Diverticulosis – Diverticulitis

20.03.2013

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References


Practice Guidelines. Diagnosis and Management of Diverticular Disease of the Colon in Adults. Stollman NH et al. Am J Gastroenterol 1999;94:3110
Epidemiology

- <40y: <10%
- 60y: ~30%
- >80y: >60%
- Male ≈ Female
- ‘disease of western civilization’

- Involvement of sigma: ~90%
- Right-sided involvement: -15%
Natural course

Diverticulosis

- Asymptomatic: 70-75%
- Diverticular bleeding: 5-15%, cease spont. 75%
  1/3 major bleeding
- Recurrent bleeding episodes: up to 50%
  2nd bleeding episode: 14-38%
  Recurrent bleeding episodes: up to 50%

Diverticulitis

- Simple: 10-25%
- Complicated: 20-25%
  Abscess
  Perforation
  Obstruction
  Fistula

2) [Stollman N, Raskin JB. Diverticular disease of the colon. Lancet 2004;363:631]
Risk factors / modifying factors

- **Fibre intake:** Controversial\(^1\)
  - Possible benefit for symptomatic uncomplicated diverticular disease\(^2\)
  - Inverse correlation fibre intake – diverticular complications\(^3\)

- **Physical activity:** protective effect on symptomatic diverticulosis\(^4\)

- **Smoking:** controversial\(^5\),\(^6\)

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1) [Peery AF et al. A high-fiber diet does not protect against asymptomatic diverticulosis. Gastroenterology 2012;142:266]
2) [Brodribb AJ. Treatment of symptomatic diverticular disease with a high-fibre diet. Lancet 1977;1:664]
5) [Crowe FL et al. Diet and risk of diverticular disease in Oxford cohort of European Prospective Investigation into Cancer and Nutrition (EPIC): prospective study of British vegetarians and non-vegetarians. BMJ 2011;343:d4131]
Risk factors / modifying factors

- Alcohol consumption: prob. no effect<sup>1</sup>
- Caffein consumption: prob. no effect<sup>1</sup>

- Obesity: in association w/ low fibre/high fat/meat diet, risk for CO<sup>2</sup>
  BMI >30kg/m<sup>2</sup> vs. <21kg/m<sup>2</sup>: Diverticulitis RR 1.78, diverticular bleeding RR 3.19

- NSAID: risk for complications (diverticulitis, bleeding)<sup>3</sup>
  ASA: diverticulitis HR 1.25, diverticular bleeding 1.70
  NSAID: 1.72, diverticular bleeding 1.74

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2) [Strate LL et al. Obesity increases the risks of diverticulitis and diverticular bleeding. Gastroenterology 2009;136:115]  
3) [Strate LL et al. Use of aspirin or nonsteroidal anti-inflammatory drugs increases risk for diverticulitis and diverticular bleeding. Gastroenterology 2011;140:1427]
### Diagnosis

- Clinical diagnosis with low accuracy\(^1\)
  - PPV 65%

- High accuracy für CT and Ultrasound
  - CT: PPV 95%, NPV 99%; Sensitivity (69-)95%, Specificity 75-100%\(^2,3\)
  - US: PPV -100%, NPV 99%; Sensitivity 84-98%, Specificity 80-98%\(^4-6\)

- CT prognostically useful\(^7,8\)
  - Severity of initial CT predicts failure of medical treatment and risk of secondary complications

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Diagnosis – imaging signs

- air or contrast filled diverticula
- pericolic stranding (98%)
- wall thickening (70%)
- perocolic phlegmona (35%)
- Abscesses
- Perforation / free air

Imaging
# Staging

<table>
<thead>
<tr>
<th>Hinchey</th>
<th>Description</th>
<th>Mortality</th>
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<tbody>
<tr>
<td>0</td>
<td>Acute uncomplicated</td>
<td>0%</td>
</tr>
<tr>
<td>Ia</td>
<td>Confined pericolic inflammation / phlegmone</td>
<td>0%</td>
</tr>
<tr>
<td>Ib</td>
<td>Confined pericolic abscess</td>
<td>&lt;5%</td>
</tr>
<tr>
<td>II</td>
<td>Distant abscess (retroperitoneal or pelvic)</td>
<td>&lt;5%</td>
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<tr>
<td>III</td>
<td>Generalized putride peritonitis (‘noncommunicating’)</td>
<td>13%</td>
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<tr>
<td>IV</td>
<td>Generalized fecal peritonitis (‘communicating’)</td>
<td>43%</td>
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</table>

Endoscopy

- Not indicated in acute phase
  - Although probably relatively safe
    - Acute colonoscopy w/ better compliance, no higher complication rate, lower cecum intubation rate\(^1\)
    - Probably higher perforation rate (n=1), lower cecum intubation rate\(^2\)
    - Flexible sigmoidoscopy?\(^3\)

Treatment acute phase

- **Uncomplicated diverticulitis: medical treatment**
  - Success rate? 70 – 100% (~ 85%)\(^1\)
  - Need for surgery? <10%
  - Risk of recurrence according to stage\(^2\)
    - Hinchey Ib 12.7%
    - Hinchey II 41.2%

- **Refractory / severe disease, Hinchey (II), III, IV: Surgery**

  Emergency surgery: mortality up to 6%, morbidity up to 72%\(^3\)

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2) [Kaiser AM et al. The management of complicated diverticulitis and the role of computed tomography. Am J Gastroenterol 2005;100:910]
Elective prophylactic surgery

‘Recurrent attacks are less likely to respond to medical therapy’

‘and have a higher mortality rate’

‘therefore, most authorities agree that elective resection is indicated after two attacks of uncomplicated diverticulitis’

Why?

[Stollman NH et al. Practice Guidelines . Diagnosis and Management of Diverticular Disease of the Colon in Adults. Am J Gastroenterol 1999;94:3110]
Prognosis

- Medical treatment of uncomplicated diverticulitis successful in 70 – 100% (~ 85%)

Prognosis / disease course

Recurrence and major complications requiring surgery after uncomplicated diverticulitis

<table>
<thead>
<tr>
<th>Main author</th>
<th>Year</th>
<th>Number</th>
<th>FU years</th>
<th>Recurrence, %</th>
<th>Surgery %</th>
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<td>Mueller [22]</td>
<td>2005</td>
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<td>Hall [26]</td>
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<td></td>
<td>36</td>
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→ risk of future major complications small
→ risk of future emergency operation need small
→ Medical treatment of future attacks still reasonable / effective
Prognosis / disease course

Percentage of patients with a major complication as their first presentation

<table>
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<th>Main author</th>
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<th>Number</th>
<th>%</th>
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<td>Nylamo [29]</td>
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90% of lethal perforations as first attack

60% of patients with need for emergency surgery as first attack

Risk of Hartmann’s procedure after full recovery of medically treated acute diverticulitis 1/2’000 patient years

Uncomplicated disease course after conservative / surgical treatment of first attack in 73% vs. 79%

→ most patients presenting with major complication of diverticulitis do so as first episode

→ Elective surgery not effective in preventing future complicated attacks

Prognosis / disease course

Recurrence of diverticulitis after surgery

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→ risk of future episodes is reduced, but not eliminated

→ Benefit must be weighed to surgical risk

elective surgery with mortality 1.2-2.3%\(^1,2\), risk factors e.g. age >75y (OR 7.9), obesity (OR 5.2)

Prognosis / disease course

What about patients with chronic symptoms?

Recurrence of symptoms after surgery for uncomplicated diverticulitis

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→ Surgery not so effective in controlling symptoms after uncomplicated diverticulitis
Guidelines on operative treatment

Task force of the American Society of Colon and Rectal Surgeons:
‘the number of attacks of uncomplicated diverticulitis is not necessarily an overriding factor in defining the appropriateness of surgery’
‘the decision to recommend elective sigmoid colectomy … should be made on a case-by-case basis’

Association of Coloproctology of Great Britain and Ireland ACPGBI
‘the majority of patients presenting with acute diverticulitis can be managed with a conservative medical approach in the longer term’
‘the decision on elective resection should be made on an individual basis’


Taken to daily practice

Elective surgery
after successful medical treatment of uncomplicated acute diverticulitis

- Plain number of attacks no longer a central, independent factor

- Other factors to be considered
  - **Severity of index attack** (severe initial attack as predictor of future complications)
  - **Age of patient** (no clear evidence for more aggressive course in younger patients)\(^1\)
  - **Comorbidities** (e.g. immunosuppression as risk factor for complications)
  - **Interference of attacks with daily life** (e.g. tolerance of pain; work; travel habits…)

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To make a long story short

Indication for elective surgery arises from intention to prevent further attacks, not from intention to prevent future complications.
Discussion