Conservative Management of Colonoscopic Perforations

David Kashan, PGY-4
Richmond University Medical Center
HPI

- 81 M h/o DM, HTN, HLD, Benign colonic polyps
- PSHx: Cataract Sx
- Outpatient C-scope
- Polypectomy of ascending, transverse, and proximal sigmoid colon polyps
- Internal hemorrhoids
HPI

• Upon retroflexion/removal of C-scope, noticed 3-4mm perforation/laceration at 17 cm from the anal verge
• Immediately clipped x 3 by GI, using 2.8mm Resolution Clips
• Post procedure films ordered
Anatomy

- Anal canal: ~5 cm
- Rectum: ~12 cm
- Sigmoid colon: ~40 cm
- Descending colon: ~15 cm
- Transverse colon: ~45 cm
- Ascending colon: ~25 cm
HD 0

• Surgery consulted> Patient was hemodynamically stable, afebrile
• Abdomen: soft, distended, minimally tender to palpation bilateral lower quadrants
• NPO, IVF, IV Abx, serial abdominal exams
• GI placed rectal tube for comfort/decompression
Started on CLD HD 2> advanced as tolerated
No WBC/No shift
Remained afebrile, pain resolved
Discharged on HD#4 with total of 14 days of P.O. Cipro/Flagyl
Questions?

www.downstatesurgery.org
Colonoscopic Perforations

• Background
• Risk Factors
• Diagnosis
• Management Options
• Literature Review
• Conclusions
Background

- Incidence: approximately 0.016-5% for C-scope
- Sigmoidoscopy <1%
- #1 Location: **Rectosigmoid** Junction, accounts for ~50% of perforations > WHY?
Colonoscopic perforation: Incidence, risk factors, management and outcome

Incidence of CP, management and outcomes from recent series with sample size > 30,000 cases

<table>
<thead>
<tr>
<th>Author</th>
<th>Year</th>
<th>Number of patients</th>
<th>CP rate</th>
<th>Death rate in CP cases</th>
<th>CPT rate in CP cases</th>
<th>Surgical treatment (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Araghizadeh et al[14]</td>
<td>2001</td>
<td>34,620</td>
<td>0.090</td>
<td>3.2</td>
<td>NA</td>
<td>74</td>
</tr>
<tr>
<td>Gatto et al[9]</td>
<td>2003</td>
<td>74,584</td>
<td>0.145</td>
<td>5.6</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>Korman et al[17]</td>
<td>2003</td>
<td>116,000</td>
<td>0.032</td>
<td>0.0</td>
<td>NA</td>
<td>95</td>
</tr>
<tr>
<td>Cobb et al[16]</td>
<td>2004</td>
<td>43,609</td>
<td>0.032</td>
<td>0.0</td>
<td>21.4</td>
<td>93</td>
</tr>
<tr>
<td>Lüning et al[4]</td>
<td>2007</td>
<td>30,366</td>
<td>0.115</td>
<td>8.6</td>
<td>40.0</td>
<td>100</td>
</tr>
<tr>
<td>Rabeneck et al[18]</td>
<td>2008</td>
<td>97,091</td>
<td>0.085</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>Iqbal et al[2]</td>
<td>2008</td>
<td>258,248</td>
<td>0.070</td>
<td>7.0</td>
<td>36.0</td>
<td>92</td>
</tr>
<tr>
<td>Teoh et al[3]</td>
<td>2009</td>
<td>37,971</td>
<td>0.113</td>
<td>25.6</td>
<td>48.7</td>
<td>91</td>
</tr>
<tr>
<td>Arora et al[15]</td>
<td>2009</td>
<td>277,434</td>
<td>0.082</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
</tr>
</tbody>
</table>

CP: Colonoscopic perforation; CPT: Complication; NA: Not available.
Risk Factors

- **Increased Age (>75):** 4-6x increased
- Diverticular disease
- **Therapeutic Endoscopy/EMR**
- Polypectomy >20mm
- Use of ABC
- Female > Male
- Surgeon-performed C-scopes
- Previous Pelvic Surgery
Diagnostic vs Therapeutic
Diagnosis

• **Physical Examination**
  • Seen upon withdrawal/retroflexion of scope
  • AXR/CXR
  • CTAP
• **NO** role for rectal contrast study
• Consider post-polypectomy syndrome (0.03%)
Treatment Options

- Surgery
- Conservative Management
- Endoscopy
Surgery

- Indications?
- Exploratory laparotomy vs laparoscopy
- Primary repair vs bowel resection vs bowel resection with ostomy creation
- Usually required if underlying pathology: strictures, cancer, IBD
- Tears >50% of circumference
Initial repair of iatrogenic colon perforation using laparoscopic methods. Bleier JI¹, Moon V, Feingold D, Whelan RL, Arnell T, Sonoda T, Milsom JW, Lee SW.

- Prospective study, 18 patients
- 11 laparoscopic, 7 open
- Similar ages/comorbidities
- Compared laparoscopy vs open surgery
- Conclusion: Less morbidity, decreased pain, shorter hospital stay
Primary Repair

- Can be done Open vs laparoscopic
- Must be less then 50% circumference
- Healthy/viable appearing tissue
- Early recognition (<48 hours)
Conservative Management

- NPO/IVF
- Abx **within** 24 hours
- +/- ?Verres needle desufflation
- Close observation/Serial abdominal exams
- **33-77% success rate** (**Increased** with prep)
- PO challenge after 48 hours
Endoscopy

• First successful endoscopic repair in 1997
• Perforation usually <10mm
• Can be up to 3 cm now with detachable snares/clips/metal rings
Retrospective review 75 patients with endoscopic repair/clipping
- Only 4 patients >10 mm perforations
- 69-93% did not require surgery
- Remained on CLD until ROBF
- D/C’d HD 2-8


Our experience with endoscopic repair of large colonoscopic perforations and review of the literature.

*Trecca A*, *Gaj F*, *Gagliardi G.*
Therapeutic options for iatrogenic colon perforation: feasibility of endoscopic clip closure and predictors of the need for early surgery.

Cho SB, Lee WS, Joo YE, Kim HR, Park SW, Park CH, Kim HS, Choi SK, Rew JS.
Hwasoon Chonnam National University Hospital, Hwasoon, Korea

- Retrospective, multicenter review
- 32 patients
- 29/32 successfully clipped
- 75% managed medically
- 25% required subsequent surgery
- Conclusion: Higher incidence of surgery with larger perforations/free air, leukocytosis, fevers, peritonitis
Verres Needle Desufflation as an Effective Treatment Option for Colonic Perforation After Colonoscopy

Evie Broeders, MD,* † Mahdi Al-Tahe, MD, † Koen Peeters, PhD, MD, ‡ and Nicole Bouvy, MD, PhD‡

• Retrospective study > January 2007-2012
• Detected <24 hours from time of C-scope

FIGURE 1. Overview of treatment of subjects.
Further Evaluation/Imaging/Studies??

• Not unless clinically warranted
• Enemas/repeat C-scope in the acute phase can dislodge clips/worsen perforations
• Fevers, worsening/persistent pain, leukocytosis, failed PO challenge
Conclusion

- Early diagnosis and management significantly decreases morbidity/mortality
- Endoscopic intervention with close surgical observation is key
- Surgery within 48 hours if clinically warranted