



IMMUNOPATHOLOGY

Immunopathology is a required rotation which consists of one month of training in tissue immunology, immunofluorescence, immunoperoxidase, in situ hybridization, polymerase chain reaction, diagnosis of autoimmune and immunodeficiency disease, evaluation of hypersensitivity reactions and special immunology procedures. HLA testing related to solid organ and bone marrow transplantation will be performed. Laboratory time will be divided between the Immunohistochemistry Laboratory and the HLA tissue typing laboratory. The resident will actively participate in the performance of tests and attend seminars and special lectures explaining the theory and techniques used in this Division of the Department of Pathology. Reading materials will mainly consist of sections in Dabbs, *DIAGNOSTIC IMMUNOHISTOCHEMISTRY*, latest available edition, as well as other references such as: Paul, W. E., *FUNDAMENTAL IMMUNOLOGY*, latest available edition; Samter et al, *IMMUNOLOGICAL DISEASES*; Colvin et al, *DIAGNOSTIC IMMUNOPATHOLOGY* and Stites et al, *BASIC AND CLINICAL IMMUNOLOGY*, latest available edition, among other texts and journals. The immunopathology staff will maintain continuous tutorials in the various aspects of clinical immunopathology and tissue typing practices performed in the clinical immunopathology area. Slides study sets (35 mm) and VHS tapes are used for tutorials as well as for supplemental self study.

Skill levels: At the completion of the one month, the resident should be well-versed in immunopathology and its application to clinical medicine, incorporating what he/she has learned into the management of cases on other rotations, or assisting clinicians who have questions concerning tests performed in the immunopathology laboratory. Due to certification requirements, and the fact that the tests performed are of high complexity and require expertise, the resident is not allowed to independently complete all of the steps for each test or report results. A day-to-day schedule informing the resident of skills and knowledge to be achieved is provided at the end of this section.

1. Patient Care

Working under the direction of the immunopathology staff, the resident will be involved in the interpretation of tests, quality control and process improvement to ensure the provision of patient-focused care. This includes:

Gathering essential and accurate clinical information when a testing pattern is in question. The resident will utilize medical knowledge with the help of information technology to make informed decisions regarding outcomes, including recommendation for appropriate test follow-up in these cases.

The resident will interact with other health care professionals to provide compassionate, appropriate and effective patient care for each situation.

The resident will be provided hands-on experience by actively participating in laboratory techniques supervised by experienced immunopathology technologists.

The resident will demonstrate knowledge of specimen handling as it pertains to immunopathology.

2. Medical Knowledge



The resident will be given a working background on critical steps of tasks assigned and be made aware of established procedures. Residents will be expected to demonstrate an investigatory approach and apply analytical thinking to the cases assigned to him or her.

Over the course of the one month rotation, the resident should understand the keywords and principles. Faculty and technologists will help guide the resident through the syllabus.

3. Practice-Based Learning and Improvement

The resident will learn a systematic approach to the investigation and evaluation of clinically relevant testing and how to make appropriate decisions resulting in improved patient care. This means integrating individual clinical expertise with the best available external clinical evidence from systematic research.

Quality Assurance: the resident will show a working knowledge of quality control and improvement as it pertains to immunopathology.

Departmental Performance Improvement Meeting: the resident will attend and become familiar with establishing and reporting quality improvement goals, monitors, and outcomes.

Safety Regulations: the resident will be familiar with basic regulatory/safety requirements of various organizations (ASHI, JCAHO, OSHA, CAP, etc).

Scientific Study Designs: the resident will utilize information technology to locate and appraise scientific literature as it relates to issues in immunopathology, and be an active participant at Journal Club.

Teaching opportunity: leader of M-2 immunopathology small group.

4. Interpersonal and Communication Skills

The resident will learn how to be effective when exchanging information with other health care professionals. He/she will need to interact with clinicians to obtain and relay information regarding tests performed in the immunopathology lab. Effective listening skills and the ability to carry out standard operating procedures are essential.

5. Professionalism

The resident will be expected to show a commitment to ethical principles when carrying out professional responsibilities. He/she will exhibit behavior appropriate to activities of the immunopathology section.

6. Systems-Based Practice

The resident will be aware of and responsive to the larger context and system of health care as it relates to the cases assigned to him or her.

Understand cost-effectiveness as it pertains to immunopathology.

Understand basic legal issues associated with immunopathology.



Be able to utilize the local computer network and understand how this system stores and relays data to other systems.

Understand how the overall management strategy of the immunopathology lab influences test results and distribution of these results to others.



Goals for the immunopathology rotation:

To learn fundamentals of immunohistochemistry, application of markers to assist in diagnosing benign and malignant cases, CAP regulations in immunohistochemistry, validation process, and troubleshooting/optimization of immunohistochemical stains.

To learn the techniques of specimen collection and preparation for molecular HLA typing, solid phase immunoassay, flow cytometry crossmatches, immunoperoxidase, immunohistochemistry and related immunological procedures.

To learn the steps necessary to achieve adequate data correlation from clinical pathology assessments of immunologic diseases.

To obtain an in depth knowledge of the basic sciences and applied clinical sciences related to immunopathology in the context of the testing, performed in the section

To progressively achieve exposure to management issues and policy development/optimization of the section.

Duties and responsibilities of the resident

Residents are assigned to Immunopathology for clinical interpretive services. These include but are not limited to clinical events, immunohistochemistry reports, flow cytometry crossmatch reports, molecular typing reports, solid phase immunoassay reports and/or any unusual or unexpected finding as outlined in the Immunopathology procedure manuals. The resident must respond in a prompt manner. This exposure will provide the direct clinical involvement with the patient that is required and aid the resident in the development of skills necessary for proficiency in proper patient management and problem solving ability.

The resident will actively practice the General competencies as described above.

The resident will make available to the section a beeper number and will be called as needed. The Lab. Director must be notified of any coverage issues from the assigned schedule so that proper coverage is assured.

The resident is encouraged to participate in research. This activity can relate to method evaluation, basic research, or other tasks delegated and/or as approved by the Lab. Director.

Assessments will be a part of the overall evaluation of the resident and will be completed by the end of the rotation.

Each resident must review management procedures that include: inspections, safety, quality improvement, and data processing.

The rotation through the section is a 4-week schedule (see following pages: Immunopathology laboratory Rotation Schedule).

**Outcomes Assessment:**

Subjective: The residents will be evaluated at the end of the monthly rotation as per protocol (See standard competency-based monthly evaluation form).

Objective:

At the beginning and at the end of the required rotation (4 weeks) there will be a "Board" style examination in the above immunopathology topics to enhance the educational experience and to contribute to the residents portfolio.

A topic will be selected by the attending and the resident at the beginning of the rotation and be researched and presented by the resident to the faculty and staff in a 20-30 minute presentation at the end of the rotation