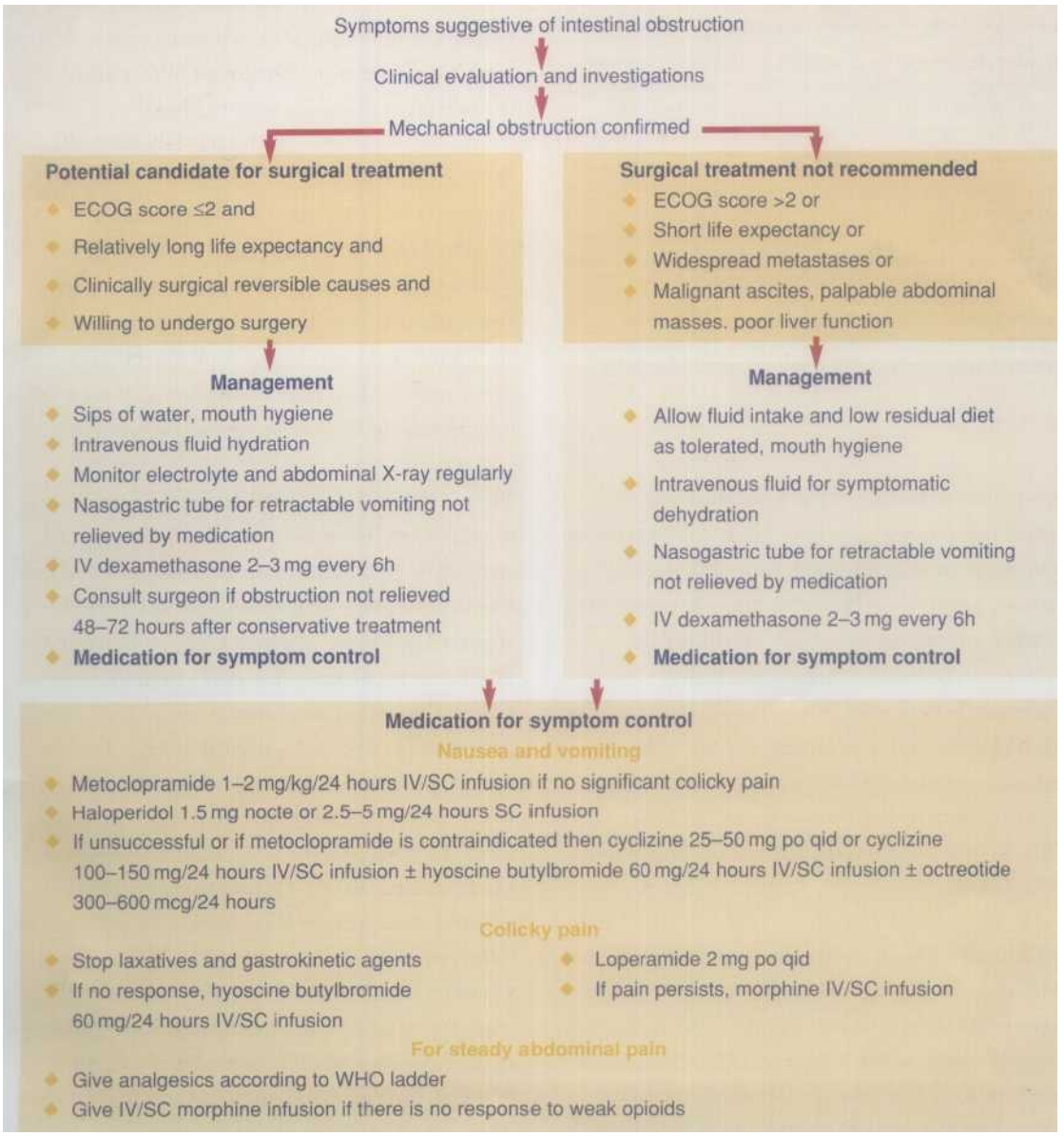
Management of gastrointestinal obstruction in advance cancer

he objective of this audit is to evaluate the management of intestinal obstruction in advanced cancer patients before and after the issue of clinical guidelines.

Intestinal obstruction is a common problem of patients with advanced abdominal or pelvic cancer.'·' Intravenous hydration with bowel decompression by nasogastric tube ('drip and suck') is a satisfactory method for relieving early obstructive symptoms. However, in persistent obstruction, this policy had low sustained response rate and is unpleasant for the patient.' Surgery should be considered in those who have easily reversible causes, such as postoperative adhesions or single discrete neoplastic obstruction, good general condition and no widespread secondary disease.' It is preferable to avoid surgery for patients with a short life expectancy, poor performance status, for example an Eastern Cooperative Oncology Group (ECOG) score of >2, malignant ascites, palpable abdominal masses, widespread distant metastases, significant liver failure, or more than one surgical procedure for obstruction in the past year.'

Figure 1 Summary of guidelines for management of intestinal obstruction in advanced cancer patients



The Bernard Moran Prize-winning audit, 1999

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Table 1 Acceptable `standard outcome' and `practice standards'

Outcomes

Abdominal pain: >80% have pain with numerical scale score <2 out of 5.

Nausea and vomiting: >80% have <1 vomiting episode per day.

Oral intake: >50% can resume at least fluid diet freely in some period of intestinal obstruction.

Processes[5,6,10,11]

Clinical assessment: General condition, severity of intestinal obstruction and symptoms should be assessed daily.

Selection for treatment strategy: Selected for non-surgical treatment only if ECOG score >2, or relatively short life expectancy (in term of days and months), or widespread metastases, or malignant ascites or palpable abdominal masses, or poor liver function, or have declined surgical intervention. Selected for potential surgical candidate if ECOG score <2, and relatively long life expectancy (in term of months), and clinical surgicalyl reversible causes and willing to undergo surgery.

Oral intake: For potential surgical candidate, 'nil by mouth' or 'sips of water' is required until surgical intervention has been declined, or intestinal obstruction has been resolved. For candidate of non-surgical treatment, a 'fluid diet' or 'soft diet' should be allowed.

Use of IV fluid: Intravenous fluid should only be used if oral intake <1.2 litres/day or negative fluid balance.

Use of nasogastric tube: Nasogastric tube should be used if refractory vomiting >10 episodes/day. It should not be used when vomiting <2 episodes/day and drainage <100 ml per day.

Use of syringe driver: Syringe driver should be used for parenteral administration of drugs instead of intravenous infusion if intravenous fluid hydration is not indicated.

Use of anti-emetic agents: Anti-emetic measures according to guidelines in Figure 1 were adopted. For persistent vomiting >1 episode/day, following medications should be tried: Metoclopramide 1.5 mg/kg/day IV/SC infusion for at least 2 days if no colicky abdominal pain, cyclizine 100 mg/day IV/SC infusion for at least 2 days and haloperidol 5 mg/day IV/SC infusion for at least 3 days.

Use of measures to control the colicky pain: Measures to control colicky abdominal pain according to guidelines (Figure 1) were adopted. For persistent colicky pain with score >1 out of 5, followings measures should have been tried: Laxatives and gastrokinetic agents should have been stopped, hyoscine butylbromide 60 mg/days IV/SC for at least 2 days and morphine >100mg/day IV/SC infusion.

Use of analgesics to control other abdominal pain: Measures to control other abdominal pain according to guidelines (Figure 1) were adopted. For persistent **pain (score >1 out of 5), morphine >100 mg/day IV/SC infusion should be given.**

In a palliative setting, it has been shown that non-surgical management of intestinal obstruction is effective in relieving symptoms, but doesn't increase survival.[1-4] However, there is variation of practice among oncologists in managing this problem in respect to surgical treatment, intravenous hydration, use of nasogastric tube and use of medication in symptom control. The heterogeneous nature of this group of patients makes generalisation of management plans difficult and there has been a lack of clinical trials of this issue.

In October 1998, our unit issued clinical guidelines (Figure 1) for managing intestinal obstruction in advanced cancer. An audit project was conducted to assess our practice before and after the issue of guidelines, so that practice standards could be compared and areas of improvement identified.

Setting standards

There was lack of well-established standards of management of gastrointestinal obstruction in advanced cancer. After discussion among senior members of our unit, we defined the acceptable standards of symptomatic control and management processes according to results of some series,[7-9] recommendation of textbooks-[1,5,6] and our local practice (Table 1).

Sampling and procedure of auditing

The clinical audit consisted of two phases. In phase I (before issue of the clinical guidelines), the discharge summaries of all patients admitted to Clinical Oncology Team B of Queen Elizabeth Hospital, Hong Kong from 1 April to 30 September 1998 were retrospectively reviewed. Those with intestinal obstruction were identified and their clinical records were reviewed. Phase II was a prospective study. From 1 October 1998 to 31 March 1999, the clinical records and the 'clinical management chart for intestinal obstruction' of the patients with intestinal obstruction were reviewed soon after discharge. Treatment outcome and management processes were audited.

In phase I from 567 admissions, 18 had an intestinal obstruction; in phase II, 12 out of 467 admissions had intestinal obstruction. The main symptom was vomiting and a low incidence of abdominal pain was found probably because most of the patients had been taking analgesics for other pain before developing intestinal obstruction.

Table 2 shows the outcome and compliance rate of management processes compared with practice standards. Symptom control and tolerance of fluid diet in both phases were comparable with the standard outcome. In phase I, one patient out of 12 who were clinically non-surgical candidates received treatment as a surgical candidate. Five patients who were non-surgical candidates were inappropriately put on a 'nil by mouth' or 'sips of water' policy. After initial hydration and other measures, two patients who could tolerate an oral intake of more than 1.2 litres per day without negative fluid balance were inappropriately put on intravenous fluid. Two out of 14 patients who had vomiting less than three times per day were inappropriately using a nasogastric tube. Only one of the two patients who could tolerate adequate oral diet, but required parenteral administration of drugs, used a syringe driver for drug

administration. The other patient used intravenous administration. Five out of 13 patients with vomiting and nausea under control did not use anti-emetic agents according to our guidelines. Three patients had persistent nausea and vomiting. None had received intravenous or subcutaneous cyclizine or haloperidol, although two had received an adequate dose of intravenous metoclopramide.

For phase II, one patient with vomiting not under control had not received parenteral cyclizine or haloperidol. The 'clinical management chart of gastrointestinal obstruction' was not properly used for monitoring in two patients.

In the period before issue of the guidelines, the management for intestinal obstruction among doctors on our unit was heterogeneous. For those who were potential candidates for surgical treatment, the initial treatment policy of 'drip and suck' with restriction of oral intake, intravenous fluid, use of nasogastric tube and early consultation of surgeon was adopted by all the doctors. However, in a palliative setting for non-surgical candidates, some doctors still adopted 'drip and suck' policy with restriction of oral intake as the initial treatment, while other allowed patients to take oral fluid. We used to offer intravenous fluid as initial treatment. These accounted for fair compliance rates of management processes in that period as compared with 'practice standards'. Although the effectiveness of such practice in symptom control was good, such a treatment policy was unpleasant for the patient, as the nasogastric tube can interfere with coughing. In chronic use, it may lead to cartilage erosion, otitis media, aspiration pneumonia, oesophagitis and bleeding. [2]

After the issue of the guidelines, a 'pharmacological approach' became the main management policy. For patients who were potential candidates for surgical treatment, the policy of restriction of fluid intake and intravenous fluid was still adopted as initial treatment measures to prepare the patient for possible surgical intervention. The surgeon would be consulted earlier in the process. For non-surgical candidates, oral intake was allowed with or without intravenous fluid for hydration. Symptom control was achieved by appropriate anti-emetic agents, anti-spasmodic drugs and analgesics rather than by nasogastric tube. Subcutaneous infusion by syringe driver was preferable for drug administration rather than intravenous infusion, unless intravenous fluid was clinically indicated. As compared with 'drip and suck' policy in phase I, the effectiveness of the 'pharmacological approach' was similar. In a palliative setting, such treatment policy was more pleasant for the patient. As well as avoiding complications and the unpleasantness of nasogastric tubes and intravenous fluid, it also allowed improvement in the patient's sense of autonomy.

Table 2 Outcome and compliance rates to `practice standards'

Parameters	Phase I	Phase II
Effectiveness		
Relief of intestinal obstruction	44.5%	58.3%
Control of nausea and vomiting	81.3%	81.8%
Control of colicky abdominal pain	100%	100%
Control of other abdominal pain	85.7%	80%
Tolerance of at least 'fluid diet'	72.2%	83.3%
Duration of hospitalisation for treatment of intestinal obstruction		
Mean, median (range)	10 days, 7 days (2-40 days)	15 days, 11.5 days (2-34 days)
Discharge: Non-surgical candidate		
Home	4(33.3%)	4(44.4%)
Transfer to surgical unit	2(16.7%)	1 (11.1 %)
Transfer to other hospice unit	3(25%)	1 (11.1 %)
Died	3(25%)	3(33.3%)
Discharge: Potential surgical candidate		
Home	2(33.3%)	2(66.7%)
Transfer to surgical unit	4(66.7%)	1 (33.3%)
Compliance rate to practice standards		
Selection of treatment strategy	94.4%	100%
Oral intake	72.2%	100%
Use of intravenous fluid	80.0%	100%
Use of nasogastric tube	88.9%	100%
Use of syringe driver	50%	100%
Use of anti-emetic agents	50%	90.9%
Use of measures to treat abdominal pain:		
Colicky	100%	100%
Non-colicky	100%	100%
Monitor of progress	92.5%	96.6%
Overall compliance rate	85.5%	97.7%

This audit project showed that our clinical management of gastrointestinal obstruction before and after the issue of our guidelines in October 1998 was effective in symptom control and comparable with standards. However, as compared with 'practice standards', the compliance rate for management processes before the issue of the guidelines was far below the 'standard' but could be improved after adopting the pharmacological approach as in our guidelines. Our current pharmacological approach can provide a high standard of clinical management of gastrointestinal obstruction in advanced cancer patients.

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