Malignant Colonic Obstructions

Dr Craig Harris

Colorectal Surgeon - RBWH
Case Study

93y F

- Lives semi-independently in flat attached to daughters house
- Good quality of life, active
- Loving family
- Presented to ED with LIF pain and weight loss (Sept ‘15)
93F - Malignant LBO
93yF Malignant LBO

- Declined colonoscopy & biopsy
- Declined surgical review
- Discharged home knowing progression will occur
- Gradual worsening of symptoms – persistent pain, PR bleeding, anaemia
93yF Malignant LBO

- Representation May then June 2016
- Anaemia – Hb57
- Poor nutrition – pain on eating, obstructive symptoms, fatigue
- Keen to explore other options. CT still doesn’t show metastatic disease
- Very keen to make it to Granddaughters wedding in early 2017
- Seen by Gastroenterology re palliative stent, but felt surgery would offer better palliation
93yF Malignant LBO

- Long discussion regarding surgical options
- Poor nutrition meant anastomosis would be very high risk
- Underwent uneventful laparoscopic transverse colectomy with en bloc small bowel resection and primary anastomosis, plus end colostomy
  - 1wk inpatient surgical stay
  - 2wks rehab
  - Last Hb = 144
- Final Histology = T4bN2a adenocarcinoma invading small bowel. 10 of 22 LN +ve
Aetiology of malignant LBO

• Usually obstructing adenocarcinoma of colon or rectum
  – Less commonly obstructing anal SCC, lymphoma, extrinsic compression from disseminated peritoneal disease (e.g. ovarian cancer)

• Presence or absence of metastatic disease influences decision making
Estimated number of new cases of bowel cancer diagnosed in 2016

17,520 = 9,815 males + 7,705 females

Estimated % of all new cancer cases diagnosed in 2016

13.4%

Estimated number of deaths from bowel cancer in 2016

4,094 = 2,144 males + 1,950 females

Estimated % of all deaths from cancer in 2016

8.7%

Chance of surviving at least 5 years (2008–2012)

68%

People living with bowel cancer at the end of 2010 (diagnosed in the 5 year period 2006 to 2010)

50,615
<table>
<thead>
<tr>
<th>Cancer type</th>
<th>New cases 2016</th>
<th>% of all new cancers 2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prostate (among males)</td>
<td>18,138</td>
<td>25.2</td>
</tr>
<tr>
<td>Bowel</td>
<td>17,520</td>
<td>13.4</td>
</tr>
<tr>
<td>Breast</td>
<td>16,084</td>
<td>12.3</td>
</tr>
<tr>
<td>Breast (among females)</td>
<td>15,934</td>
<td>27.3</td>
</tr>
<tr>
<td>Melanoma</td>
<td>13,283</td>
<td>10.2</td>
</tr>
<tr>
<td>Lung</td>
<td>12,203</td>
<td>9.4</td>
</tr>
</tbody>
</table>
1 IN 12 PEOPLE WILL DEVELOP BOWEL CANCER IN THEIR LIFETIME
Figure 1: Estimated age-specific incidence rates for bowel cancer, 2016

Number of new cases per 100,000 persons

Source: AIHW analysis of the Australian Cancer Database, (see source table 1).
Colon and Rectal Cancer

- Approximately 60% of colorectal cancer patients are older than 70.
- Elderly patients (age >70-75yrs) are a very heterogenous group.
  - very fit ---------------------- very frail
- Practicing EBM is difficult.
  - Often under-represented in clinical trials and publications about cancer treatment.
Decision making in malignant LBO

- What are we trying to achieve?
  - Palliation vs Cure
- What is the gold standard treatment?
- What is the least invasive effective treatment?
- What is the patient fit for?

WHAT DOES THE PATIENT WANT?
Calculating Surgical Risk

riskcalculator.facs.org
## Surgical Risk Calculator

### Outcomes

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Your Risk</th>
<th>Average Risk</th>
<th>Chance of Outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>Serious Complication</td>
<td>10/20/30%</td>
<td>40/50/60%</td>
<td>35.7% Above Average</td>
</tr>
<tr>
<td>Any Complication</td>
<td>10/20/30%</td>
<td>40/50/60%</td>
<td>40.7% Above Average</td>
</tr>
<tr>
<td>Pneumonia</td>
<td>10/20/30%</td>
<td>40/50/60%</td>
<td>8.2% Above Average</td>
</tr>
<tr>
<td>Cardiac Complication</td>
<td>10/20/30%</td>
<td>40/50/60%</td>
<td>3.9% Above Average</td>
</tr>
<tr>
<td>Surgical Site Infection</td>
<td>10/20/30%</td>
<td>40/50/60%</td>
<td>5.4% Average</td>
</tr>
<tr>
<td>Urinary Tract Infection</td>
<td>10/20/30%</td>
<td>40/50/60%</td>
<td>9.3% Above Average</td>
</tr>
<tr>
<td>Venous Thromboembolism</td>
<td>10/20/30%</td>
<td>40/50/60%</td>
<td>4.7% Above Average</td>
</tr>
<tr>
<td>Renal Failure</td>
<td>This outcome is inapplicable to patients with pre-op renal failure or dialysis.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ileus</td>
<td>10/20/30%</td>
<td>40/50/60%</td>
<td>28.8% Above Average</td>
</tr>
<tr>
<td>Anastomotic Leak</td>
<td>0.9%</td>
<td>1.9%</td>
<td>Below Average</td>
</tr>
<tr>
<td>Readmission</td>
<td>10/20/30%</td>
<td>40/50/60%</td>
<td>24.7% Above Average</td>
</tr>
<tr>
<td>Return to OR</td>
<td>10/20/30%</td>
<td>40/50/60%</td>
<td>6.7% Above Average</td>
</tr>
<tr>
<td>Death</td>
<td>10/20/30%</td>
<td>40/50/60%</td>
<td>32.2% Above Average</td>
</tr>
<tr>
<td>Discharge to Nursing or Rehab Facility</td>
<td>10/20/30%</td>
<td>40/50/60%</td>
<td>81.8% Above Average</td>
</tr>
</tbody>
</table>

**Predicted Length of Hospital Stay: 17 days**
CR-Possum

- Colorectal Physiologic and Operative Severity Score for the Enumeration of Mortality and Morbidity (CR-POSSUM) scoring system

Hey, I just met you and this is crazy

But I'm a possum, now you've got rabies
<table>
<thead>
<tr>
<th>Physiology Score</th>
<th>Operative Severity Score</th>
<th>Mortality (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>16</td>
<td>14</td>
<td>63.5</td>
</tr>
</tbody>
</table>
Emergency Surgery

• A malignant large bowel obstruction is a surgical emergency
• Time (and timing) doesn’t always allow the usual elective surgery workup (ICU, Anaes, Medicine, echo, RFTs, CPEX)
• Prompt decision making is required
Surgery

• Minimally invasive techniques
  – Minimise wound pain, respiratory complications, ileus, earlier return of gut function
Australasian Laparoscopic Colon Cancer Study shows that elderly patients may benefit from lower postoperative complication rates following laparoscopic versus open resection

R. A. Allardyce¹, P. F. Bagshaw¹, C. M. Frampton², F. A. Frizelle¹, P. J. Hewett⁴,⁵, N. A. Rieger⁴,⁵, J. S. Smith³, M. J. Solomon⁶,⁷ and A. R. L. Stevenson⁸ for the Australasian Laparoscopic Colon Cancer Study Group

British Journal of Surgery 2010; 97: 86–91
• Handling of the dilated colon laparoscopically can be difficult
• An incompetent ileocaecal valve reduces urgency, but can also complicate surgery with small and large bowel dilatation
• Degree of colonic distention needs to be assessed
• A long laparoscopic procedure often no better than a quick open operation
Right sided colonic obstructions

• Right ileocolic anastomosis is relatively low risk
• Leak rate <5%
• In appropriately selected patients, this remains a sound approach for obstructing ileocaecal and right sided tumours
• Ileostomy is not an ideal stoma in the elderly population
  – Risks of electrolyte imbalance, dehydration, renal impairment, skin excoriation
  – However if the small bowel is chronically dilated / oedematous / congested / dodgy, may be the only safe option
Transverse colon obstruction

• Depending on the location, right hemicolectomy / extended right hemicolectomy is a safe operation

• Wedge resection of transverse colon tumours can safely be performed, where nodal clearance is less of a priority

• Decision re primary anastomosis v stoma needs to be made on a case-by-case basis
  – Age, comorbidities, inotropes, albumin / nutrition, steroids, sepsis, likely discharge destination
Left colon obstruction

- Traditionally 3 stage operation
  - Defunctioning loop colostomy, then resection and anastomosis, then closure of colostomy
- Nowadays 2 and 1 stage operations safe if the right circumstances with the right patient selection
- Hartmann’s procedure (sigmoid colectomy with end colostomy) is very safe
  - No anastomosis, relatively straightforward
  - Permanent colostomy, issues with stoma cares (eyesight, coordination, arthritis, etc)
Why not just defunction?

- Closed loop obstruction with loop ileostomy if ileocaecal valve patent
- Transverse loop colostomy prone to prolapse
- End colostomy (Abcarian) probably better for permanent defunctioning
Quality of Life

- QoL is multidimensional, dynamic, subjective and patient centered
  - Comprising physical, functional, emotional, and social/family well-being.
  - QoL is an important outcome for evaluating the full impact of the disease on the individuals, their family and their community
Measuring QoL in CRC

**SF36**
- vitality
- physical functioning
- bodily pain
- general health perceptions
- physical role functioning
- emotional role functioning
- social role functioning
- mental health

**FACT – C**
- Physical well-being
- Social/family well-being
- Emotional well-being
- Functional well-being
- Additional concerns
Colonic Stenting
Colonic Stenting

- Ideal for left sided lesions (sigmoid, descending)
- Transverse colon usually ok
- Right colon difficult (but not impossible)
- Perforation rates have fallen since initial studies
- Higher volumes endoscopists have better results?
- Can be used as a “bridge to surgery”
Improving Quality of Life for People with Incurable Large-Bowel Obstruction: Randomized Control Trial of Colonic Stent Insertion

Christopher J. Young, M.B.B.S., M.S.¹,² • Katie J. De-loyde, M.Sc.³
Jane M. Young, Ph.D.²,³ • Michael J. Solomon, M.B.B.Ch. (Hons.), M.Sc.¹,²,³
Emily H. Chew, M.P.H.³ • Chris M. Byrne, M.B.B.S., M.S.¹,²
Glenn Salkeld, B.Bus., G.Dip.Hlth.Econ., M.P.H., Ph.D.³,⁴
Ian G. Faragher, M.B.B.S.⁵

Dis Colon Rectum 2015; 58: 838–849

• Randomised 52 patients with incurable LBO
  – stent v surgery
Improving Quality of Life for People with Incurable Large-Bowel Obstruction: Randomized Control Trial of Colonic Stent Insertion

**Figure 2.** EQ-5D index change scores from baseline to follow-up. A negative score indicates a reduction in QoL. Error bars represent 95% CI (p value, absolute difference).
Improving Quality of Life for People with Incurable Large-Bowel Obstruction: Randomized Control Trial of Colonic Stent Insertion

**FIGURE 3.** Median EQ-5D VAS scores across time points. Median EQ-5D VAS is a scale of 0 to 100, where 100 is the best health imaginable. *p* values shown are between treatment groups at each time point. VAS = visual analog score.
Improving Quality of Life for People with Incurable Large-Bowel Obstruction: Randomized Control Trial of Colonic Stent Insertion

FIGURE 4. Overall survival between treatment groups.
Conclusions:

- Stent use in patients with incurable large-bowel obstruction has a number of advantages with faster return to diet, decreased stoma rates, reduced post-procedure stay, and some quality-of-life benefits.
Stenting large bowel obstruction avoids a stoma: consecutive series of 100 patients

C. J. Young*, M. K. L. Suen†, J. Young† and M. J. Solomon†

* Department of Colorectal Surgery, Royal Prince Alfred Hospital and † Surgical Outcomes Research Centre (SOuRCe), Royal Prince Alfred Hospital and University of Sydney, Sydney, New South Wales, Australia

100 consecutive patients undergoing stenting

• 89% with palliative intent
• 7% 30 day mortality
• 20% morbidity
• Surgery avoided in 69 patients
• Permanent stoma avoided in 72 patients
Stenting large bowel obstruction avoids a stoma: consecutive series of 100 patients

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Table 2 Thirty-day mortality.

<table>
<thead>
<tr>
<th>Patient</th>
<th>Age (years)</th>
<th>Number of days after SEMS insertion</th>
<th>Cause of death</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>81</td>
<td>11</td>
<td>Pneumonia</td>
</tr>
<tr>
<td>2</td>
<td>64</td>
<td>22</td>
<td>Metastatic disease</td>
</tr>
<tr>
<td>3</td>
<td>56</td>
<td>2</td>
<td>Multi-organ failure (prior SEMS insertion as well)</td>
</tr>
<tr>
<td>4</td>
<td>70</td>
<td>5</td>
<td>Pneumonia and respiratory failure</td>
</tr>
<tr>
<td>5</td>
<td>72</td>
<td>20</td>
<td>Metastatic disease</td>
</tr>
<tr>
<td>6</td>
<td>57</td>
<td>14</td>
<td>Liver failure (95% involvement by metastases)</td>
</tr>
<tr>
<td>7</td>
<td>88</td>
<td>11</td>
<td>Perforation (not sure from cecum or stent related as patient had palliative care after perforation)</td>
</tr>
</tbody>
</table>

Table 3 Stent-related morbidity before and after 30 days, and at any time after attempted initial stent insertion in 100 patients.

<table>
<thead>
<tr>
<th>Morbidity</th>
<th>&lt; 30 days (%)</th>
<th>&gt; 30 days (%)</th>
<th>Total (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perforation</td>
<td>4</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>Dislodgement</td>
<td>4</td>
<td>0</td>
<td>4</td>
</tr>
<tr>
<td>Migration</td>
<td>0</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Obstruction</td>
<td>2</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>Bleeding</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Pain*</td>
<td>4</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>Incontinence*</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Impaction</td>
<td>0</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

*One patient had pain and incontinence.
Algorithm

- High volume metastatic disease $\rightarrow$ colonic stent
- Absence of mets and “fit” for surgery $\rightarrow$ resection +/- end stoma
- Anticoagulated (Plavix, NOAC*) $\rightarrow$ stent

- Low volume mets
- Borderline surgical candidate

*Apixaban, Rivaroxaban, Dabigatran
Summary

• Assess each case on its merits
• Involve the patient and family in decision making
• A stoma is not the end of the world, but can impact on QoL, may requiring nursing home placement, and can often be avoided
• Colonic stenting is safe and effective
• In the absence of resecting the primary lesion, stent v stoma doesn’t alter survival