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Review Article

The Difficulty of Managing Recurrent Sigmoid Volvulus in a Frail Patient

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Abstract

Abdominal pain is a common cause for presentation of the older patient to healthcare services. Sigmoid volvulus is one of the leading causes of acute large bowel obstruction in adults. It affects older, comorbid, frailer and institutionalized patients. In this report, we highlight some of the clinical and ethical dilemmas clinicians face when caring for patients with recurrent sigmoid volvulus. We endorse early involvement of geriatricians and palliative care services in these individuals to ensure maximum patient comfort, quality of life and dignity.

Keywords: Decompression, Frailty; Palliation; Sigmoid volvulus

Background

Large bowel obstruction in the older patient accounts for nearly 25% of all cases of bowel obstruction [1]. Large bowel obstructions frequently transform into an acute surgical emergency. Common causes of large bowel obstruction include neoplasm, diverticulitis and volvulus [2]. Sigmoid volvulus accounts for 5% of acute obstruction cases and tends to occur more commonly in frailer and institutionalised patients, due to changes in sigmoid anatomy making it more vulnerable to forming a volvulus [3,4]. Management of this condition includes endoscopic decompression (1C GRADE system of recommendations), sigmoid resection, either urgent or elective (1C recommendation) and non-resection operative procedures such as sigmoidoplasty or endoscopic fixation (2C recommendation) [5].

Common management of sigmoid volvulus in the absence of colonic ischaemia involves endoscopic decompression with rigid or a flexible sigmoidoscopy. A decompression tube should in general be left in place also for a period of one to three days to maintain the reduction. Initial endoscopic resolution occurs in more than 80% of cases but 81% of cases represent with recurrence [6]. However, if left untreated, it can result in bowel perforation and sepsis. This is further complicated in older patients with co-existing neuropsychiatric conditions, particularly cognitive impairment, where issues regarding capacity and consent complicate clinical decision making. Cognitive impairment may also result in reduced ability to communicate wishes, which further adds to the clinical and ethical dilemma on how to best manage these patients [7]. However sigmoid volvulus is managed, the overall prognosis is extremely poor [8].

We present a case of an 87-year-old patient whom we recently managed which illustrates some of the challenges clinicians face when caring for older, frailer patients with recurrent episodes of sigmoid volvulus.

Case Presentation

History

An 87-year-old man was admitted to hospital with increasing abdominal distension. This was his third admission with a similar presentation in less than twelve months. He was known to suffer from severe dementia, heart failure with preserved ejection fraction, cerebrovascular disease, necrotic heel ulcers and interstitial lung disease. He lived alone, was confined to bed and required assistance for all activities of daily living. He was a non-smoker and did not drink alcohol.

Examination

On examination, he was alert but not orientated. His observations were: heart rate 72 beats per minute, blood pressure 157/86 mmHg, respiratory rate 26 breaths per minute, temperature 36.7˚C and oxygen saturation 96% on room air. He was clinically hypovolemic. Heart sounds were normal and chest examination was unremarkable. Abdominal examination revealed a rigid,

tympanic, grossly distended abdomen. There were no signs of peritonism.

Investigations

Abdominal radiographs showed dilated loops of bowel (Figure 1).

Figure 1: Initial Abdominal radiograph.

Figure 2: CT.

A CT scan of the abdomen identified faecal loading in the rectum with a sigmoid volvulus; a thick walled and redundant proximal sigmoid with a sharp kink and distension (Figure 2).

Procedure

He underwent a rigid sigmoidoscopy with a flatus tube insertion on the ward. There was minimal improvement and he eventually underwent a decompression with flexible sigmoidoscopy. This had some impact on reducing his abdominal distension(Figure 3).

Figure 3: Abdominal radiograph post flatus tube insertion.

Post procedure

This was the fifth time he had undergone an invasive procedure in the preceding few months to manage his volvulus. Each time he became extremely distressed by any medical intervention from acute delirium. His family highlighted that he did not like being in hospital, and asked to minimise re-admission. As a result, he was managed conservatively without further invasive procedures (e.g. flatus tube or endoscopic decompression). This multi-discplinary decision was made by the general surgical team, a geriatrician, members of the palliative care team and patient's next of kin. His recurrent presentations, extensive co-morbidities and severe frailty were suggestive that he was entering the last phase of his life and the consensus opinion was that recurrent invasive procedures in hospital could be detrimental to his quality of life without preventing recurrent volvulus. Definitive treatment with a colectomy was felt to be inappropriate given his extreme frailty as an elective or emergency procedure and the considerable in hospital mortality [9].

With the involvement of the next of kin an Advanced Care Plan (ACP) was drawn up for him which identified how to best manage his recurrent episodes in the community. The aim of the ACP was to maintain good quality of life in the community, admission avoidance and symptom control. It was advised to maintain good hydration as well as using laxatives to maintain regular motions. It also outlined that if he was in pain or nauseous to be given subcutaneous analgesics and antiemetics to reduce

symptom burden. His care plan also outlined that he was not a candidate for cardiopulmonary resuscitation and would receive palliative treatment at home.

Discussion

Volvulus occurs when a portion of the alimentary tract rotates on its mesentery, often resulting in bowel obstruction. The commonest site of a volvulus is the sigmoid colon [10]; this is largely related to the mesenteric anatomy and in the elongated shape of the sigmoid [11]. Sigmoid volvulus in the older patient often presents with severe abdominal distension, pain and colonic obstruction [12]. Common radiographic findings include a severely dilated sigmoid colon, intestinal air-fluid levels and commonly described diagnostic signs (e.g. "coffee bean", "horseshoe", "inverted V") which occur as a result of haustral loops of sigmoid colon [13,14]. In the frail older patient, sigmoid volvulus is best diagnosed on CT imaging [15].

The aim of management of sigmoid volvulus is to restore perfusion to the affected part of the colon. Uncomplicated sigmoid volvulus can be managed with flatus tube insertion and endoscopic decompression with flexible sigmoidoscopy [16,17]. The principle is that advancing through the twisted segment of colon may detort the volvulus and restore the vascular supply to the bowel in addition to facilitating luminal flow. However, volvulus recurrence is common; more than 70% following colonic decompression [18]. Definitive treatment is surgical resection of the sigmoid colon; this is however a major operation with very high morbidity and mortality rates especially if this is done as an emergency [19-21]. Surgical resection is associated with high morbidity and mortality. It may also result in a stoma, which can be difficult to manage in the community and may result in institutionalisation [22,23]. An alternative approach, as advocated recently by Imakita et al (2019), is colonoscopy-assisted percutaneous sigmoidopexy [24]. This was shown to be associated with no volvulus recurrence in the eight patients included in the study; however, further work is required to see how acceptable and beneficial this may be in the long term for older patients.

Therefore, how should we manage patients with recurrent sigmoid volvulus who are not candidates for definitive operations? Should we continue to decompress the bowel with an invasive procedure? One approach, as per our example, is to discuss the overall situation with the patient (if possible), the family and the multidisciplinary team. Recurrent admissions can be seen as an irreversible condition, identifying that a patient is nearing the end of their life [25]. Invasive procedures such as flatus tube insertion or flexible sigmoidoscopy are not without risks and possible complications. McCarthy et al (1993) identified that patients over 65 years were twice as likely to experience extreme pain from a sigmoidoscopy compared to younger patients [26]. The authors also highlighted a quarter of patients experienced embarrassment and nearly half discomfort. Aminoff et al (2005) identified that a large proportion of end stage dementia patients were experiencing severe suffering during the last part of their lives [27]. When patients lack capacity (without an advanced directive or power of attorney), the clinician will proceed in patient's best interest (often consulting their next of kin). This is challenging given the complexities of the type of patients we are describing above. We suggest that surgical teams work with geriatricians to facilitate decision making.

Conclusion

Sigmoid volvulus is a common and potentially life-threatening cause of large bowel obstruction in the older frail patient. Recurrence is common, particularly in patients that are managed non-operatively. We commonly admit extremely frail elderly patients who are not fit for colectomy and consequentially undergo repeated invasive management with flatus tube insertion and endoscopic decompression. These are associated with increased patient morbidity and pain. In such cohorts of patients, repeated and protracted hospital stays with invasive procedures may not be appropriate and we advocate a proactive multidisciplinary approach. Therefore, a potential option in these patients is to consider advanced care planning and early community palliative care involvement, both of which can be initiated and coordinated by geriatricians (ideally with surgical liaison expertise).

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