

Carlos F. Sanchez-Glanville MD

5/9/12

Anastamotic Dehiscence

Anastamotic Dehiscence

- Leakage from the small or large bowel anastamosis
- Increases morbidity and mortality
- Risk of leakage is higher in anastamosis below the peritoneal reflection
 - Anastamosis within 6 cm from the anal verge is higher
 - Some advocate faecal diversion
- Clinically insignificant leaks identified radiologically with water soluble contrast enemas
 - 3-4 times higher than clinically apparent leaks

Anastomotic Leaks After Intestinal Anastomosis: It's Later Than You Think. Neil Hyman, Thomas L. Manchester, Turner Osler, Betsy Burns, Peter A. Cataldo
Ann Surg. 2007 February; 245(2): 254–258.

- 1223 patients underwent an intestinal resection and anastomosis without fecal diversion during the study period.
 - Thirty-three patients (2.7%) developed an anastomotic leak
 - Mortality rate for an anastomotic leak in the literature typically is in the 10% to 15% range
- There is a group of patients who has a more subtle clinical course
 - low-grade fever, prolonged ileus, or failure to thrive
 - Sent home with the mentality of “He’ll do better at home.”

Risk Factors

- Technical factors:
 - Ischemia or edema at bowel ends
 - Tension of the anastomosis
 - Inadequate closure
 - Generalized or localized sepsis near the anastomosis
- Patient factors:
 - Anemia
 - Malnutrition
 - High dose steroids or immunosuppressant agents
 - Medical illness
 - Irradiated bowel
 - Active Inflammatory Bowel Disease at anastomosis
 - Distal Obstruction

Post-operative peritonitis due to anastomotic dehiscence after colonic resection. Multicentric experience, retrospective analysis of risk factors and review of the literature.

Ruggiero R, Sparavigna L, Docimo G, Gubitosi A, Agresti M, Procaccini E, Docimo L. *Ann Ital Chir.* 2011 Sep-Oct;82(5):369-75.

- Leak rate was 8.7% (32/367)
 - 13.3% for emergency vs 5.5% for elective procedures
- Fistula was observed in 7/124 (5.6%)
 - ileocolic, 13/171 (7.6%)
 - colo-colic and 12/72 (16.6%)
- Twenty-one patients with anastomotic dehiscence were treated conservatively
 - 3 underwent reoperation
- 11, with severe dehiscence, in all cases in the left colon, underwent an emergency Hartmann's procedure
 - perioperative mortality rate of 35.7%.
- Site of colonic anastomosis represents the risk factor most strictly related to the anastomotic leak rate

The dehiscence of colorectal anastomoses: the risk factors.

Testini M, Margari A, Amoruso M, Lissidini G, Bonomo GM.

Annali Italiani di Chirurgia. 2000 Jul-Aug;71(4):433-40.

- 200 selected consecutive patients underwent resective colorectal surgery between 1990 to 1997
 - 115 males and 85 females
 - Medium age 50.6 years
 - range 16-87
 - 6% anastomotic leakages

- Risk Factors
 - Chronic obstructive pulmonary disease
 - Perioperative transfusion
 - Level of serum albumin
 - Corticosteroid
 - Sepsis
 - Bowel obstruction
 - Anastomotic level and tension
 - Poor blood supply

Incidence, consequences, and risk factors for anastomotic dehiscence after colorectal surgery: a prospective monocentric study.

Buchs NC, Gervaz P, Secic M, Bucher P, Mugnier-Konrad B, Morel P.

International Journal of Colorectal Disease. 2008 Mar;23(3):265-70. Epub 2007 Nov 22.

- 1018 colorectal resections and 811 anastomoses were performed over 40-month period.
- Increased risk for anastomotic dehiscence:
 - ASA score ≥ 3 ($p = 0.004$)
 - Prolonged (>3 h) operative time
 - Rectal location of the disease

Clinical Presentation

- Depends on the site and the size of the leak
- Fever, tachycardia, oliguria, and prolonged ileus
- Abdominal pain and tenderness or guarding is variable
- Respiratory infection
 - Leak that has been walled off by adjacent organs and omentum to form an abscess located under the diaphragm
- Diarrhea
 - If abscess was formed in the pelvis
- Discharge through the incision or an enterocutaneous fistula
- Significant leak will cause fecal peritonitis and circulatory failure
 - Lead to multiorgan failure

Early predictors of anastomotic leaks after colectomy.

Bellows CF, Webber LS, Albo D, Awad S, Berger DH.

Techniques in Coloproctology. 2009 Mar;13(1):41-7. Epub 2009 Mar 14.

- Respiratory and neurological events occurred in patients with an anastomotic leak ($p < 0.001$).
 - These events occurred early in the postoperative course
 - were usually the first signs and symptoms of a leak
- More patients with a leak had absence of bowel activity by postoperative day 6 compared to patients without a leak ($p < 0.0001$).
- Elevations of the white blood cell count or temperature were a late finding.

Presentation

- Can be detected by physical exam if the anastomoses lies within the reach of the examiners finger and the defect is large
- Leukocytosis and blood cultures with intestinal organisms are suggestive
- Diagnosis relies on CT with IV and PO/Rectal contrast showing extravasation
 - Avoid barium
 - High morbidity with barium peritonitis

Asymptomatic Leaks

- Usually incidentally found
 - Peri-anastamotic air fluid filled collection on CT
- Leak is of no clinical consequence and will heal spontaneously

Symptomatic Leak

- Conservatively treated with:
 - Broad spectrum IV antibiotics
 - Bowel rest
 - Maintaining nutrition by TPN or elemental diet
 - Drainage of pelvic abscess
- If conservative management fails or patient has peritonitis
 - Resuscitation
 - Re-exploration
 - Do not attempt to repair the tissue
 - Too friable in the presence of intraabdominal sepsis and is certain to fail
 - Proximal diversion
 - Preserves the anastomosis
 - Preferred:
 - low extra-peritoneal anastomosis
 - Small leaks
 - Excision of the anastomosis and ostomy
 - Large leaks
 - Patient had resumed oral intake
 - The leak will remain a source of persistent sepsis

Conclusion

- There are many patient factors and technical factors that may predispose to anastamotic dehiscence
- Patient's medical conditions should be optimized prior to an elective procedure

Questions



Bibliography

- **Anastomotic Leaks After Intestinal Anastomosis: It's Later Than You Think.** Neil Hyman, Thomas L. Manchester, Turner Osler, Betsy Burns, Peter A. Cataldo. *Ann Surg.* 2007 February; 245(2): 254–258.
- **Post-operative peritonitis due to anastomotic dehiscence after colonic resection. Multicentric experience, retrospective analysis of risk factors and review of the literature.** Ruggiero R, Sparavigna L, Docimo G, Gubitosi A, Agresti M, Procaccini E, Docimo L. *Ann Ital Chir.*
- **The dehiscence of colorectal anastomoses: the risk factors.** Testini M, Margari A, Amoruso M, Lissidini G, Bonomo GM. *Annali Italiani di Chirurgia.* 2000 Jul-Aug;71(4):433-40. 2011 Sep-Oct;82(5):369-75.
- **Incidence, consequences, and risk factors for anastomotic dehiscence after colorectal surgery: a prospective monocentric study.** Buchs NC, Gervaz P, Secic M, Bucher P, Mugnier-Konrad B, Morel P. *International Journal of Colorectal Disease.* 2008 Mar;23(3):265-70. Epub 2007 Nov 22.
- **Early predictors of anastomotic leaks after colectomy.** Bellows CF, Webber LS, Albo D, Awad S, Berger DH. *Techniques in Coloproctology.* 2009 Mar;13(1):41-7. Epub 2009 Mar 14.