Perforation Of The Caecum Owing To Benign Rectal Obstruction: A Paradigm Of Damage Control In Emergency Colorectal Surgery

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Abstract

Purpose
To demonstrate the value of prompt resuscitation and surgical decision-making for damage control in a patient presenting in the Emergency Department with signs of acute abdomen and septic shock from large bowel perforation

Case history
A 71-year old patient presented in the ED with acute abdominal pain, hypotension, tachycardia and orthopnea. He reported no bowel movements in the last 5 days. From his previous medical history, a low anterior resection for early stage rectal cancer 10 years ago was documented. In follow up, he had developed a benign anastomotic stricture for which he did not seek medical attention for several years.

Management-Results
After proper stabilization, an emergency abdomen CT was requested. In this examination, excessive dilatation of the large bowel, pneumoperitoneum, pneumomediastinum, pneumopericardium and subcutaneous emphysema were documented. The patient was subjected to right colectomy, transferred to ICU for stabilization and on second look laparotomy was subjected to total abdominal colectomy.

KEYWORDS: damage control;emergency colorectal surgery;pneumomediastinum;pneumopericardium;rectal stricture
PERFORATION OF THE CAECUM OWING TO BENIGN RECTAL OBSTRUCTION: A PARADIGM OF DAMAGE CONTROL IN EMERGENCY COLORECTAL SURGERY

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Case presentation

A 71-year old patient presented in the ED with acute abdominal pain and distention, complaining of lack of bowel movements in the last 5 days. Symptoms had begun 12 hours before presenting to us, for which he had visited a GP and then a county hospital, where a nasogastric tube was inserted and then referred to our hospital. The patient was clearly frustrated, tachypneic (22 breaths/min) and hypotensive (70/40 mm Hg). From his previous medical history, he had been subjected to low anterior resection for early stage rectal cancer 10 years ago, with postoperative anastomotic leak which was treated with a diverting colostomy and subsequent closure of the colostomy after 3 months. In routine follow up, it was documented that he had developed a benign anastomotic stricture for which he had not sought medical attention for several years. No recurrence was reported. During digital rectal examination, it was confirmed that the rectum was almost completely obstructed concentrically. His medical history was also noted for coronary disease, arterial hypertension and diabetes mellitus.

The patient had signs of septic shock. Two large bore veins and a Foley catheter were inserted, and fluid resuscitation was initiated. The patient was given a dose of imipenem-cilastatin and metronidazole and an omeprazole bolus. Supplemental oxygen was instituted. He was then taken for a CT scan, where excessive dilatation of the large bowel, pneumoperitoneum, pneumomediastinum, pneumopericardium and subcutaneous emphysema were documented (Images 1-4). Due to hemodynamic
instability despite fluid administration and signs of oncoming respiratory compromise, the patient was then intubated in the ED and started on vasopressors. He was then admitted to the Surgical Ward, where additional fluids were given and was prepped for the OR.

Exploratory laparotomy revealed massive dilatation of the colon with ischemic right and transverse colon, gross spillage of an excessive amount of feces in the peritoneal cavity and the right retroperitoneal space and a perforation in the posterior plane of the caecum (Image 5). Due to patient instability, damage control surgery was decided. Extensive right colectomy with end ileostomy and mucous fistula of
the descending colon were performed. Continuous lavage of the right retroperitoneal space was instituted with two drains. The abdomen was left open with vacuum-fashioned dressings and the patient taken to the ICU (Image 6). During his stay in the ICU he was treated with extremely high doses of vasopressors. Antifungal treatment and stress steroids were also administered. After 48 hours of care in the ICU, relative response was noted and the patient was taken to the OR for a second-look laparotomy. Irreversible ischemic changes were also noted in the remaining colon, and a total abdominal colectomy was completed. After thorough irrigation, the abdomen was closed in a standard fashion and the patient returned to the ICU.

He remained there for an additional 32 days, where he was tracheotomized after sustaining a ventilator-associated pneumonia. He was then transferred to our ward, where he remained for 8 days and was dismissed in good performance status, requiring only twice daily wound dressings change. A month later he was admitted with purulent wound discharge and after abdominal imaging, a right retroperitoneal abscess was found and drained under CT guidance. He was dismissed 6 days later. 2 years later, he remains in good health.


**Conclusion**

The value of damage control surgery in critically ill patients cannot be overemphasized, and this case report is not an exception. Although damage control has mainly been instituted in trauma, its logic needs and has been incorporated in the surgical dictum globally. Additionally, in this case, we present, to our current knowledge, the first case of the aforementioned radiologic findings from colonic perforation owing to benign rectal stricture.