Colonic Atresia

Melissa Wong, M.D.
SUNY Downstate Medical Center
24 July 2014
Case Presentation

2d old F, born 41+2 GA

- Pregnancy:
  - recurrent UTIs
  - normal amniocentesis
  - prenatal US: cystic structure adjacent to GB (not seen on subsequent study)
  - C-section for NRFHT

- Birth weight 3070 g
- Apgar 9' / 9'
- Breastfed
- “Passed meconium but no BM”
Case Presentation

- DoL 2: bilious “spit up”, abdomen distended
  - NPO
  - transfer to NICU
  - hydrated, electrolytes corrected
  - Ped Surg consult
  - UGIS and BE on DoL 3
Case Presentation

Physical Exam
- Vitals stable on room air
- OG sump tube
- Triangular faces, low set ears
- Abdomen soft, distended
- Normal external genitalia
- Patent anus
Operation DoL #4

Findings

● 2 colonic atresias:
  ○ membranous atresia at hepatic flexure
  ○ blind sac atresia at R transverse colon

● proximal dilated terminal ileum & R colon; microcolon distally
  ○ jejunum collapsed

● other findings:
  ○ staggered diverticuli of distal colon
  ○ normal appendix
Operation DoL #4

Procedure:
- Atresias resected
- Distal colon irrigated with saline → patent
- Stapled tapering coloplasty of dilated R colon
- Hand-sewn end-to-end anastomosis x2
Pathology

- Thinned colonic wall c/w atresia
- Dilated adjacent colon
- Ganglion cells present throughout, incl atretic & dilated parts
Post-Op Course

POD 1: TPN started
POD 2: Passed BM
POD 4 / 7 / 11: abd distended, free air on XR → BE (+) for anastomotic leak
- 4 & 7: Ex Lap, washout, repair of anastomotic leaks (from both), omentopexy, Broviac placement
- 11: Ex Lap, resection of anastomoses x2, primary colo-colonic anastomosis

POD #13: BE shows no leak
Colonic Atresia

Melissa Wong, M.D.
SUNY Downstate Medical Center
24 July 2014
History

- 1673: 1st case reported by Binninger
- 1922: 1st survivor reported by Dr. Gaub
  - sigmoid atresia → colostomy
- 1947: 1st case of 1º anastomosis reported by Dr. Potts
  - transverse colon atresia
Epidemiology

- Intestinal atresias: 1 in 1500 - 40,000
  - <10% colonic
- M = F
- full term
- 47% have other anomalies
  - Gastroschisis
  - intestinal atresias
  - malrotation
  - Hirschsprung’s
Etiology

● Vascular
  o Louw & Barnard 1955: dog fetus study
  o mechanical:
    ▪ volvulus, intussusception, gastroschisis
  o fetal Varicella or Borrellia infection:
    injury to enteric plexus → poor vessel development → ischemia
  o genetic:
    ▪ familial clustering
Presentation & Imaging

- bilious vomiting
- distension
- failure to pass meconium

- US
  - prenatal US

- XR
  - dilated loops
  - air-fluid levels
  - intraperitoneal calcifications
Imaging (cont.)

- Contrast enema
  - wind sock = Type 1
Imaging (cont.)

- Contrast enema
  - hook sign = Type 3a
Operative Approaches

- Historically: by location
  - proximal to splenic flexure → 1º anastomosis
  - distal → ostomy
- Calibre discrepancy
Operative Approaches

● Historically: by location
  ○ proximal to splenic flexure → 1º anastomosis
  ○ distal → ostomy

● Calibre discrepancy
  ○ ostomy
  ○ tapering
  ○ end ileostomy + cecal blow hole + mucus fistula
    (Corbett, Turnock)

● Current approach: primary anastomosis
Operative Approaches

- Operate early
  - surgery at >72 hrs → higher mortality
  - closed loop obstruction
- Check patency
- Rule out other anomalies
- Resect both atretic ends
- Decompress proximal bowel
Outcomes

- low operative mortality
- major risk factors for poor outcome:
  - associated anomalies
  - late diagnosis/tx
  - TPN-related complications (e.g. cholestatic liver damage, line sepsis)
Summary

- Rarest type of intestinal atresia
- Probable vascular etiology
- 4 types

- Workup: AXR, BE
- OR: resect atretic ends, primary anastomosis
References


