GASTROINTESTINAL PATHOLOGY GROSSING GUIDELINES

Specimen Type: PANCREATICODUODENECTOMY (Whipple Procedure)

Procedure:

1. Describe the organs included in the resection. These usually include the pancreatic head, common bile duct (mostly intrapancreatic), and duodenum. Distal potion of stomach may be included for standard Whipple specimens. A portion of superior mesenteric vein (either a patch or a segment) may be included at the vascular groove.
2. Describe the external surfaces of the organs.
3. Ink the uncinate margin BLACK.
4. Ink the vascular groove ORANGE. If a portion of superior mesenteric vein is present, it should be inked with a different color (blue).
    - Usually the portion of vein will be sutured by the surgeon for easier identification.
    - **If vessel wall IS IDENTIFIED**: submit entire vessel wall (perpendicular to tumor/pancreas). Sections do not need to be deep, so you can place more than one piece of tissue in a cassette.
5. Ink the serosal surface between pancreas and duodenum (posterior surface) for duodenal tumors in order to better assess serosal involvement.
6. Open the duodenum along the outside of the c-loop.
7. Measure the length of the duodenum and circumferences at the proximal and distal duodenal margins.
8. Measure the length and cross diameters of the pancreas.
9. Measure the length of the stomach (if present) and circumference at the proximal margin.
10. Measure the size, or length and diameter of attached superior mesenteric vein.
11. Probe the pancreatic and common bile ducts to determine if they are obstructed. Bivalve the pancreas along the pancreatic and common bile ducts all the way to the ampulla of Vater.
12. Measure the diameter or circumference of the common bile duct and pancreatic duct.
    - If the pancreatic duct is patent there is no need to measure the length of the duct as this measurement is the same length of the pancreas
    - If the pancreatic duct is obstructed then you may measure the unobstructed length of the duct (usually the distal portion)
13. Describe the size, location, color and consistency of the tumor. Note its relationship to the bile duct, pancreatic duct, Ampulla and margins of resection (uncinate, pancreatic neck, vascular groove, and bile duct). Determine if tumor extends beyond confines of the pancreas.
14. Dissect the lymph nodes from peripancreatic soft tissue, the mesentery and attached adipose tissue.
15. Examine each organ included in the resection individually, as detailed elsewhere in the manual.

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Gross Template:
Labeled with the patient's name (***), medical record number (***), designated "***", and received [*fresh/in formalin*] is an [*intact/disrupted*] [*pylorus-preserving whipple/ whipple*] [*provide orientation*]. The pancreatic head measures *** cm in length x *** x*** cm in cross sections. Peripancreatic soft tissue extends up to *** cm from the pancreas. There [is/is no] portion of vessel wall identified [*if identified provide dimensions and suture designation*]. The pancreatic duct [*is/is not*] obstructed. [If pancreatic duct is partially obstructed (usually at the proximal portion), measure the length and diameter or circumference of the distal unobstructed portion from the pancreatic neck resection margin; if not obstructed do NOT measure the length of the duct, just measure the diameter or circumference]. The common bile duct measures *** cm in length x *** cm in average diameter or circumference [*describe dilated areas and give range in diameter*]. . The duodenum measures *** cm in length x *** cm in open circumference. The stomach (if present) measures *** cm in length x *** cm in open circumference at the proximal resection margin. [*If attached gallbladder is present, mention and measure.*]

Sectioning the specimen reveals a lesion located in the [*pancreatic head, ampulla, periampullary, duodenum*]. [*Describe lesion – solid vs. cystic, size, shape, color, consistency, location, relationship to main pancreatic duct (abutting/obliterating); if cystic (IPMN-give range and overall dimension and approximate # of cysts), describe cyst lining (specifically mention the relationship of any cyst to the main pancreatic duct [part of the main duct/communicating with the main duct/not communicating with the main duct], loculation (uni-/multiloculated), quantity of fluid within (__mL), quality of fluid within (serous, mucinous, hemorrhagic, purulent), presence or absence of papillary excrescences or solid nodules, and, if present, describe with the same descriptors listed previously*]. The lesion [*is grossly confined to the pancreas, involves the peripancreatic soft tissue, involves other attached structures-specify*]. The common bile duct [*is/is not*] patent with a [*describe mucosal surface (e.g. smooth, roughened, granular, hemorrhagic)*], a luminal diameter ranging from *** cm at [location (*e.g. distal vs. proximal to the tumor*)] to *** cm at [location (*e.g. distal vs. proximal to the tumor*)], and a wall thickness ranging from *** cm at [location (*e.g. distal vs. proximal to the tumor*)] to *** cm at [location (*e.g. distal vs. proximal to the tumor*)]. [*If there is a discrete stricture of the duct, additionally describe location, length of the stricture, relationship to bile duct margin, wall thickness, luminal diameter or circumference, and mucosal surface of the stricture.*]

The lesion is located *** cm from the distal pancreatic resection margin, [*** *cm from pancreatic duct margin- for IPMNs]*, *** cm from the common bile duct margin, *** cm from the uncinate margin, *** cm from the vascular groove, *** cm from the proximal [*gastric/duodenal*] margin, *** cm from the distal duodenal resection margin, and *** cm from the posterior pancreatic fibroadipose tissue. The main pancreatic duct [*is/is not*] patent with a [*describe mucosal surface (e.g. smooth, roughened, granular, hemorrhagic)*], and a luminal diameter ranging from *** cm at [location (*e.g. distal vs. proximal to the tumor*)] to *** cm at [location (*e.g. distal vs. proximal to the tumor*)], and a wall thickness ranging from *** at [location (*e.g. distal vs. proximal to the tumor*)] to *** cm at [location (*e.g. distal vs. proximal to the tumor*)]. [*If there is a discrete stricture of the duct, additionally describe location, length of the stricture, relationship to distal pancreatic margin, wall thickness, luminal diameter or circumference, and mucosal surface of the stricture.*] The lesion measures *** cm from the main pancreatic duct [or *abuts the main pancreatic duct* or *obliterates the main pancreatic duct for a length of (__ cm) at the (describe location and/or measure distance from applicable margin)*].

The remaining pancreatic parenchyma is [*lobulated, fibrotic, unremarkable* or *describe any additional pathology including cysts (see descriptors above), strictures, fat necrosis, additional nodules, etc.*]. The serosa of the duodenum and stomach (*if present*) is [*tan, smooth, glistening, and unremarkable* or *describe any additional lesions*]. The duodenal mucosa is [*tan, glistening, folded, and unremarkable* or *describe any additional lesions, such as ulcers/erosions, polyps, smooth areas with loss of folds, etc.*]. The gastric mucosa (*if present*) is [*tan, rugated, glistening, and unremarkable* or *describe any additional lesions, such as ulcers/erosions, polyps, smooth areas with loss of folds, fibrotic areas, etc.*]. [*Describe any additional abnormalities of the pancreatic of biliary ductal system, such as the presence of an accessory pancreatic duct, a main pancreatic duct that empties at the minor papilla, a tortuous main pancreatic duct, pancreas divisum, etc.*] *** of lymph nodes are identified, ranging from *** to *** cm in greatest dimension.

All identified possible lymph nodes are entirely submitted. [*The lesion/mass is entirely submitted (if applicable, otherwise skip to next sentence)*] The peripancreatic fibroadipose tissue is entirely submitted. Representative sections of the remaining specimen are submitted.

Ink key:
Black – uncinate margin
Blue – posterior peripancreatic soft tissue
Green – anterior peripancreatic soft tissue
Orange – vascular groove
[*Additional inking description for proximal duodenal/gastric and distal duodenal margins, if taken perpendicularly*]
[*Additional inking description for cystic duct margin and/or common hepatic duct margin, as applicable*]
[*Additional inking description if pancreatic duct and bile duct differentially inked- when placing in the same cassette. Histologically, the ducts look the same and they must be inked*]

Cassette Submission: 20-25 cassettes

- **Note: Consult pathologist for assistance with orientation before grossing**
- **Note: Pancreatic and bile ducts are histologically identical: do not include both in a single section OR if both are present in a single section, ink the mucosal surfaces differentially and note the inking in the ink key or cassette summary.**
- **Note: sections often taken for frozen section include pancreatic neck (to include duct), proximal margin (gastric or duodenal), and common bile duct margin.**
- Proximal gastric resection margin, shave
- Proximal duodenal resection margin, shave
- Common bile duct resection margin, shave
- Uncinate margin – shave off the entire uncinate margin of specimen and then perpendicularly section. Submit entirely in 2-5 cassettes (one cassette can contain multiple pieces of perpendicularly sectioned tissue).

- Vascular groove- representative perpendicular section
    - If vessel wall **IS IDENTIFIED**: submit entire vessel wall (perpendicular to tumor/pancreas). Sections do not need to be deep, so you can place more than one piece of tissue in a cassette.
- If a **solid tumor**: one cassette per 1 cm of lesion (OR at least five sections of mass OR if small enough, entirely submit)
    - Show relationship to peripancreatic soft tissue
    - Show relationship to pancreatic resection margin, if able
    - Show relationship to common bile duct
    - Show relationship to pancreatic duct
    - Show relationship to ampulla of Vater and/or adjacent duodenum
    - Show relationship to vascular groove
- If a **cystic lesion**: entirely embed the lesion (if the lesion is too large - consult with attending pathologist)
    - Sample any papillary excrescences
    - Sample any fibrotic areas or mural nodules
    - Sample any strictures or areas of wall thickening
- If **duodenal or ampullary adenomatous polyp**:
    - Entirely submit polyp
        - Include relationship to pancreatic and/or common bile ducts
        - Include relationship to serosal surface of duodenum (particularly the posterior surface) in a few sections
- One section of ampulla in relation to tumor (if not ampullary lesion)
- Any additional lesions in the gross description
- One cassette of unremarkable pancreatic parenchyma
- One cassette of unremarkable duodenum and stomach
- One cassette of unremarkable gallbladder
- Submit all lymph nodes identified (at least 12 lymph nodes are suggested)
    - Submit all peripancreatic soft tissue for lymph nodes if necessary (*i.e. resection is for cancer*)
    - Most lymph nodes are buried in the posterior peripancreatic tissue, which may not be easy to strip off. Shave off the entire posterior pancreatic tissue may be helpful to find an adequate number of lymph nodes

- **Note:** If the tumor in the pancreas is ill defined and the tumor size cannot be accurately measured grossly, or a definitive mass lesion cannot be identified (such as post neoadjuvant therapy), both halves of the pancreas should be carefully breadloafed at 0.5 cm intervals (after bivalved along the pancreatic and common bile ducts). Take one cross section every 1 cm sequentially along the length of pancreas from distal neck margin towards the ampulla so that the tumor size may be estimated on microscopic examination. In that case, please keep remaining pancreatic tissue in order so that additional sections between 2 and 3 cms and between 4 and 5 cms can be taken later on if needed (important for T staging).