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# Acute Sigmoid Volvulus Treated with Subtotal Colectomy and Primary Anastomosis

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## Summary

Acute Sigmoid Volvulus usually presents as an emergency and requires urgent treatment. Near-total or total colectomy is not a common treatment strategy in this condition. This is a case report of a 54-year old woman who underwent total colectomy and ileorectal anastomosis for an acute sigmoid colon with associated occluding sigmoid tumor and ischemic megacolon.

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## Introduction

Sigmoid volvulus is a twisting of the sigmoid colon on its mesentery and common causes of large bowel obstruction (1). It is caused by a long mesentery, a narrow attachment to the posterior abdominal wall which makes the sigmoid prone to twisting on itself around the axis of the narrow mesentery. Other causes include adhesions from previous surgeries, sigmoid and other pelvic tumours.

Treatment could be by conservative endoscopic reduction (in cases without evidence of gangrene or peritonitis) or surgical intervention. Conservative management has a high tendency to recur, but in those with successful non-operative reduction, elective rather than emergency surgery, gives better result. Surgical options are many and could be by resection and primary anastomosis, Hartman's procedure or subtotal colectomy in cases of mega colon (1).

## Case report

A 46-year old business woman presented at the emergency room with a 4-day history of colicky abdominal pain, distension, vomiting and 5-day history of obstipation. Vomitus was non-projectile and contained recently eaten food. She had Caesarean section done 6 years earlier for pregnancy induced hypertension. Examination revealed an ill-looking woman, in respiratory distress, mildly pale, dehydrated but afebrile, (37.0°C). Pulse rate was 114/min, blood pressure 90/60mmHg and respiratory rate was 36cycles/minute.

The abdomen was massively distended, did not move

with respiration, tender with an obvious Pfannestiel scar. Bowel sounds were present. Plain abdominal x-rays showed dilated large bowel loops, inverted U sign, and paucity of gas in the rectum.

Preoperative laboratory results showed Na<sup>+</sup> 150mmol/l, K<sup>+</sup> 5.1mmol/l, HCO<sub>3</sub><sup>-</sup> 25mmol/l, urea 63mmol/l and Creatinine 2.3umol/l, PCV 30%, WBC count 20x10<sup>9</sup>/l (neutrophils 82%, eosinophils 2%, lymphocytes 16%). She was started on intravenous fluid infusions, nasogastric tube to decompress the abdomen, catheterized to monitor fluid resuscitation and planned for emergency laparotomy.

Findings included ischemic megacolon involving most of the large bowel from the caecum to splenic flexure and 180° anticlockwise twist of the sigmoid colon with a solid occluding tumour in its middle third.

The whole of the large bowel was resected down to the rectosigmoid junction and primary ileorectal anastomosis performed. She received 2 units of blood intra-operatively, the abdominal cavity was lavaged with copious amount of warm saline.

She made a remarkable recovery, passed flatus on the 2nd post-operative day and stool on the 3rd day. Histopathology of the sigmoid tumour revealed well differentiated (Grade 1) adenocarcinoma, C2 (Astler Coller), T2N2M0. She was given first dose XELOX regime on the 18th day after transfusion and wound properly healed. She was discharged on the 20th day to the surgical outpatient department.

## Discussion

Sigmoid volvulus is the third most common cause of large bowel obstruction (1, 2) and the commonest cause of strangulation of the colon. In a semi-urban hospital in Nigeria, it accounts for 14% (3). It is said to have a slight male preponderance possibly due to longer male sigmoid mesocolon. The female mesocolon is wider than long.

This patient presented with megacolon involving most part of the large bowel with thinned-out wall. This sometimes occurs as a cause rather than a consequence of sigmoid volvulus (1). Such patients usually have a long history of on and off abdominal pain. A competent ileocaecal valve (ICV) ensured that a double closed-loop obstruction occurred with massive colonic distension with thinned-out wall. The near-total colectomy was warranted. The ileal end could have been brought out as an ileostomy with closure of the rectal stump as an alternative procedure but this is difficult to manage post-operatively and will require closure at a later date.

This case is reported because Hartman's procedure is the usual and automatic treatment at our centre. Primary anastomosis is uncommon and no case of total or near-total colectomy has been performed here or indeed reported in the literature in our environment.

There is no consensus on the best approach to management. Non-operative reduction is performed in some cases especially where there is no evidence of gangrene and peritonitis. This includes endoscopic deflation by proctosigmoidoscopy or colonoscopy and enema detorsion. This is then followed by elective resection. Recurrence rate however is high, between 60% and 90% (2,4), mortality 35% (5) and the possibility of patients not coming back for, or refusing elective surgical intervention after successful reduction (1) only to present at a later date with gangrenous bowel. Newer techniques include percutaneous

endoscopic colostomy used in the elderly and those not fit for surgery (2).

Emergency resection and anastomosis usually with or without a protecting stoma is an option. Resection and anastomosis after antegrade on-table colonic lavage used to be a well-accepted procedure but associated with prolonged anaesthesia time, possibility of faecal spillage and chances of the occurrence of electrolyte imbalance (1, 2). Emergency one-stage resection and anastomosis without on-table lavage has been found to be safe and feasible (1). In cases where the patient is not fit, a Hartman's procedure is advised. Patients with a megacolon require a near-total colectomy (1). Revolvulus after resection has been reported with an incidence of 24-33% (1, 6)

In conclusion, surgical management remains the mainstay of treating this condition and with associated megacolon, total colectomy should be considered.

## References

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