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Histology / Pathology

GENERAL

Labeling — All specimen containers, not lids, must be labeled with the date, patient name, hospital and/or financial number, attending physician or surgeon, and specimen type. The patient addressograph usually contains all required information except specimen type and surgeon. A Surgical Pathology Requisition (Form #192459) must accompany all labeled specimen containers and contain the same information as well as clinical history, pre-OP and post-OP diagnosis, Date of Service, and a listing of all specimens. Any requisition or specimen container not labeled properly will NOT be accepted. If the problem specimen is for pathology consultation (i.e., frozen section), a nurse will be required to come to pathology as soon as possible for clarification.

Tissue Specimens — All tissue specimens submitted for routine pathology examination must be immersed in 10% buffered formalin immediately to prevent autolytic changes. The volume of the formalin should be at least 15-20 times greater than the volume of the tissue. Formalin can be obtained through the hospital storeroom. Small biopsy bottles prefilled with formalin can be obtained in the histology lab. All specimens in formalin must have formaldehyde warning labels. These labels are available from the hospital storeroom (catalog #275441) if the warning is not pre-printed on the container. All specimen containers must be contained in clear leak-resistant plastic bags. The bags need not be labeled if the container label can be read through the bag. Any specimens for routine pathology examination should be delivered to the Gross Room as soon as possible.

Histology Section Hours — The Histology section is open:

Monday – Friday 5:00 a.m. to 4:00 p.m.

Saturday — 6:00 a.m. to 2:00 p.m.

The section is closed on Sunday.

Pathologists — are routinely available:

Monday — Friday 7:30 a.m. to 5:00 p.m.

Saturday — 7:30 a.m. to 3:00 p.m.

An On-Call Pathologist is available outside of working hours for emergencies. Contact Client Services at extension 14542 for further assistance (Monday – Friday 5:30am – midnight and Saturday 6:00am – 3:30pm.) Please note that your call will be automatically forwarded to Specimen Receiving when Client Services is closed.

SPECIAL HANDLING

When Histology personnel are unavailable for special requests contact the acting Laboratory Supervisor at extension 44807 who will in turn contact the Pathologist on-call or Histology Supervisor to ascertain proper procedure. In no instances should fresh, unfixed tissues be left un-refrigerated.

The following specimen types and/or tests require special handling in addition to the guidelines found in the GENERAL Section:

ADRIAMYCIN TOXICITY

Refer to Myocardial Biopsies

AUTOPSY

Autopsies can only be performed with the proper identification and permit. Refer to the following policies found in the Administrative Policy and Procedure Manual: *Authorization for Autopsy* and *Procedure for Processing Autopsy Authorization*.

BONE MARROWS

If the attending physician requires assistance from a technologist it must be scheduled 24 hours in advance through the Pathology section at ext.14549. Bone Marrow assists may be scheduled Monday through Friday, 8:00 a.m. — 1:30 p.m. Bone biopsies and clots are placed in 10% formalin. Aspirations left in syringes should have the needle removed and brought to the pathology gross room or specimen receiving after hours as soon as possible so that proper fixation in formalin can occur.

When the Bone Marrow is to be performed by the pathologist, it should be scheduled 24 hours in advance by calling ext. 14549 during regular business hours Monday through Friday. In these cases, the Bone Marrow tray will be supplied by the floor.

For Genetics Studies on bone marrow specimens, refer to the section on Chromosome Studies.

CALCULUS ANALYSIS

Any renal, bladder, or urethral calculus for analysis should be submitted in a dry specimen container. **Do not tape calculi to tongue depressors since the adhesive on the tape interferes with the analysis.**

Indicate on requisition if patient has previous history of stones.

CATHETERS

Submit catheters in appropriately labeled dry container unless cultures have been ordered. (See instructions for specific culture.)

CHEMOSENSITIVITY ASSAYS

Notify pathology 24 hours in advance when chemosensitivity assays are indicated. Fresh specimens must be collected and submitted under sterile conditions in a dry specimen container and received in pathology before 4:30 p.m. unless arrangements have been made with the on-call pathologist and never after 5:30 p.m. **A pathologist must be available.**

Include the following on requisition:

- attending physician
- surgeon
- oncologist
- history of prior chemotherapy

CHROMOSOME STUDIES

A chromosome analysis can be performed on blood specimens, amniotic fluid, bone marrow (Philadelphia Chromosome), and tissue specimens. The order may read chromosome analysis/cytogenic studies/karyotyping/Philadelphia chromosome. These studies are sent to a reference laboratory for analysis. Therefore, it is **critical** that specimens are received in Histology by 12:00 noon. It is also **preferable** that all other specimens for chromosome studies are received in Histology by 12:00 noon Monday through Friday and by 10:00 am on Saturday. Unless unavoidable, specimens should not be collected on Sunday. **Specimens must be sterile.** In general, the specimen is sent to the Histology section properly labeled with a Surgical Pathology Requisition. "Chromosome Analysis"/sex determination must be written on the requisition. A patient history sheet must be completed. If the history forms are unavailable, ALL PERTINENT HISTORY including reason for karyotyping must be written on the Pathology Requisition.

Requirements specific to specimen type are:

- **Amniotic fluid:** 15-25 ml in sterile tubes, discard first 2 cc.
- **Peripheral Blood:** Sodium heparinized tube (green top vacutainer)
Adult: 5-10cc Pediatric: 2-5cc.
- **Peripheral Blood (Newborns):** Minimum of 1ml sodium heparinized tube (green top)/1-2 cc of umbilical blood.
- **Products of Conception, Fetuses, Tissues:** Tissues collected under aseptic conditions and submitted in sterile container with a small amount of sterile normal saline.
- **Bone Marrow:** Submit specimen (1.5—2.0 mL) in green top sodium heparin tube. If bone marrow cannot be obtained, peripheral blood may also be submitted.
- **DNA Fragile X** – Requires 20 cc (4-5 tubes) EDTA for adult and 5-7 cc (2 tubes) EDTA for children.

CONSULTATION STUDY

Cases from outside hospitals or laboratories (surgical and/or cytology slides) can be reviewed by the pathologists. Please provide patient name, complete address, date of birth, and social security number when patients are to be billed directly. Contact Pathology at extension 14549 for further information.

D & C SPECIMENS

All requisitions for D&C specimens must contain the patient's LMP date and G/P/A status.

ELECTRON MICROSCOPY

Specimens are sent down fresh in a container with a saline moistened gauze pad to the Histology section with the properly completed Surgical Pathology Requisition indicating that electron microscopy studies are desired. The tissue CANNOT be processed for Electron Microscopy if it is sent to the lab in a formalin fixative. Specimens must arrive in the pathology department when there is a pathologist available.

Myocardial biopsies taken exclusively for electron microscopy in the cardiac cath lab may be immediately placed in 2% glutaraldehyde fixative and then brought to the histology section. The cardiac cath lab can obtain vials of electron microscopy fixative from the Histology section during normal working hours. See Myocardial Biopsies.

FLOW CYTOMETRY

Peripheral Blood: Submit 10ml of blood in green top sodium heparin tube or purple top EDTA tube or ACD yellow top tube.

Bone Marrow Aspirate: Submit 2–3 ml of specimen in green top sodium heparin tube or ACD yellow top tube.

Lymph Node: Submit specimen fresh or in saline. **Specimen must be delivered immediately to Pathology.**

FOREIGN BODIES

All foreign bodies removed must be sent to pathology laboratory. Foreign bodies, including teeth, should be submitted in 10% buffered formalin. Small amounts of attached tissues may be submitted for processing.

FROZEN SECTIONS

Fresh specimens submitted for frozen sections should be collected in sterile containers. Place specimens on or cover with saline—moistened gauze to prevent tissues from drying out. Specimens must be delivered immediately to pathology (grossroom).

If Chemosensitivity Assays have also been ordered, submit fresh specimen for frozen sections in sterile **dry** container. See also Chemosensitivity Assays.

The requisition should include all standard patient demographics and information as well as:

1. Direct phone extension for the OR room
2. Any specimen orientation indicated by ink and/or sutures
3. Patient awake (if applicable)

Specimens must be delivered immediately to Pathology (gross room). Notify pathology if unscheduled frozens are being requested. Also Pathology must be notified if frozen section is collected after hours. Again the specimen must go directly to the pathology lab (gross room). It must not be left unattended at any time.

IRON OR COPPER ANALYSIS (TISSUES)

Submit fresh specimen in dry sterile plastic container. **Specimen must be delivered to pathology immediately.**

LIMBS AND APPENDAGES

All limbs and appendages must be accompanied by the properly signed "Permit for Disposal" in addition to routine paperwork. **Specimens will not be accepted without properly completed PERMIT.** Specimens must be delivered to the Histology Lab (gross room) during working hours. Limb specimens being delivered during the evening or weekend hours when Histology personnel are unavailable, should be taken to the Laboratory Reception Area. The personnel in the reception area will check for proper patient identification. The specimen is then placed in the refrigerator in the Histology Lab.

The accompanying requisitions must be placed in the pocket folder attached to the door of the refrigerator so that Histology personnel are aware of the specimen the following morning.

LYMPH NODES

Submit lymph nodes specimens fresh in sterile containers. Place specimens on or cover with saline—moistened gauze to prevent tissues from drying out (submit specimen dry if chemosensitivity has also been requested). Include any specimen orientation indicated by ink and/or sutures on requisition. Deliver immediately to pathology. **Under no circumstance should fresh unfixed tissue be left at room temperature. It must be refrigerated.**

Submit lymph nodes from radical resections in 10% formalin similarly to other routine biopsies unless the surgeon has requested a frozen section, chemosensitivity, or other special test (see guidelines specific to test requested).

MYOCARDIAL BIOPSIES

Myocardial biopsies are usually submitted in two parts; one portion is submitted in 10% formalin and a second portion is usually submitted in 2% glutaraldehyde fixative in case electron microscopy studies are required. Specimens should be placed in fixatives immediately and then brought to the histology section. Biopsies bottles of 10% formalin and 2% glutaraldehyde can be obtained from the Histology section during normal working hours. Indicate on requisition if Adriamycin Toxicity has specifically been requested. Adriamycin Toxicity is **NOT** routinely done on myocardial biopsies.

NEUROMUSCULAR BIOPSIES

Specimens for neuromuscular evaluation are to be secured with sutures to a tongue blade by the surgeon or submitted in muscle clamps. Place fresh specimens on (or cover with) saline—moistened gauze to prevent tissues from drying out. **DO NOT** immerse specimen in saline as tissue enzymes may leach out and affect test results. Specimen containers must be transported in a secondary container of ice.

The requisition should include all standard patient demographics and information as well as:

1. Direct phone extension for the OR room
2. Any specimen orientation indicated by ink and/or sutures
3. Whether the surgeon specifically wants Electron Microscopy studies performed

Pathology MUST be notified 24 hours in advance. Specimens are referred to an outside laboratory and must be received in the Pathology Gross Room by NOON Mondays through Fridays. Specimens will not be accepted on Saturdays or Sundays.

PNEUMOCYSTIS CARINII

Special stains demonstrating *Pneumocystis carinii* can be performed on Bronchial Brushing or Bronchial Lavage specimens. If *Pneumocystis* staining is **ALL** that is requested on the specimen, it must be submitted to **special testing lab** immediately. Specimen should be refrigerated if there is any delay. See Special Testing / Immunology Section specific to specimen type for patient preparation and specimen collection instructions.

PRODUCTS OF CONCEPTION

All POC specimens must be accompanied by the properly signed "Permit for Examination and Disposal of Fetus" in addition to routine paperwork. **Specimens will not be accepted without properly completed PERMIT.** The patient's LMP must be indicated on the Surgical Pathology requisition.

RENAL BIOPSIES

Renal Biopsies must be scheduled with pathology 24 hours in advance. In general, biopsies should be scheduled as early as possible. However, biopsies to rule-out rejection **MUST** be completed by 2:00 p.m. since they must be sent to an outside laboratory the same day. The pathologist will attend the procedure and evaluate whether the biopsied core includes adequate glomeruli. Fixatives are provided by pathology.

SKIN AND TISSUES FOR IMMUNOFLUORESCENT STUDIES

Skin biopsies or other tissues for immunofluorescent studies should be submitted in Michels's Fixative (Zeus Media). Tissues may remain in media for up to 5 days if necessary. Media is available from the Histology lab (ext. 44833). Specimens collected in-house may be submitted fresh but **MUST** be delivered to pathology immediately.

TESTICULAR BIOPSIES

Testicular Biopsies should be submitted in Bouin's fixative. Bouin's Fixative is available from the Histology Lab (ext. 44833) and should be obtained prior to the procedure. Specimens may be delivered to pathology with the routine specimen deliveries.

Signature Manifest

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APPROVE Lab Users Manual

Submit for Release

Name/Signature	Title	Date	Meaning/Reason
Julie Hayes (JHAYES)		12 Aug 2009, 11:00:58 AM	Approved

Final Approval

Name/Signature	Title	Date	Meaning/Reason
SUZANNE EDWARDS (SEDWARD)	Administrative Director	17 Aug 2009, 10:37:07 AM	Approved

FINAL APPROVAL Histo for User Man

Submit for Release

Name/Signature	Title	Date	Meaning/Reason
JOANN CAVANAUGH (JCAVANA)	Quality Outcomes Manager	20 May 2009, 12:51:43 PM	Approved

Final Approval

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SUZANNE EDWARDS (SEDWARD)	Administrative Director	22 May 2009, 12:23:09 PM	Approved