

UNC Lineberger Cancer Network
ADVANCED PRACTICE PROVIDER Live Webinar **July 20, 2022**

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UNC Lineberger Cancer Network
ADVANCED PRACTICE PROVIDER
 July 20, 2022

Ostomies, Tubes, and Drains




Julienne S. Harris, MSN, FNP-C

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OUR PRESENTER



Julienne S. Harris, MSN, FNP-C

Julienne S. Harris, MSN, FNP-C, is a Nurse Practitioner within the Division of Surgical Oncology.

Her role focuses on providing efficient multidisciplinary inpatient care throughout a patient's hospitalization, and successful transition to discharge.

She also has experience as an advanced practice provider in the outpatient oncology setting.

Her past quality work has centered on improving nursing processes to provide higher quality, standardized patient care, with focuses on PSI reduction efforts, medication safety, and documentation compliance.

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DISCLOSURES

This activity has been planned and implemented under the sole supervision of the Course Director, William A. Wood, MD, MS, in association with the UNC Office of Continuing Professional Development (CPD). The course director and CPD staff have no relevant financial relationships with ineligible companies as defined by the ACCME.

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An ostomy causes a change in the way urine or stool exits the body as a result of a surgical procedure.

- True
- False

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Ostomies, Tubes and Drains
Julie Harris, MSN, NP

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- No conflicts of interest to disclose

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Objectives

- Describe the key differences between an ileostomy and colostomy, and implications for management
- Discuss differences in G-tubes and J-tubes, and implications for management
- Discuss impact of ostomies, drains and tubes on the oncology patient

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Ostomies

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Ostomies

- Surgical anastomosis between intestine and anterior abdominal wall
- Can be anywhere along the GI tract
 - most commonly distal ileum or colon
 - jejunostomy
 - esophagostomy (spit fistula)

Fischer, J. E., Maida, L., & Ohland, J. (2012). Care of Stomas. In *Fischer's mastery of surgery* (pp. e37–e52). essay, Wolters Kluwer Health/Lippincott Williams & Wilkins.

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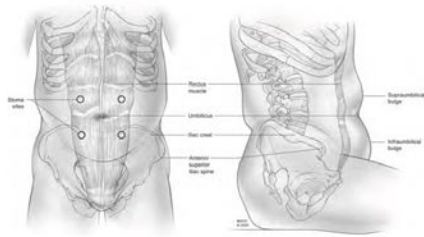
Ostomies

- Placement on the patient's abdominal wall is paramount
 - visible to patient
 - in rectus muscle (helps prevent herniation)
 - apex of infraumbilical fat
 - away from planned incisions, prior scars/skin grafts, creases
- Obese patients
 - positioning of stoma may need to be higher to avoid pannus and decrease length of bowel needed to reach skin surface

Fischer, J. E., Maidd, L., & Ohland, J. (2012). Care of Stomas. In *Fischer's mastery of surgery* (pp. e37–e52). essay. Wolters Kluwer Health/Lippincott Williams & Wilkins.

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Ostomies



Fischer, J. E., Maidd, L., & Ohland, J. (2012). Care of Stomas. In *Fischer's mastery of surgery* (pp. e37–e52). essay. Wolters Kluwer Health/Lippincott Williams & Wilkins.

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Ostomies

- Wound, Ostomy and Continence Nurses (WOCN) play an integral role in ostomy care
 - patient education
 - pre-operative marking
 - appliance fitting
 - coping with fecal diversion
 - anticipatory guidance

Fischer, J. E., Maidd, L., & Ohland, J. (2012). Care of Stomas. In *Fischer's mastery of surgery* (pp. e37–e52). essay. Wolters Kluwer Health/Lippincott Williams & Wilkins.

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Ostomies

- Ostomy creation will ideally leave a protruding budded stoma
 - facilitates drainage into ostomy appliance
 - protects skin
- Ostomy and abdominal contour changes can be expected for up to 3 months post-operatively
 - may require adjustments in pouching system as ostomy matures

Fischer, J. E., Maidl, L., & Ohland, J. (2012). Care of Stomas. In *Fischer's mastery of surgery* (pp. e37-e52). essay. Wolters Kluwer Health/Lippincott Williams & Wilkins.

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Ostomies

Types of stomas

- End ostomy
 - bowel is completely divided with proximal end brought to the abdominal wall as an ostomy, distal end is either removed or left closed in the abdominal cavity
 - Hartmann's procedure
 - Abdominoperineal resection (APR)

Fischer, J. E., Maidl, L., & Ohland, J. (2012). Care of Stomas. In *Fischer's mastery of surgery* (pp. e37-e52). essay. Wolters Kluwer Health/Lippincott Williams & Wilkins.

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Ostomies

Types of stomas

- End ostomy
 - ***PICTURE OF END OSTOMY SCHEMATIC***

Fischer, J. E., Maidl, L., & Ohland, J. (2012). Care of Stomas. In *Fischer's mastery of surgery* (pp. e37-e52). essay. Wolters Kluwer Health/Lippincott Williams & Wilkins.

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Ostomies

Types of stomas

- Loop ostomy
 - a loop of bowel is brought to the abdominal wall, bowel wall is partially opened and everted to facilitate fecal drainage from the proximal limb, and mucous fistula from distal limb¹
 - diversion after rectal resection
 - diversion d/t obstructing tumors
 - if patient with patent ileocecal valve and colonic obstruction (ie tumor), diverting loop ileostomy will not allow for adequate colonic decompression²

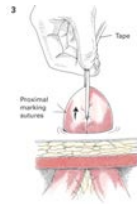
1. Fischer, J. E., Maddi, L., & Ohland, J. (2012). Care of Stomas. In *Fischer's mastery of surgery* (pp. e37–e52), essay, Wolters Kluwer Health/Lippincott Williams & Wilkins
 2. Loop ileostomy. Ellison E., & Zollinger, Jr. R.M., & Pawlik T.M., & Vaccaro P.S., & Bitans M. & Baker A.S.(Eds.), (2022). *Zollinger's Atlas of Surgical Operations*, 11e. McGraw Hill

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Ostomies

Types of stomas

- Loop ostomy



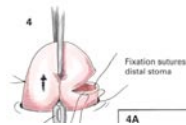
1. Loop ileostomy. Ellison E., & Zollinger, Jr. R.M., & Pawlik T.M., & Vaccaro P.S., & Bitans M. & Baker A.S.(Eds.), (2022). *Zollinger's Atlas of Surgical Operations*, 11e. McGraw Hill

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Ostomies

Types of stomas

- Loop ostomy

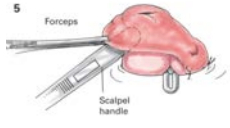


1. Loop ileostomy. Ellison E., & Zollinger, Jr. R.M., & Pawlik T.M., & Vaccaro P.S., & Bitans M. & Baker A.S.(Eds.), (2022). *Zollinger's Atlas of Surgical Operations*, 11e. McGraw Hill

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Ostomies
Types of stomas

- Loop ostomy

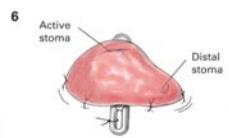


1. Loop ileostomy. Ellison E., & Zollinger, Jr. R.M., & Pawlik T.M., & Vaccaro P.S., & Bitans M., & Baker A.S.(Eds.), (2022). Zollinger's Atlas of Surgical Operations, 11e. McGraw Hill

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Ostomies
Types of stomas

- Loop ostomy



1. Loop ileostomy. Ellison E., & Zollinger, Jr. R.M., & Pawlik T.M., & Vaccaro P.S., & Bitans M., & Baker A.S.(Eds.), (2022). Zollinger's Atlas of Surgical Operations, 11e. McGraw Hill

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Ostomies
Types of stomas

- Double barrel ostomy
 - bowel is completely transected and both ends are everted as an ostomy, with proximal limb providing fecal drainage and distal limb serving as mucous fistula

Fischer, J. E., Mavid, L., & Ohland, J. (2012). Care of Stomas. In *Fischer's mastery of surgery* (pp. e37–e52). essay, Wolters Kluwer Health/Lippincott Williams & Wilkins.

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Ostomies

Types of ostomies

- Anatomic location of ostomy (regardless of type of stoma) provides information on the expected effluent
- The more proximal an ostomy is created in the GI tract, the higher the output is expected to be
 - ileostomy > ascending or transverse colostomy > descending or sigmoid colostomy

1. Fischer, J. E., Maidl, L., & Ohland, J. (2012). Care of Stomas. In *Fischer's mastery of surgery* (pp. e37-e52). essay, Wolters Kluwer Health/Lippincott Williams & Wilkins.

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Ostomies

Types of ostomies

- High-output ostomy is generally defined as >1L/day
- Can lead to dehydration, electrolyte abnormalities, acute or chronic kidney injury, malnutrition, pouching challenges
- Anti-motility agents are required to slow bowel motility
 - imodium, lomotil, tincture of opium
- Encourage oral hydration with electrolyte containing fluids

Goodey, A., & Colman, S. (2016). Safe management of ileostomates with high-output stomas. *British Journal of Nursing*, 25(22), S4-S9.

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Ostomies

Types of ostomies

- Providing anticipatory guidance
 - if there is any remaining bowel distal to the ostomy, the patient can expect to have mucous discharge per rectum as long as the ostomy is in place

Fischer, J. E., Maidl, L., & Ohland, J. (2012). Care of Stomas. In *Fischer's mastery of surgery* (pp. e37-e52). essay, Wolters Kluwer Health/Lippincott Williams & Wilkins.

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Ostomies

Common complications

- Dehydration, electrolyte imbalance, AKI s/t high-output ostomy
- Skin breakdown
 - skin preps and powders to serve as a protectant
 - properly fitted appliances, pastes, or rings are used to obtain a better seal
- Ostomy retraction (stoma or peristomal skin)
 - create challenges with pouching d/t os becoming more flush with skin

Fischer, J. E., Maidl, L., & Ohland, J. (2012). Care of Stomas. In *Fischer's mastery of surgery* (pp. e37–e52). essay, Wolters Kluwer Health/Lippincott Williams & Wilkins.

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Poll Everywhere Question

57 yo F with rectal adenocarcinoma. Now 3 weeks s/p low anterior resection with diverting loop ileostomy. She comes to clinic with new tachycardia, relative hypotension, and generalized weakness. She reports emptying her ostomy bag 7-8 times a day. Labs reveal a new elevated creatinine. After providing IV hydration, what intervention is most appropriate?

- encourage more ambulation
- obtain an EKG
- start scheduled imodium
- consult WOCN

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Tubes

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Enteral Tubes

- Described based on anatomic location
- Gastrostomy tube (G-tube) - placed in the stomach
 - used for feeding in cases with functional GI tract with functional inability to eat or mechanical obstruction proximal to stomach
 - neurological deficit (i.e. trauma, CVA)
 - tumor (i.e. head and neck cancer, esophageal cancer)
- or, venting in cases with functional dysmotility or malignant obstruction
 - gastroparesis s/p abdominal surgery
 - tumor (i.e. duodenal tumor or carcinomatosis)

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Enteral Tubes

- Gastrostomy tube (G-tube)
 - due to anatomic location in the stomach, G-tubes are amenable to bolus feeds
- increased risk of aspiration / reflux compared with J-tube
 - can aspirate to check residuals

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Enteral Tubes

- Jejunostomy tube (J-tube) - placed in the jejunum
 - used for feeding in a functional GI tract with inability to maintain appropriate nutrition with oral modifications alone
- due to placement in jejunum, feeds must be delivered slowly on a pump
- typically smaller diameter tube - more prone to clogging
 - no crushed medications
 - flush aggressively after administration of liquid meds or tube feeds
- decreased risk of aspiration / reflux d/t distal location of tube
 - unable to aspirate meaningful volumes to measure residual

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Enteral Tubes

- Jejunostomy tube (J-tube)
- intra-luminal balloon can actually partially obstruct bowel lumen, thereby increasing drainage around J-tube

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Enteral Tubes

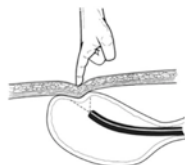
Placement techniques

- Percutaneous Endoscopic Gastrostomy of Jejunostomy (PEG or PEJ)
- Surgical placement (laparoscopic or open) of G or J-tube
- Radiology inserted G-tube

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Enteral Tubes

Percutaneous endoscopic tube placement



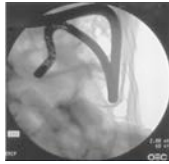
PEG

Endoscope introduced to stomach and abdominal wall is transilluminated

Fischer, J. E., Preedy, J. L., & Prebid, B. K. (2012). Percutaneous Endoscopic Gastrostomy. In Fischer's master's of surgery (10th ed., Vol. 10). Wolters Kluwer Health|Lippincott Williams & Wilkins.

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Enteral Tubes
PEG/PEJ tube placement




PEJ
Endoscope introduced to jejunum and abdominal wall is transilluminated

Fischer, J. E., Preedy, J. L., & Prehse, R. K. (2012). Percutaneous Endoscopic Gastrostomy. In Fischer's mastery of surgery: esophy. Wolters Kluwer Health|Lippincott Williams & Wilkins.

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Enteral Tubes
PEG/PEJ tube placement



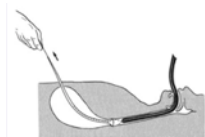
PEG PEJ

Needle introduced under direct visualization while aspirating for air, indicating placement within GI tract

Fischer, J. E., Preedy, J. L., & Prehse, R. K. (2012). Percutaneous Endoscopic Gastrostomy. In Fischer's mastery of surgery: esophy. Wolters Kluwer Health|Lippincott Williams & Wilkins.

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Enteral Tubes
PEG/PEJ tube placement




Enteral tube is then pushed or pulled over guidewire or suture into stomach or jejunum, and out through the abdominal wall

Fischer, J. E., Preedy, J. L., & Prehse, R. K. (2012). Percutaneous Endoscopic Gastrostomy. In Fischer's mastery of surgery: esophy. Wolters Kluwer Health|Lippincott Williams & Wilkins.

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Enteral Tubes
PEG/PEJ tube placement



Internal bumper will sit in gastric lumen with external bumper placed for external support. External bumper may be sutured to skin. Placement confirmed with endoscope.

Fischer, J. E., Pezdy, J. L., & Postow, B. K. (2012). Percutaneous Endoscopic Gastrostomy. In Fischer's mastery of surgery: esoph, Wolters Kluwer Health|Lippincott Williams & Wilkins.

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Enteral Tubes
PEG/PEJ tube placement

- Can be done by procedure team at bedside (ICUs) under sedation
- Must be able to advance endoscope into stomach or jejunum
 - may not be feasible with upper GI tumors
- Risks include: perforating nearby colon, creating fistulous tract with bowel, or bleeding

Fischer, J. E., Pezdy, J. L., & Postow, B. K. (2012). Percutaneous Endoscopic Gastrostomy. In Fischer's mastery of surgery: esoph, Wolters Kluwer Health|Lippincott Williams & Wilkins.

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Enteral Tubes
Laparoscopy assisted Gastrostomy and Jejunostomy

1. Establish laparoscopic abdominal access
2. Palpate abdominal wall, confirming desired placement of tube laparoscopically
3. Place T-fasteners in a square pattern through abdominal wall into gastric or jejunal lumen
 1. Serves to hold traction again gastric or jejunal lumen to abdominal wall
4. Insert needle, followed by guide wire into gastric or jejunal lumen under laparoscopic visualization
5. Balloon G-tube or J-tube placed with stylet over guide wire into desired lumen
6. Balloon inflated and external phalange placed

Fischer, J. E., Pezdy, J. L., & Postow, B. K. (2012). Percutaneous Endoscopic Gastrostomy. In Fischer's mastery of surgery: esoph, Wolters Kluwer Health|Lippincott Williams & Wilkins.

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Enteral Tubes

Laparoscopy assisted Gastrostomy and Jejunostomy

1. Picture of balloon g-tube/j-tube
2. picture of T-fasteners

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Enteral Tubes

Laparoscopy assisted Gastrostomy and Jejunostomy

- Allows for direct visualization via laparoscope throughout procedure
 - avoid inadvertent perforation or fistulization of bowel and unrecognized hemorrhage
 - preferred in pre-operative feeding tube placements as direct visualization allows appropriate placement so as to not jeopardize future planned resections
- Can be placed in patients where an endoscope may not be able to be passed
- Requires general anesthesia
- Anticipatory guidance: T-fastener buttons will fall off days to weeks after procedure

Fincher, J. E., Pinsky, J. L., & Paulson, B. K. (2012). Percutaneous Endoscopic Gastrostomy. In: Fisher's manual of surgery, 96th Edition. Elsevier HealthSciences. Williams & Wilkins.

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Enteral Tubes

Radiographically assisted G-tube placement (VIR)

1. Uses CT or fluoroscopy imaging to guide placement
2. Stomach insufflated with air via NGT; transverse colon opacified with contrast administration prior to procedure
 1. Must be able to safely place NGT pre-procedure
 2. Ideally, should be able to safely administer PO contrast (may be contraindicated when placing palliative G-tube for venting in setting of malignant bowel obstruction)
3. After insufflation, appropriate location on gastric wall selected with fluoroscopy
4. T-fasteners placed in 2 cm around selected location, similarly to surgical placement, to pexy gastric wall to the anterior abdominal wall
5. Needle placed into stomach, aspirating for air to confirm placement
6. Tract dilated up and balloon G-tube placed
7. Contrast injected into G-tube to confirm placement under fluoroscopy

Dal, J., et al. (2012). Gastrostomy tube: Placement and creative care. UTOH. Retrieved Jan 24, 2022. from <https://www.uptodate.com/contents/gastrostomy-tube-placement-and-care>

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Enteral Tubes

- Prior abdominal surgery, gastric varices, obesity, ascites or tumor may impede G or J-tube placement
- External bolster should be placed to allow for 1-2 cm of tube movement
- Tube feeds can safely begin the day after tube placement
- Routine care of the feeding tube includes:
 - cleansing external insertion site with soap/water or diluted hydrogen peroxide; may place drain sponge if pt with drainage
 - flushing tube with water before and after use to maintain patency

DiLagge, M. R., & Roberts, K. M. (2022, January 25). Gastroenteric tubes: Placement and routine care. UpToDate. Retrieved June 29, 2022. from <https://www.uptodate.com/contents/gastroenteric-tubes-placement-and-routine-care?search=4>

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Enteral Tubes

Common complications

- Peri-tubal drainage
 - manage with skin protectant (i.e. crusting), nystatin powder if fungal appearing, zinc based creams, and drain sponges
- Clogging
 - Flush tube with warm water, or dwell pancreaticase dissolved in tablet of bicarbonate for 2-3 min then flush with warm water
 - Can be prevented by only using liquid or medications that crush and dissolve easily
- Inadvertent removal
 - May replace tube with Foley catheter to prevent closure of tract

DiLagge, M. R., & Roberts, K. M. (2022, January 25). Gastroenteric tubes: Placement and routine care. UpToDate. Retrieved June 29, 2022. from <https://www.uptodate.com/contents/gastroenteric-tubes-placement-and-routine-care?search=4>

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Enteral Tubes

Removal

- Technique for removal depends on type of tube placed
 - For balloon tubes: deflate distal balloon and remove through abdominal wall
- Site should be covered with clean, dry, dressing; changed PRN
- Anticipatory guidance: tract should close within 24-72 hours, but some drainage can be expected after removal

DiLagge, M. R., & Roberts, K. M. (2022, January 25). Gastroenteric tubes: Placement and routine care. UpToDate. Retrieved June 29, 2022. from <https://www.uptodate.com/contents/gastroenteric-tubes-placement-and-routine-care?search=4>

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Poll Everywhere Question

TR is a 45 yo M with significant dysphagia d/t esophageal adenocarcinoma. A G-tube was placed 3 weeks ago for significant malnutrition. He is currently in the middle of chemoradiation, and shows up to clinic today reporting his tube fell out this morning on the way to his appointment. You should:

- Place outpatient referral to VIR for replacement
- Place a clean dressing over G-tube site
- Proceed with radiation treatment
- Attempt to gently insert a Foley catheter into G-tube tract

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Drains

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Biliary Drains

- Used for biliary decompression
 - Biliary, pancreatic, duodenal tumors
- May be internal, internal/external, or external
- Access can be obtained endoscopically or radiographically

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Biliary Drains

Endoscopic Drainage

- ERCP: Endoscopic retrograde cholangiopancreatography
- Endoscopic access with cannulation and contrast injection of pancreatic and common bile duct
- May place stent into common bile duct to allow for internal biliary drainage

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Biliary Drains

Endoscopic Drainage

- Picture of ERCP with CBD stent

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Biliary Drains

Endoscopic Drainage

- Endoscopic ultrasound with hepaticogastrostomy tube placement
- Allows for visualization of bile ducts through the gastric wall
- May access left hepatic biliary system transmurally and stent
- Stent empties proximally into stomach, distally into intestines if able to be advanced through common bile duct
- Potentially allows for internal drainage when unable to cannulate from common bile duct (ie tumor obstruction)
 - May/may not adequately drain R hepatic ducts depending on placement of hepaticogastrostomy tube

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Biliary Drains
Endoscopic Drainage

- Picture of hepaticogastrostomy

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Biliary Drains
Endoscopic Drainage

- Pros: allows for internal decompression of biliary system without external tubes
- Cons: may become clogged over time requiring repeat procedures and stent exchanges

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Biliary Drains
Percutaneous Drainage

- Often used in cases not amenable to endoscopic drainage

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Biliary Drains

- Percutaneous cholangiogram




© 2011 Springer. 7. Percutaneous cholangiogram. [PDF] Retrieved April 20, 2012. Available from: <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3388888/>

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Biliary Drains

Cholangiogram with stent internal/external stent placement

- Communicates with internal biliary system (ends in intestine), and external system via bag
- May remove from drainage bag as communicates with intestine
- Flushed BID with normal saline to prevent clogging



© 2011 Springer. 7. Percutaneous cholangiogram. [PDF] Retrieved April 20, 2012. Available from: <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3388888/>

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Abscess Drains

- CT or US guided placement
 - must have safe window of access from outside the body to the targeted collection
 - may be placed almost anywhere in the body where there is a collection/cavity large enough to hold the pigtail end of the drain (~2 cm)
 - soft tissue, intra-abdominal, pelvic, hepatic
- Allows for evacuation of fluid which can be therapeutic and/or diagnostic
- Drain pigtails with suture at distal end of drain to remain in place, then sutured at the skin and further secured with an external securing device
- Drain must be flushed daily or BID to maintain patency

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Poll Everywhere Question

Your patient with an existing abscess drain calls with concerns of leakage around insertion site at the skin. You consider:

- the drain may be clogged
- the abscess cavity may be closing
- the patient has developed new ascites
- A and B

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Tunneled Ascites Drains

- used to relieve significant and symptomatic ascites
- often malignant ascites
- allows patient to self-drain ascites into closed collecting system without repeated taps to manage symptoms of ascites
- placed by Interventional Radiology
- drainage and dressing change kit comes with the patient from IR

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Questions?

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References

Anderson, S. (2021, September 7). *Percutaneous transhepatic cholangiography*. UpToDate. Retrieved April 25, 2022, from https://www.uptodate.com/contents/percutaneous-transhepatic-cholangiography?search=percutaneous+transhepatic+biliary+drainage&source=search_result&selectedTitle=1~150&usage_type=default&display_rank=1

DeLigge, M. H., & Robson, K. M. (2022, January 25). *Gastrostomy tubes: Placement and routine care*. UpToDate. Retrieved June 28, 2022, from https://www.uptodate.com/contents/gastrostomy-tube-placement-and-routine-care?search=g%20tube%20placement&source=search_result&selectedTitle=1~150&usage_type=default&display_rank=1&H9179358

Goodey, A., & Colman, S. (2016). Safe management of ileostomates with high output stomas. *British Journal of Nursing*, 25(22), S4-S9.

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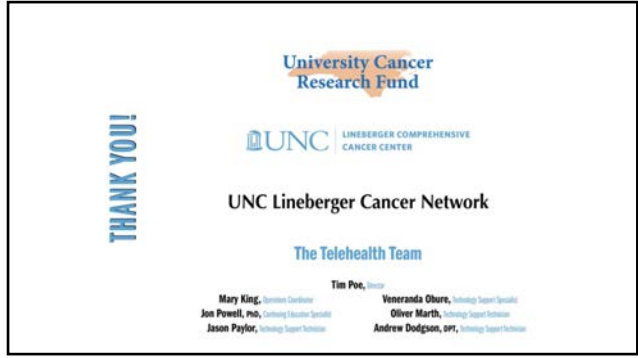
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UPCOMING LIVE WEBINARS

<p>RESEARCH TO PRACTICE  July 27 12:00 PM</p>	<p>Primary Central Nervous System Lymphoma in North Carolina: Updates for 2022 Christopher Dittus, DO, MPH</p>
<p>PATIENT CENTERED CARE  August 10 12:00 PM</p>	<p>Psycho-Social Complications of Receiving a Cancer Diagnosis and Treatment During the Pandemic Justin Yopp, PhD</p>
<p>ADVANCED PRACTICE PROVIDER  August 17 4:00 PM</p>	<p>What can VIR do for you? Katie Riffle, MSN, FNP-BC</p>

Complete details on upcoming LIVE webinars:
learn.uncicn.org/live-webinars

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SELF-PACED, ONLINE COURSES

<p>RESEARCH TO PRACTICE  August 2022</p>	<p>Advances in Peri-Operative Therapy in Bladder and Kidney Cancer Tracy L. Rose, MD, MPH</p>
<p>PATIENT CENTERED CARE  August 2022</p>	<p>The Vital Role of Primary Care Providers in Breast Cancer Survivorship Care Allison Beam, MPA, PA-C</p>
<p>RESEARCH TO PRACTICE  August 2022</p>	<p>Lung Cancer Management in North Carolina: Updates for 2022 Shetal A. Patel, MD, PhD</p>

Today's webinar will be available in August 2022 as a FREE, Self-Paced, Online Course. Complete details on Self-Paced Online Courses: learn.uncicn.org/spoc

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THANK YOU FOR PARTICIPATING!

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