Management of Diverticulitis

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MBBS MS FRACS

0411 051 281
• Trained by CSSANZ in Oxford (UK) and Perth
• Appointments at BMDH, HSS, Norwest Private and SAN Hospital
• Surgery performed:
  • Laparoscopic and open colorectal surgery
  • Laparoscopic general surgery (including gall bladders and hernias)
  • Perianal conditions
  • Endoscopy
• Patients seen within seven days
• Strictly “no gap”
• Happy to bulk bill (please note on referral)
Diverticular disease

- Diverticula form at weak points in the bowel wall
- Often where vasa recta vessels penetrate the muscle layer
- Most common in left colon (70-90%)
Why does it occur?

- **Congenital**

- **Acquired**
  - Association with Western diets high in refined carbohydrates and low in dietary fibre
  - Deficiency of vegetable fibre in diet
  - Disordered motility
  - Hyperelastosis may lead to structure change
  - Collagen abnormalities
  - Age

![Spherical Vessel](image-url)
Prevalence

- < 10% in people under 40 year old
- 50% to 66% over age 80
- 10-25% develop symptoms from it

<table>
<thead>
<tr>
<th>Symptom</th>
<th>Frequency (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abdominal tenderness in the left lower quadrant</td>
<td>93-100</td>
</tr>
<tr>
<td>Elevated white blood cell count</td>
<td>69-83</td>
</tr>
<tr>
<td>Fever</td>
<td>57-100</td>
</tr>
<tr>
<td>Nausea</td>
<td>10-30</td>
</tr>
<tr>
<td>Vomiting</td>
<td>15-25</td>
</tr>
<tr>
<td>Constipation</td>
<td>10-30</td>
</tr>
<tr>
<td>Diarrhea</td>
<td>5-15</td>
</tr>
<tr>
<td>Dysuria</td>
<td>5-20</td>
</tr>
<tr>
<td>Change in urinary habits</td>
<td>6-25</td>
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</tbody>
</table>
Pathophysiology

- Faecolith
- Bacterial flora
- Micro or macro perforation
- 75 to 90 percent have uncomplicated diverticulitis
Various presentations

- **Emergency:**
  - Diverticulitis – uncomplicated
  - Diverticulitis - complicated
  - Obstruction
  - Diverticular bleed

- **Chronic:**
  - Recurrent diverticulitis attacks
  - Fistula (colovaginal/colovesical)
**Hinchey classification**

<table>
<thead>
<tr>
<th>Hinchey classification</th>
<th>Modified Hinchey classification</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Stadium</strong></td>
<td><strong>Findings</strong></td>
</tr>
<tr>
<td>I</td>
<td>Pericolic phlegmon or abscess</td>
</tr>
<tr>
<td>II</td>
<td>Pelvic, abdominal or retroperitoneal abscess</td>
</tr>
<tr>
<td>III</td>
<td>Purulent peritonitis</td>
</tr>
<tr>
<td>IV</td>
<td>Faecal peritonitis</td>
</tr>
</tbody>
</table>
1. Uncomplicated Diverticulitis
   (Hinchey 0 or Ia)
Severe or complicated diverticulitis is managed with bowel rest, IV fluids and IV antibiotics.

For empirical therapy, use:

- **gentamicin IV**
- **PLUS**
  - amoxy/ampicillin 2 g IV, 6-hourly
- **PLUS**
  - metronidazole 500 mg IV, 12-hourly.

If IV antibiotics are required beyond 72 hours or if gentamicin is contraindicated:

- **piperacillin+tazobactam 4+0.5 g IV, 8-hourly**
- **OR**
  - ticarcillin+clavulanate 3+0.1 g IV, 6-hourly.
Are antibiotics really needed?
• Multicentre trial in Sweden involving ten hospitals

• 623 patients randomised into treatment with and without antibiotics
• Median hospital stay 3 days in both groups
• Recurrent diverticulitis at one year similar in both groups
• Conclusion – “Antibiotics for uncomplicated diverticulitis does not accelerate recovery”
155 patients

97.4 percent of patients managed successfully as outpatients with no antibiotics

2.6 percent required later admission and treatment with antibiotics not requiring surgery

Conclusion – “Outpatient management with acute uncomplicated diverticulitis is now shown to be feasible”
Is a diet restriction needed?
All patients hospitalised with Hinchey 0, 1a and 1b diverticulitis between 2010 and 2011

256 patients included
<table>
<thead>
<tr>
<th>Patient characteristics</th>
<th>Nil per os N=65</th>
<th>Clear liquid diet N=89</th>
<th>Liquid diet N=75</th>
<th>Solid foods N=29</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>Male</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age (mean)</td>
<td>56.6 (13.1)</td>
<td>59.6 (12.3)</td>
<td>59.9 (14.7)</td>
<td>57.6 (14.8)</td>
</tr>
<tr>
<td>ASA</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I</td>
<td>23 (35.4%)</td>
<td>44 (49.4%)</td>
<td>29 (38.7%)</td>
<td>11 (40.7%)</td>
</tr>
<tr>
<td>II</td>
<td>36 (55.4%)</td>
<td>34 (38.2%)</td>
<td>41 (54.7%)</td>
<td>15 (55.6%)</td>
</tr>
<tr>
<td>III</td>
<td>5 (7.7%)</td>
<td>10 (11.2%)</td>
<td>5 (6.7%)</td>
<td>1 (3.7%)</td>
</tr>
<tr>
<td>IV</td>
<td>1 (1.5%)</td>
<td>1 (1.1%)</td>
<td>0 (0%)</td>
<td>0 (0%)</td>
</tr>
</tbody>
</table>

| Physical/serologic examination |                |                        |                  |                  |
| Temperature (mean)           | 37.7 (0.80)    | 37.5 (0.75)            | 37.4 (0.75)      | 37.3 (0.97)      |
| CRP (mean)                  | 118 (92.7)     | 114 (92.6)             | 103 (93.3)       | 83 (74.1)        |
| Leucocyte count (mean)       | 12.9 (4.7)     | 12.5 (3.6)             | 11.9 (3.7)       | 11.9 (5.1)       |

| Treatment |                |                        |                  |                  |
| Antibiotics | 26 (40.6%)     | 25 (28.1%)             | 24 (32.0%)       | 7 (25.9%)        |
| Days hospitalized (median)  | 5 (1-16)       | 4 (1-15)               | 3 (1-8)          | 3 (2-4)          |
| Complications | operatively | 1 (1.5%)               | 1 (1.1%)         | 0 (0%)           |
| days conservatively        | 1 (1.5%)       | 2 (2.2%)               | 1 (1.3%)         | 0 (0%)           |
| N successive diets (median)| 3 (2-4)        | 3 (1-3)                | 2 (1-2)          | 1                |
Medical Treatment of Acute Diverticulitis

1. Nonoperative treatment typically includes oral or intravenous antibiotics and diet modification. Grade of Recommendation: Strong recommendation based on low-quality evidence, 1C.
2. Complicated diverticulitis with abscess

(Hinchey Ib or II)
Very few studies have evaluated antibiotic treatment alone versus radiological drainage.
Success rate of medical therapy 85.9 percent
Less favourable medical therapy in abscesses greater than 5 cm

1996

Factors Affecting the Successful Management of Intra-Abdominal Abscesses With Antibiotics and the Need for Percutaneous Drainage

2005

Retrospective review of 114 patients
66 patients improved with medical therapy
More likely to fail when abscess greater than 6.5cm in size.
But things have changed since then...

- More accurate CT scanning
- More accessible points in abdomen
- Better experience and equipment

- So surgeons probably likely to use radiological drainage for smaller abscess
2. Image-guided percutaneous drainage is usually the most appropriate treatment for stable patients with large diverticular abscesses. Grade of Recommendation: Strong recommendation based on moderate-quality evidence, 1B.
CAN THESE PATIENTS WITH AN ABSCESS BE MANAGED MEDICALLY?
Does the Presence of Abscesses in Diverticular Disease Prelude Surgery?

B. J. M. van de Wall · W. A. Draaisma · E. C. J. Consten · R. T. van der Kaaij · M. J. Wiezer · I. A. M. J. Broeders

- Retrospective review of all patients between 2005 and 2011
- 59 patients with an abscess and 663 patients without
- Median follow up of 28 months
<table>
<thead>
<tr>
<th></th>
<th>Diverticulitis without abscess (Hinchey Ia), N=635</th>
<th>Diverticulitis with abscess (Hinchey Ib–II), N=54</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total follow-up (range)</td>
<td>Median (months)</td>
<td>28 (12–103)</td>
</tr>
<tr>
<td>Readmission</td>
<td>Overall</td>
<td>94 (14.8 %)</td>
</tr>
<tr>
<td></td>
<td>Within 1 month</td>
<td>20 (3.1 %)</td>
</tr>
<tr>
<td></td>
<td>After 1 month</td>
<td>74 (11.7 %)</td>
</tr>
<tr>
<td>Readmission disease severity</td>
<td>Uncomplicated</td>
<td>89 (14 %)</td>
</tr>
<tr>
<td></td>
<td>Complicated (abscess + perforation)</td>
<td>5 (0.8 %)</td>
</tr>
<tr>
<td></td>
<td>Abscess</td>
<td>4 (0.6 %)</td>
</tr>
<tr>
<td></td>
<td>Perforation</td>
<td>1 (0.2 %)</td>
</tr>
<tr>
<td>Surgical treatment</td>
<td>Overall</td>
<td>124 (19.5 %)</td>
</tr>
<tr>
<td></td>
<td>Symptomatic stenosisb</td>
<td>17 (2.7 %)</td>
</tr>
<tr>
<td></td>
<td>Fistulasc</td>
<td>5 (0.8 %)</td>
</tr>
<tr>
<td></td>
<td>Perforationd</td>
<td>2 (0.3 %)</td>
</tr>
<tr>
<td></td>
<td>Persisting/recurring complaintse</td>
<td>100 (15.7 %)</td>
</tr>
<tr>
<td>Median time-to-event (range)</td>
<td>Readmission: overall (months)</td>
<td>7.5 (0–73)</td>
</tr>
<tr>
<td></td>
<td>Readmission: &lt;1 month (days)</td>
<td>8 (1–30)</td>
</tr>
<tr>
<td></td>
<td>Readmission: &gt;1 month (months)</td>
<td>11 (1–73)</td>
</tr>
</tbody>
</table>
Medically Treated Diverticular Abscess Associated With High Risk of Recurrence and Disease Complications

Bikash Devaraj, M.D. • Wendy Liu, M.D. • James Tatum, M.D. • Kyle Cologne, M.D. • Andreas M. Kaiser, M.D.

Division of Colorectal Surgery, Department of Surgery, Keck School of Medicine, University of Southern California, Los Angeles, California

• Review of all patients with a diverticular abscess between 2004 and 2014

• 210 patients
FIGURE 4. Outcomes of CT-guided drainage (CGD).
Key points:

- Larger abscess were associated with a higher risk of recurrence (5.3cm vs 3.2cm)
- Overall 59 percent of patients with a recurrence required surgery
ADVICE TO PATIENTS
• Retrospective review of 954 patients over 7 year period

• Overall recurrence at 5 years of 36 percent

• More likely to recur if:
  - Family history of diverticulitis
  - Long segment of colon involved
  - Retroperitoneal abscess
Diet changes

Nut, corn and popcorn consumption and the incidence of diverticular disease


For many years patients have been advised to avoid nuts and seeds

Prospective study of 47228 men over 18 years

Inverse association between consumption of nuts and seeds, and incidence of diverticulitis

Conclusion – “No association between consumption of nuts and seeds and diverticulitis”
WHO SHOULD BE OFFERED SURGERY?
Elective Surgery for Acute Diverticulitis

1. The decision to recommend elective sigmoid colectomy after recovery from uncomplicated acute diverticulitis should be individualized. Grade of Recommendation: Strong recommendation based on moderate-quality evidence, 1B.
SURGERY
Surgery – All about blood supply!
CASE
68 year old gentleman presented to GP with left iliac fossa pain, peritonism and fevers

Previous attacks of diverticulitis 6 months and 2 years ago
Thank you