

Direct Percutaneous Endoscopic Jejunostomy

Robert Loudon, M.D.
GI-Surgery Conference
March 31, 2005

Case

- 11/9/04-52 yo AAF presented to University Hospital with abd pain x3 days
- RUQ pain radiating to back worsened with eating
- +nausea/vomiting
- 30lb wt loss over past 6 months
- Multiple similar episodes of pain in past – 28 ER visits and 4 hospitalizations at Norton for similar c/o

Case

- PMHx
 - Chronic pancreatitis s/p 85% pancreatectomy 2000
 - IDDM
 - Htn
 - Hepatitis
 - Polysubstance abuse
 - CHF

Case

- ROS
 - +wt loss, f/c
 - +elevated blood sugars
- Soc Hx-on disability, prior tobacco use, +etoh-none since 2000, no IVDA
- All - PCN, Ibuprofen

Case

- V/S on admission
 - BP - 178/107
 - P - 98
 - T - 97.0
 - R - 20

Case

- PE
 - Gen - cachectic in nad
 - HEENT - perrl, no scleral icterus, white exudate on tongue
 - Neck - +submandibular lymphadenopathy
 - Lungs - CTA
 - CV - RRR no m/r/g

Case

- PE cont.
 - Abd - +post-surgical scar, +bs, soft, non-distended, +tenderness to palpation in RUQ and RLQ
 - EXT - s/p rt 2nd toe amputation, no edema, no rash
 - Port in left chest
 - Neuro - alert and oriented x3

Case

- Labs
 - WBC – 3.1
 - H/H – 11.7/36.2
 - INR – 1.2
 - Glucose – 1,057
 - Amylase – 141
 - Lipase – 14

Case

- U/S – Normal liver, CBD, s/p cholecystectomy

Case

- Admitted to Medicine team for N/V, malnourishment
- GI consult obtained for malnourishment
- GI determined pt would be best served by having a feeding tube placed as po intake mainly limited by pain
- Elected to place DPEJ due to chronic pancreatitis

Case

- 11/11/04
 - Pt brought to endoscopy for DPEJ placement
 - DPEJ “long and difficult”
 - Multiple sticks (>30) with spinal needle are required to access small bowel – procedure takes >1 hour
 - Tube placed in LLQ and placement verified endoscopically
 - PEJ secured at 5cm from skin to lumen

Case

- 11/11 – 11/12
 - Mild serosanguinous drainage from PEJ site with abd pain
 - TF started 11/12– Peptamen with goal of 33cc/hr
- 11/13 – KUB normal
- 11/14 – symptoms improved
- 11/15 – pt discharged home
 - Levaquin 500mg qd x8 days - ?for UTI

Case

- 11/21
 - Pt presents to Norton Hospital ER with 3d hx of severe abd pain around PEJ site
 - +Fever at home to 101.0
 - States she was not on any antibiotics at home
 - PE – T 98.0
 - +tenderness at PEJ site, +peritoneal signs
 - Labs – WBC – 21.0; 2% bands

Case

- Imaging
 - Gastrograffin study – free flow of contrast into small bowel without extravasation
 - CT – LLQ loculated, rim enhancing extraluminal fluid collection with gas bubble measuring 6.5 x 1.5 cm with nearby small bowel thickening; cirrhosis and moderate ascites

Case

- UL surgery consulted
 - Exploratory laparotomy 11/21/04 for suspected abscess
 - Ascitic fluid present, non-purulent
 - Abscess in vicinity of jejunal tube
 - Jejunal tube in small bowel – removed and jejunotomy repaired
 - Abscess fluid grew MRSA and Enterococcus faecalis

Case

- Pt developed MRSA wound infection
- Treated with Vancomycin and slowly improved
- Discharged to a skilled nursing unit to complete antibiotic course on 12/3/04

DPEJ History

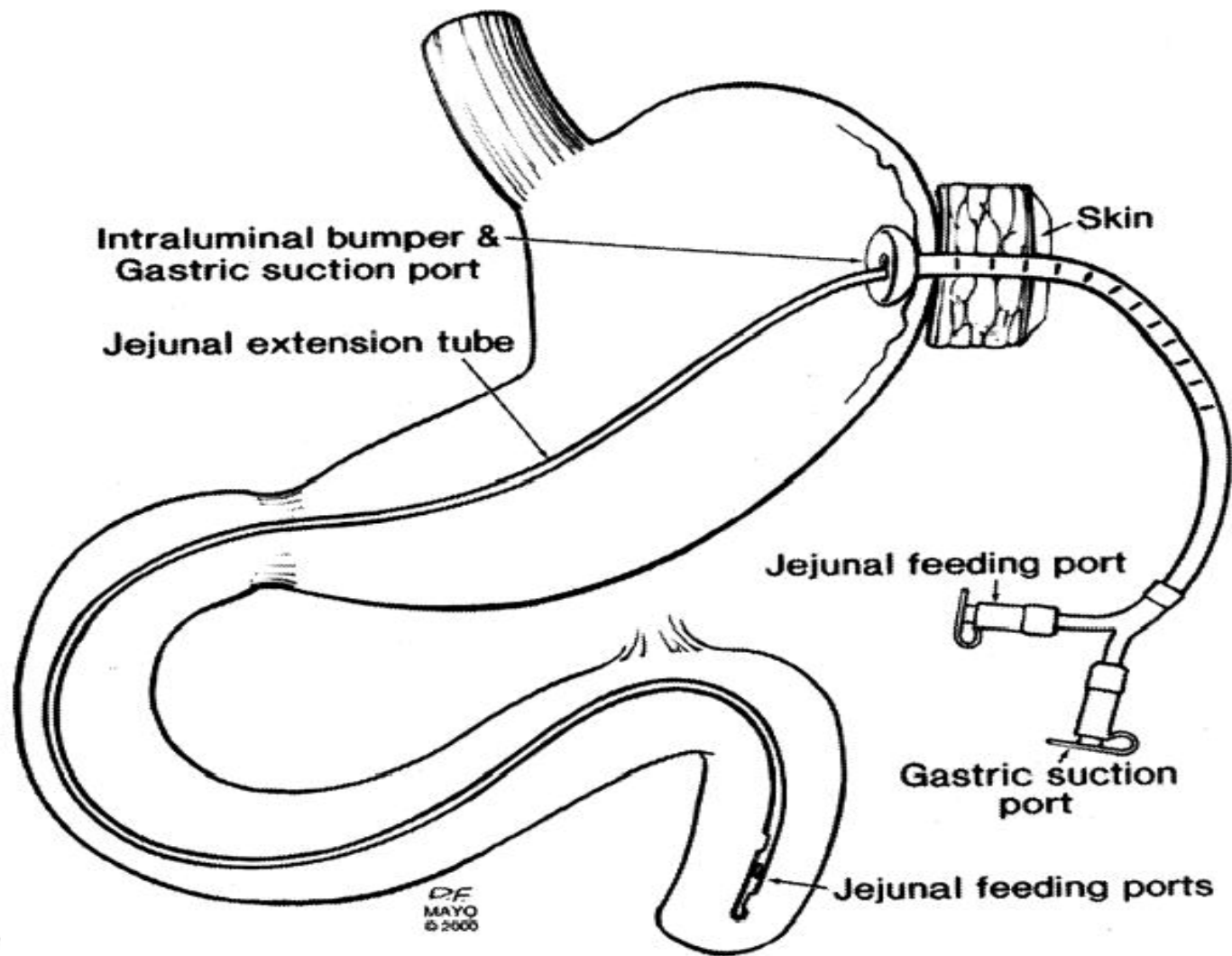
- 1981 - Percutaneous endoscopic gastrostomy (PEG) introduced
 - Low complication rate
 - Procedure of choice for most patients who needed enteral access
- Some patients require jejunal feedings
- 30% risk of aspiration

Indications for Jejunal Feeding

- High aspiration risk
- Gastric outlet obstruction
- Gastroparesis
- Duodenal obstruction
- Chronic pancreatitis
- Gastric cancer or gastrectomy
- Esophageal resection with gastric pull-up

History

- 1984 – PEG-J introduced
 - Jejunal extension tube placed through existing PEG
 - Mixed results
 - Tube often migrated proximally
 - Patients still had aspiration
 - Tube kinked, clotted
 - Required frequent re-intervention



DPEJ History

- 1987 – DPEJ technique described by Shike et al
 - 11 patients with gastrojejunostomies +/- gastrectomy
- 1991 – Shike describes technique in 6 patients with intact stomach and duodenum

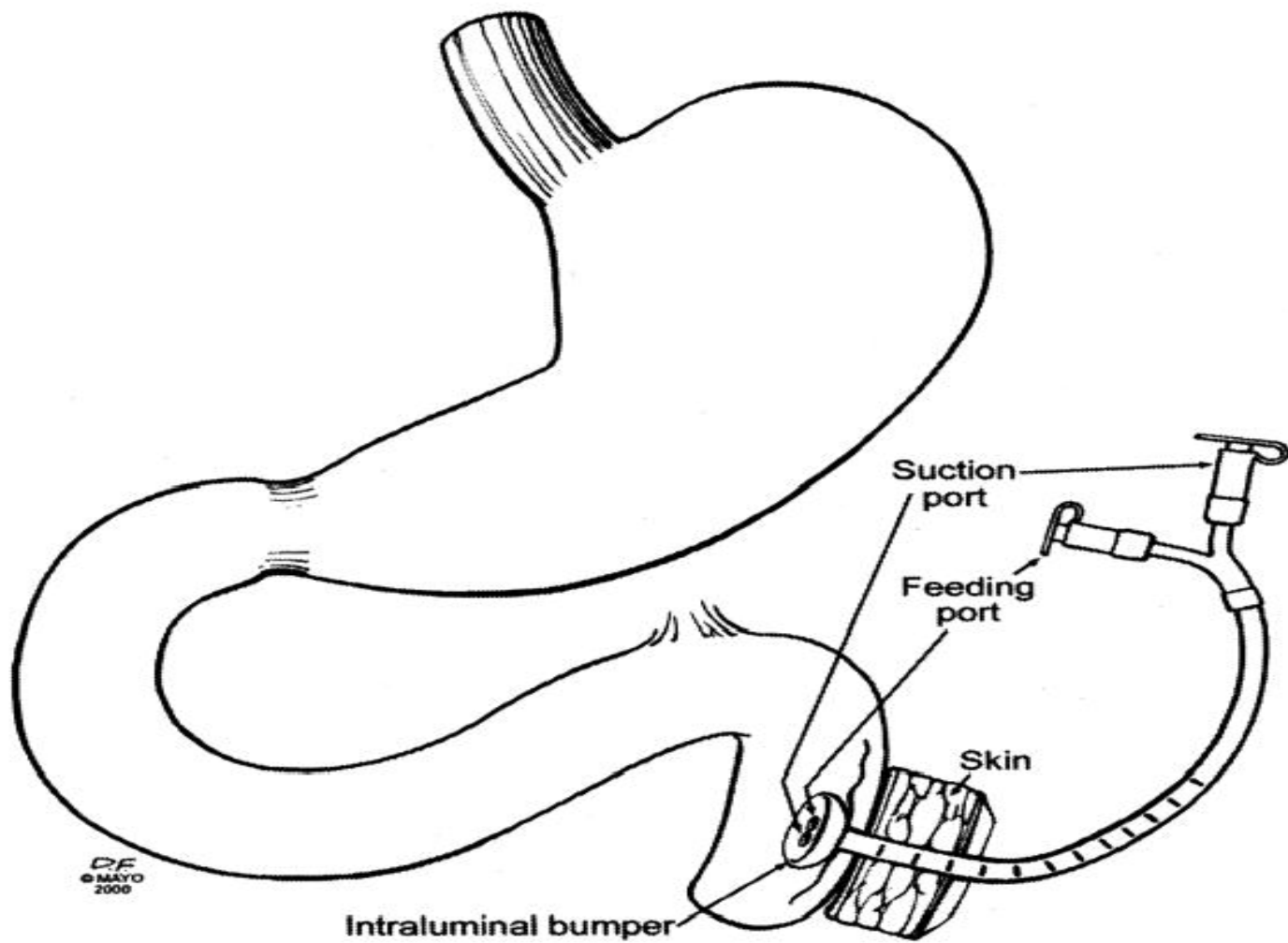
DPEJ Technique

- Modification of method described by Ponsky for PEG placement
- Enteroscope or pediatric colonoscope is advanced into jejunum
- Abdomen is prepped
- Transillumination is performed and intra-jejunal indentation is noted

DPEJ technique

- Plastic sheath with stylet is quickly introduced into jejunal lumen
- Stylet is removed
- Wire passed through stylet and snared
- Scope with wire removed
- Standard pull-type PEG tube is passed into position and secured





DPEJ

- Mellert et al – 1994
- 44 patients
- 39 (88%) successful
- Failure of transillumination, peritonitis, severe coagulation disorders

DPEJ

- Shike et al - 1996
 - 150 patients attempted – all with cancer
 - 129 (86%) successful
 - Failure to transilluminate, inability to pass endoscope
 - Wound infection (9), bleeding (1), abscess (1), colonic perforation (1)
 - Barium studies obtained in 10 patients

DPEJ

- Baron - 2000
 - 36 pt referred for DPEJ at Mayo Clinic
 - Successful in 26 (72%)
 - Failure to transilluminate (8) and SB stricture (2)
 - No patients required reintervention during f/u
 - Pain, drainage, enterocutaneous fistula (2)
 - High patient satisfaction

DPEJ vs. PEG-J

- Fan et al 2002
 - 54 DPEJ, 49 PEG-J
 - Aspiration and gastroparesis
 - DPEJ successful in 72.7% vs. 92.5% in PEG-J
 - 13.5% DPEJ required reintervention vs. 55.9% of PEG-J
 - Conclusion – DPEJ is preferable to PEG-J for long-term jejunal access

DPEJ Benefits

- Safe – complication rate similar to PEG
- Effective – more stable jejunal access
- Low reintervention rate
 - Tube unlikely to clog – larger diameter tube
- Less aspiration than PEG?
- Can be placed in patients with altered GI tract anatomy

DPEJ Drawbacks

- Technically more difficult than PEG or PEG-J
 - Lower success rate
- Longer procedure and sedation time
- Multiple abdominal sticks may be required
 - Risk of abscess, perforation
- Enterocutaneous fistula when removed

Case Review

- What happened?
 - Multiple sticks
 - Poor sterile technique
 - Immunosuppressed patient
 - Longer course of antibiotics needed