Gastrointestinal Pathology: How Important is Grossing, Really?
James M Crawford, MD, PhD
jcrawford1@nshs.edu
Executive Director and Senior Vice President for Laboratory Services
North Shore-LIJ Health System
Chair, Department of Pathology and Laboratory Medicine
Hofstra North Shore-LIJ School of Medicine
Manhasset, NY

• "Bigs": Surgical Specimens (and accompanying smaller specimens)

• "Quicks": Biopsies

References

• Manual of Surgical Pathology, 3rd Ed. Susan C. Lester, MD. 2010
• College of American Pathologists: Cancer Protocols and Checklists
• Odze RD & Goldblum JR: Surgical Pathology of the GI Tract, Liver, Biliary Tract, and Pancreas. 2009 – 2014 (out in September)
Gross Pathology Workflow

- Specimen “created” (surgery, biopsy, retrieval…)
- Specimen transport to Pathology
- Specimen accessioning
- Grossing*
- Processing for Histopathology  
  Dependent on Quality of Grossing
- Histopathology QC
- Pathologist review of Gross Report, Histopathology
- Additional study, if necessary**
- Finalization of the Pathology Report

*by Pathologists’ Assistant, Histologist, Pathology Resident, or Pathologist
**Additional Gross review and sections, additional histologic studies…

Pre-Analytical Quality

- If we view “Grossing” as the first “Analytical” step, what are the “Pre-analytical” considerations?
  - Specimen identification
  - Timeliness of Specimen Transport and Accessioning
  - Completeness of accompanying Clinical Information
  - Warm Ischemic Time
  - Triage of specimens to Grossing Room
    - by what priorities?
  - Is there need to track these Quality Metrics?

Pre-analytical misadventures

- Extended warm ischemic time
  - Weekends
  - Courier delays (endoscopy suites, Operating Rooms)
- Inadequate fixation
  - Inadequate preliminary dissection
  - Inadequate quantity of fixative
  - Inadequate time of fixation
- Lost or mislabeled specimens
  - Empty specimen jar
  - Mislabeled specimen jar
  - Missing jar
- Accessioning errors
  - Mislabeled cassettes
  - Accessioning delays
Pre-Analytical Quality Responses

- Extended warm ischemic time
  - Appropriate weekend coverage
  - Monitors of timely courier pickups (OR, endoscopy)
- Inadequate fixation
  - Proper training of Grossing personnel (all personnel)
  - Adequate time for fixation
- Lost or mislabeled specimens
  - Rigorous policies/procedures for correction
- Accessioning errors
  - Monitors of errors
  - "System" improvements to avoid errors

Grossing Room: First Duties

- Specimen Prioritization (these are considerations only)
  - Biopsies (which ones? Breast, Gyn, Gl, Derm, etc.)
  - Bigs (which ones? Breast, Gyn, Gl, etc. etc. etc. Placentas etc.)
- Potential Interruptions to Workflow
  - Frozen Section duties
  - Administrative and Quality Management duties
  - Inventory and Personnel duties
  - Teaching
  - Consultation with Pathologists
  - Role of Clinical Input (especially Surgeons) and WHEN?
- Preliminary Dissection of large specimens
  - Which ones?
  - Initial gross description
  - Thoroughness of initial examination of "fresh" specimen
  - Extent of preliminary dissection for fixation

Response: Grossing Room Policies

- Specimen Prioritization
  - Rigorous policies, to which all stakeholders agree
- Workflow Interruptions
  - Appropriate staffing for cross-coverage of Frozen Sections
  - Appropriate staffing for fulfillment of Managerial duties
  - Teaching incorporated into Grossing Room workflow
  - Protocols and Policies for Pathologist consultation are clear
  - Highly responsive workforce to input from Surgeons
- Preliminary Dissection of large specimens
  - Rigorous training of personnel in preliminary dissection
  - Standards for Gross Descriptions
  - Dialogue with Pathologists, with feedback on performance
  - Feedback on outcome of histology
Preliminary Dissection

- Specimen Prioritization (these are considerations only)
  - Biopsies (which ones? Breast, Gyn, GI, Derm, etc.)
  - Bigs (which ones? Breast, Gyn, GI, etc. etc. etc.)
- Workflow Interruptions
  - Frozen Section duties
  - Administrative and Quality Management duties
  - Inventory and Personnel duties
  - Teaching
  - Consultation with Pathologists
  - Role of Clinical Input (especially Surgeons) and WHEN?
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Observation of Fresh Specimens

- Obligate descriptors: Patient labels, Specimen labels, ALL specimens
- External appearances (initial inspection)
  - Anatomy
  - Surfaces (serosal, retroperitoneal, margins)
  - Adhesions, Deformations, Perforations, Tumors
- Preliminary Dissection of Fresh Specimens
  - PHOTOGRAPHY (if appropriate)
  - Inking of axial margins and relevant radial surfaces
  - Opening along outer curvature of long axis (tubular gut)
  - PHOTOGRAPHY
  - RAPID SECTIONS: Histology, Molecular, Biobanking
    - Tumor tissues
  - (Optional): Preliminary dissection of Ampulla of Vater
  - (Optional): Inflating the bowel
    - Diverticulosis
    - Meckel's Diverticulum

Description: Fresh Specimens

- Anatomy (ABSOLUTELY REQUIRED)
- Measurements
  - Long axis, Circumferences, "wall thickness"
  - Tumor dimensions, distances to axial and radial margins
  - Anatomic transitions (e.g., between bowel segments)
- Appearances
  - Mucosal surfaces, including erosions/ulcers, exophytic lesions
  - Serosal surfaces, including adhesions, puckering, perforations
  - Cut surfaces: (as a result of preliminary dissection)
The Fixed Specimen

- Anatomy (now “fixed in place”)
- Mucosal lesions may be more evident
- PHOTOGRAPHY
  - To include photography of cross-sections
  - Completion of dissection
    - With complete harvest of tissue sections

The Completed Gross Description

- All specimens specified, with verification of specimen labeling
- Number of tissue fragments in each specimen container
- Anatomy of large specimens
- Dimensions appropriate to specimen
- External descriptors, Results of preliminary dissection with interim measurements and findings
- Internal descriptors: findings upon dissection
- Sections taken

Pathologist’s Review of Gross Report

- Patient Demographics, Ordering Physician, Site
- DATE OF PROCEDURE (e.g., potential delays in specimen processing)
- Clinical History, Clinical Diagnosis
- Specimens: Number, Labels
- Dimensions
- Every detail of the Gross findings
  - English language usage (including spelling)
  - Actual “medical” findings
  - Information about Frozen Section diagnoses
- Block designations
Quality Control

- Cassette labeling
- Glass slide labeling
- Validation against Requisition: number of specimens, specimen identity
- Number of cassettes (e.g., benchmarking)
- Quality of Histology Sectioning, Staining
- Grossing TAT
- Histology TAT

Biopsies

- Number of tissue fragments
- Individual or aggregate dimensions
- Brief descriptors of color, texture, shape

POLYPS

- Intact or “Multiple Fragments”
- Stalked (pedunculated) – or not
- Broad-based (sessile) – or not
- Inked base – or not
- “lobulated” or “villiform”
- Sectioned in a well-oriented fashion (sides, center), versus
- “Multiple fragments submitted in toto”
Ellipse: dimensions, anatomic features
Inked base; orientation if given (e.g., suture)
Fixation
Sectioned in toto

Endoscopic Mucosal Resection

- Ellipse: dimensions, anatomic features
- Inked base; orientation if given (e.g., suture)
- Fixation
- Sectioned in toto
Periampullary Carcinoma
Care and Feeding of your Pathologist

- Biopsies: notify Pathologist of missing specimens, empty specimen jars
- Endoscopic Mucosal Resections: notify if not routine morphology
- Surgeon involvement: arrange for Pathologist to be present
- "Bigs" gross specimens: Pathologist consultation before, during, or after:
  - Consultation before dissection: if protocol is not clear, or if there are confusing findings that do not fit well into protocol
  - "Diagnosis at Gross": e.g., Crohn's vs. Ulcerative Colitis
  - Adequacy of Sectioning:
    - Finding the necessary anatomic lesions
    - Adequately cutting in tumors
- DO NOT DESTROY THE SPECIMEN
  - Section along long axis of tubular gut
  - Maintain integrity of specimen