytologic specimen with the help of Cyto-Technologist and Pathologist.*
- e. *During rotation in Electron Microscope Lab, resident are expected to have brief ideas about the principle of Electron Microscope (Both scanning and transmission EM) be exposed to tissue preparation for electron microscope, type of fixative used processing, sectioning, type of stains used and how the sections are looked at under both transmission and scanning EM. During this period resident are expected to collect at least 5 cases and upto 10 cases well studied (depending on availability of cases) each case should include:*
- *Brief clinical details.*
 - *Provisional pathologic diagnosis.*
 - *Tissue collection, fixation, processing and staining.*
 - *Findings under E.M. and*
 - *Interpretation of such finding with the sign out pathologist of each case.*
- f. *During rotation in Histopathology lab residents are supposed to handle the cases from the moment of receiving, entering in the computer, grossing, different types of fixative used, advantage and disadvantage of each fixative.*
- *Processing of specimen.*
 - *Embedding.*
 - *Sectioning*
 - *Routine stains used in histology lab (H & E)*
 - *Special stain: Principle of each and expected finding.*

- *IHC: Principle of IHC studies, limitation of some IHC stains, their uses in diagnostic surgical pathology.*
 - *Residents are expected to collect 10 cases during the rotation. 5 cases with special stains, 5 cases with IHC studies.*
- g. Learn proper fixation and preservation of the gross specimens.
 - h. Make informed judgment concerning the adequacy of microscopic samples procured from the gross specimens.
2. Judge the quality of microscopic slides and determine the technical problems(s) present in the case of poor quality histologic preparations.
 3. Different type of specimen encountered in Surgical Pathology be able to give gross and microscopic differential diagnoses on the practice including:
 - a. Lung and laryngeal tumors and inflammations.
 - b. Salivary glands.
 - c. Thyroid tumors.
 - d. Esophageal, stomach, duodenal ulcerations and tumors.
 - e. Ileal, colonic, rectal inflammations and tumors.
 - f. Breast inflammation and tumors.
 - g. Renal tumors and inflammations.
 - h. Common skin and CNS lesions.
 - i. Others. (Soft tissue tumour, prostate limb resection for sarcoma etc.)
 4. Be able to correlate gross, light microscopic, and electron microscopic findings on specimens encountered during the rotation.
 5. Become familiar with the organization, filing system, and date retrieval system in surgical pathology and cytopathology.
 6. Become familiar with operation of the dictating equipment in surgical pathology.

SURGICAL PATHOLOGY III, IV, V AND VI (R2 and R3)

Scope

The surgical pathology laboratories process all tissues removed for diagnostic and/or therapeutic purposes from patients in the four participating hospitals. This includes gynaecological, neurological, haematological, renal, liver gastrointestinal, skin and all other general surgical tissues. The laboratories also process and interprets tissues from other hospitals. Consultation cases are also sent to the laboratories from other hospitals in the Kingdoms and neighboring Arab countries.

Objectives

1. Frozen section Technique

The resident must be able to:

- a. Understand and conduct some conversations with the surgeons over the telecommunications system or by telephone while the latter are operating to understand the problem prior to frozen section performance.
- b. Decide what tissues should be sampled for frozen section diagnosis based on the specimen itself and the clinical facts of the case.
- c. Cut diagnosable sections of good quality on the cryostat.
- d. Learn to perform a frozen section and render a diagnosis within a reasonable time of receipt of the specimen.
- e. Achieve at least 90% accuracy in differentiating between benign and malignant tissues.
- f. Understand the implications of a false positive diagnosis and know when to defer frozen section diagnosis.

2. **Equipment**

The resident must be able to:

- a. Demonstrate his or her ability to load the automatic tissue processors computerized model and mechanical model.
- b. Set the timing mechanisms of the computerized and mechanical tissue processors, check trouble spots, and be assured that the instrument is functioning properly before leaving the laboratory for overnight processing.
- c. Demonstrate his or her ability to defrost the cryostat, remove the microtome, clean and dry it, and oil all necessary parts.
- d. Demonstrate his or her ability to embed tissues for paraffin sectioning, and cut suitable 3-6 micrometer sections in a rotary microtome.
- e. Care for and clean his or her microscope and center the light properly to obtain Kohler illumination.
- f. Demonstrate his or her ability to take acceptable pictures of gross surgical specimens. This includes the proper orientation of the specimen, proper lighting and focusing of the specimen.

3. **Gross description of Specimens**

The residents should be able to:

- a. List steps for organized gross description of common specimens from all systems of the body.
- b. List the major gross features of the specimen, which may influence prognosis.
- c. Properly mark and orient specimens.

- d. Take sections or preparations necessary of furnish useful and meaningful data to the surgeon.
- e. Know when to make imprint smear to help in the final diagnosis.
- f. Recognize when consultation help is needed and where to get it.
- g. Demonstrate his or her knowledge of fixative and discuss situations in which they should be used.
- h. Prepare buffered 10% formaldehyde from stock formalin.

4. **Microscopic Descriptions of Specimens**

The resident should be able to:

- a. Identify the major diagnostic findings of common lesions of all systems of the body.
 - b. Appraise the limitations of a biopsy specimen taken.
 - c. Judge when rebiopsy or additional material is necessary.
 - d. Select proper special stain & immunohistochemistry where needed and identify pitfalls in the final product.
 - e. Recognize when consultation help is needed and where to get it.
5. The residents are expected to know the principle of the important special stains used in routine surgical pathology practice and to have good in depth knowledge about immunohistochemistry in regard to:
- 1. Principle of these techniques.
 - 2. Different IHC stains used its application in diagnostic surgical pathology and its overlap and limitation.
6. Residents during third year (R3) should be exposed to the techniques, applications and limitations of the advanced techniques used in the practice of surgical pathology namely flowcytometry, molecular pathology and cytogenetics.

7. General Objectives

The resident should be able to:

- a. Demonstrate his or her ability to communicate with clinicians as relates to the diagnosis and prognosis of patients based on surgical pathology findings.
- b. Demonstrate his or her knowledge of the organization of a surgical pathology laboratory. This will include information about necessary space, proper lighting and equipment, preparation of budget, organization of personnel.
- c. Demonstrate his or her ability to communicate at tissue committee meetings, pertinent information appropriate to such sessions.
- d. Demonstrate his or her ability to use the SNOMED coding capabilities of the surgical pathology laboratory.
- e. Demonstrate his or her familiarity with the advantages and limitations of standard nomenclature systems such as SNOP and SNOM

CYTOPATHOLOGY 1 (R2)

- a. The resident must be able to evaluate the adequacy of a cytologic sample for interpretation.
- b. Regarding cervical smears, recognition of various cell types occurring in the gynaecologic smears, their significance for hormonal cytology, and their changes caused by inflammatory conditions must be understood.
- c. The cellular patterns of cervical precursor lesions and their invasive counarts as well as differential diagnosis must be familiar to the resident.

- d. The role of the cervical smear for the detection of endometrial carcinoma and extrauterine malignancies must be understood.
- e. The resident must be able to diagnose correctly non- malignant conditions in extragenital cytologic materials such as effusion, urine, sputum, bronchial washing and brushing, gastric brushing, and spinal fluid.
- f. The resident must be able to converse with the clinician in meaningful terms as to diagnosis, recommendations, and follow-up of cytologic findings in exfoliative and aspiration cytology specimens.

CYOPATHOLOGY II (FINE NEEDLE ASPIRATION BIOPSY)- R3

During this rotation, the resident will learn the techniques, principles, advantages, disadvantages, limitations and scope of fine-needle aspiration biopsy. Resident will also learn to interpret and report these biopsies in consultation with the consultants. At the end of this rotation, the resident should be able to perform aspiration biopsy independently and be able to interpret most of the biopsies.

SUBSPECIALITY TRAINING IN PATHOLOGY (R4)

This rotation consists of six mini rotations, each of which lasts for a month. During each of these mini rotations, residents will concentrate on one subspecialty area. The following choices are currently available:

Nephropathology

Lung Pathology

Neuropathology

Lymph node and Lymphoma

Dermatopathology

Hepatopathology

Resident's activities during these mini rotations are the following:

- a. Sign out all cases with the consultant within the given Sub-specialty.
- b. Attend/conduct clinicopathologic meeting pertaining to that subspecialty.
- c. Review cases from the department teaching file in the subspecialty.
- d. Make department and sectional presentations dealing with subjects relevant to the subspecialty.

OPTIONAL TRAINING AND ELECTIVE ROTATIONS DURING R5

During this year, the resident may elect to repeat some of the rotations in order to further improve his/her skills in certain area. He/She should participate in a study of any particular area of interest or should write one or two case reports under the supervision from a pathologist.

Publication of these studies in peer reviewed journals will be encouraged.

AUTOPSY TRAINING (R4)

Currently, there are no facilities available within the Kingdom for autopsy training. However, because of our affiliations with the Royal Colleges in Australia and United Kingdom, arrangements can be made in order to obtain this important segment of training in these countries.

Resident should spend upto 6 months for this training, which must be approved by the King Saud Fellowship Committee.

At the end of this rotation, resident must submit report form the overseas Institution in order to obtain credit for this training. This rotation should preferably be completed in R4.

Objectives of Autopsy Training:

During the period of autopsy training the resident should be familiar with:

1. The basic autopsy dissection and be able to demonstrate the techniques for assessment.
2. The basic dissection of the brain and heart after fixation and be able to demonstrate the techniques for assessment.
3. The clinical summation, gross description, blocking and microscopic dictation of autopsies and submit examples of each for assessment.
4. The formulation of the Provisional and Final Autopsy Report.
5. Basic anatomy, histology and physiology as they apply to Autopsy Pathology.
6. The requirements of the Coroner's Act and recognize the importance of adhering to existing legislation pertaining to human tissue and remains.
7. The following terms: cause of death (proximate, immediate and mechanism of death); manner of death (suicide, homicide, accidental, natural and undetermined).
8. Understand the purpose and value of the autopsy and differing goals of the academic / hospital and medicolegal cases.
9. The Death Certificate and Consent for Postmortem Examination.
10. The observation and description of natural postmortem changes.
11. The Workplace Hazardous Materials Information System and principles of laboratory safety.
12. The principles of Universal Precautions and biohazard and other risk containment.
13. The principles of gross specimen photography
14. The principles of light microscopy.

15. The general host responses to injury and understand the pathogenesis, morphological features and functional alterations attributable to these processes: 1) cellular injury 2) inflammation and repair 3) disorders of growth 4) fluid and hemodynamic disturbances.

At the end of the autopsy rotation the resident is expected to:

1. Know autopsy protocol.
2. Perform complete autopsy in a timely fashion with limited supervision.
3. Independently prepare a comprehensive and organized provisional autopsy report and review with faculty advisor.
4. To be familiar with most of the autopsy pathology that is not encountered during the routine surgical pathology practice.
5. Present to the Program Director of the King Saud University Fellowship in Pathology, full autopsy reports about all the cases that the resident attended, participated in or fully performed during the period of training.
6. A minimum of 30 autopsy cases should be fully reviewed and studied by the resident during this period covering different varieties of autopsy pathology, including review of cases from the archival material.

In order to accomplish these expectations, the resident shall:

1. Learn autopsy protocol.
2. Review written background material and Autopsy Pathology Policy and Procedure Manual.
3. Attend dissection review of all autopsies.
4. Discuss all autopsies with supervising pathologist.
5. Present materials and/or teaching at various rounds.
6. Review teaching slide sets, videos and videodiscs and revise knowledge of anatomy, histology and physiology.
7. Attend all mandatory divisional and departmental rounds and resident didactic teaching sessions.

EVALUATION:

At the end of the autopsy rotation, the resident's performance should be evaluated using parameters such as attendance, initiative, enthusiasm, autopsy skills, participation at rounds and other teaching activities, and fulfillment of objectives and expectations. Attached is a copy of the evaluation form used for the residents enrolled in the King Saud University Fellowship in Pathology.

LECTURES AND CONFERENCES

First Year (R1) residents in Anatomic pathology are required to attend lectures in basic pathology, which will be held on Tuesdays each week through the first year of training.

Residents are also required to attend all interdepartmental, departmental and sectional conferences.

More than 75% of attendance must be maintained in all of these meetings.

Details (time, place and content) of these meeting are obtained from the supervising consultants in each of the participating four hospitals.

All residents should submit 5 cases of interest along with relevant clinical data, pathological findings, ancillary methods, diagnosis and literature review at the end of the 3rd year.

A small research project ought to be carried out during the training in the 4th or 5th year. This will help the resident to be familiar with research. The residents should have that research project completed preferably by the end of the R4, however, residents will not be permitted to sit for the R5 final exam unless they complete their projects.

A log book is designed by every subspeciality Training Committee, for every resident to have. The items of this book will have to be ticked out by the candidate with the help of his immediate training supervisor to keep a record of his/her training and professional activities.

ROTATION SCHEDULE FOR ANATOMIC AND CYTOLOGY Residents in King Saud University

R1

Surgical Pathology I	Lab. Tech. I (Histo)	Surgical Pathology II	Lab.Tech.II (E.M)	Lab. Tech. III (Cytology)
<i>5 months</i>	<i>1 month</i>	<i>4 months</i>	<i>1 month</i>	<i>1 month</i>

Final R1 exam, In Basic Pathology

R2

± Autopsy Training	Cytopathology I			Surgical Pathology III	Surgical Pathology IV
<i>Up to 6 months</i>	<i>1 month</i>	<i>1 month</i>	<i>1 month</i>	<i>3 months</i>	<i>6 months</i>

Final R2 Exam in Systemic Pathology (Practical only)
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R3

Cytology II			Surgical Pathology V	Surgical Pathology VI
<i>1 month</i>	<i>1 month</i>	<i>1 month</i>	<i>3 months</i>	<i>6 months</i>

Final R3 Comprehensive Exam

R4

± Autopsy training	Special Pathology (6 months)					
<i>Upto 6 months</i>	<i>Renal</i>	<i>Liver & G.I.</i>	<i>Neuro.</i>	<i>Derma.</i>	<i>Lymphoma</i>	<i>Lung</i>

Final R4 exam. (Practical Only)

R5

Optional training and elective rotations- Research project	Surgical Pathology and Cytology
<i>6 months</i>	<i>6 months</i>

Final R5 Comprehensive Exam. And graduation
