

## TRANSVERSE COLON VOLVULUS: CASE REPORT AND REVIEW OF LITERATURE

Nidal Younes<sup>1</sup>, Mahmoud I Al-Ardah<sup>2</sup>

### ABSTRACT

Transverse colon volvulus is an uncommon cause of large bowel obstruction. Clinical presentation is not specific and therefore, diagnosis is usually made by radiological investigation. Plain abdominal radiograph resembles sigmoid volvulus, but gastrograsphin enema in non emergency cases will reveal a more proximal obstruction. Therapy consists of urgent surgery, usually with resection of the twisted transverse colon. We present a case with an overview of the literature.

**KEY WORDS:** Volvulus; Transverse colon; Plain abdominal radiograph; Hemicolectomy.

Pak J Med Sci July - September 2010 Vol. 26 No. 3 716-719

### How to cite this article:

Younes N, Al-Ardah MI. Transverse colon volvulus: Case report and review of literature. Pak J Med Sci 2010;26(3): 716-719

### INTRODUCTION

Transverse colon volvulus is extremely rare, first described by Von Rokitansky in 1836<sup>1</sup>, It results from twisting of the colon around its axis, which usually requires a large, mobile segment of the colon with a small mesenteric fixation typically seen in the sigmoid colon and to a lesser extent in the cecum. However, patients with chronic constipation megacolon may become at risk for to transverse colon volvulus.

When volvulus exists, obstruction leads to distension, ischemia, gangrene and perforation

which requires an immediate recognition and rapid management. Although colonoscopic detortion is occasionally successful, most patient require emergency exploration and resection. We present a case of transverse colon volvulus in a 27 years old male.

### CASE REPORT

A 27 years old, male was admitted to our hospital complaining of severe colicky abdominal pain of six hours duration associated with obstipation and abdominal distention, but there was no history of vomiting or fever. The pain progressed over one hour time to become continuous and intolerable. His medical history revealed recurrent episodes of chronic colicky abdominal pain, distension and constipation in the preceding three years. At physical examination there were sluggish bowel sounds. There was marked abdominal distension with generalized guarding and board-like rigidity. Chest X-ray showed elevated left hemi diaphragm with no free air under diaphragm (Fig-I). On the plain abdominal radiograph, a severely dilated colonic segment (closed loop obstruction) with multiple air fluid levels was seen.

1. Nidal Younes, MD,
  2. Mahmoud I Al-Ardah, MD,
- 1-2: Depat. of General Surgery, Faculty of Medicine, University of Jordan (Amman- Jordan)

#### Correspondence

Dr. Nidal Younes,  
Department of Surgery,  
Faculty of Medicine,  
University of Jordan,  
P.O Box 13024,  
Amman, Jordan 11942.  
E-mail: mahm2000@hotmail.com

- \* Received for Publication: December 9, 2009
- \* Revision Received: March 20, 2010
- \* Revision Accepted: April 11, 2010

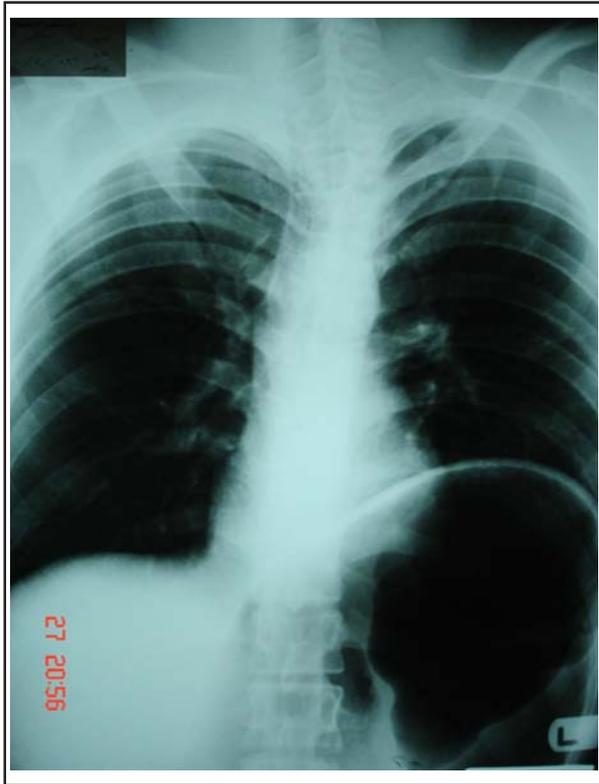


Fig-1: Chest X-ray showed elevated left hemi diaphragm

(Fig-II). Intravenous fluids were given to the patient in addition to broad spectrum antibiotics.

Urgent laparotomy was performed two hours after admission. We found a strangulated and severely distended transverse colon segment



Fig-3: Intraoperative photo for a strangulated and severely distended transverse colon segment.

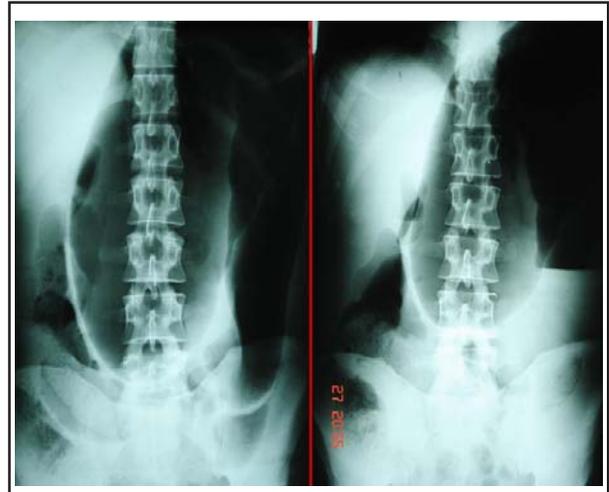


Fig-2: Supine and Erect abdominal X-ray shows severely dilated colonic segment, with multiple air fluid levels

which had twisted counter clockwise around its mesenteric axis (Fig-III, IV). Furthermore, there were several patches of deeply cyanosed areas on the transverse colon (Fig-V). Detorsion of the volvulus segment was performed but the color did not improve. Transverse colon resection with primary colo-colic end to end seromuscular single layer anastomosis was performed. Recovery was uneventful. The patient was discharged in a good condition four days after admission.

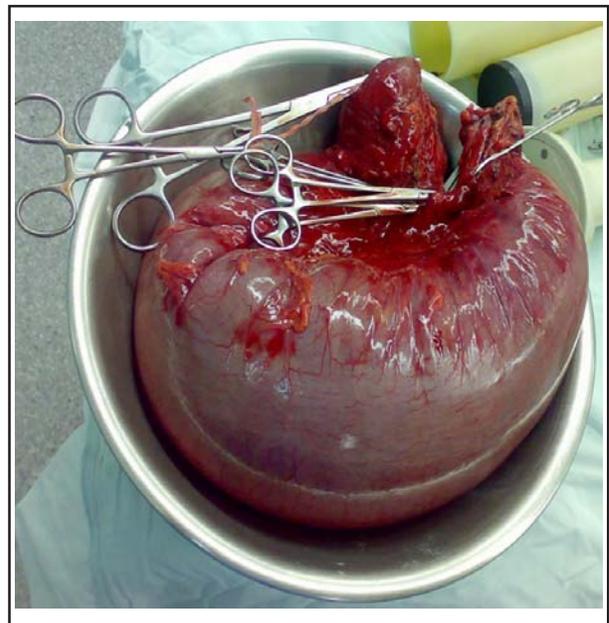


Fig-4: Resected Transverse colon

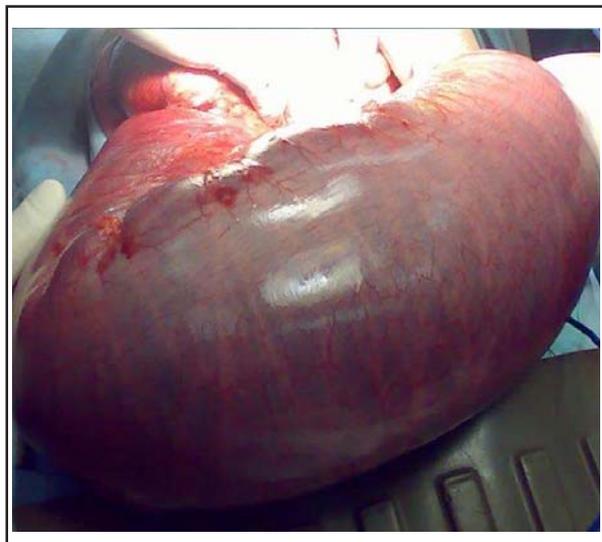


Fig-5: Intraoperative Photo shows several patches of deeply cyanosed areas on the transverse colon.

The patient was followed up for two years with no immediate or late complication, and there was no evidence of recurrence.

## DISCUSSION

Transverse colon volvulus was described for the first time by Rokitsky in 1836<sup>1</sup> and represents 1.9%-11% of all colonic volvulus, and 1-5% of all cases of large bowel obstruction.<sup>2</sup> Volvulus of the transverse colon most often occurs in the second and third decades of life with an additional peak in the seventh decade and women outnumber men 2:1. The mortality rate of transverse colon volvulus is 33%, whereas sigmoid volvulus carries a mortality rate of 21% and cecal volvulus a rate of 10%.<sup>3</sup> In early reports (Kallio 1932, Bruusgaard 1947) suggest that transverse colon volvulus may account for up to 30% of all colonic volvuli in Eastern and Scandinavian countries).<sup>4</sup>

Transverse colon volvulus results from abnormal mobility of the colon that lead to twisting of the colon around its axis. Predisposing factors are multifactorial and include chronic constipation and megacolon. Chronic constipation leads to elongation and redundancy of the colon, permitting volvulus even in the presence of a normal mesentery. Errors in congenital

rotation of the midgut, result in abnormal fixation of the mesentery, may also play a significant role in permitting volvulus to occur.<sup>7</sup>

Familial cases of transverse colon volvulus have been reported in the literature<sup>5</sup> and associations with Chilaiditi's syndrome and Hirschsprung's disease have also been described.<sup>6</sup>

Two separate clinical presentations have been described in the literature: acute fulminating and subacute progressive.<sup>11</sup>

The diagnosis of this uncommon condition depends upon radiological investigations. Typical findings on plain films include massive dilatation of the colon and loops having the appearance of a 'bent inner tube'. Sometimes there may be a redundancy or malposition apparent on the films, the "double air fluid levels" due to a closed loop obstruction may be present.<sup>4</sup> The classic "birds beak" deformity in the area of the transverse colon seen on contrast enema is diagnostic. On CT-scan, marked dilatation of the proximal colon, ileal distention and collapse of the distal portion of the transverse and descending colon suggests transverse colon volvulus.<sup>1</sup>

Treatment of transverse colon volvulus requires urgent laparotomy in most cases in order to resect compromised bowel before gangrene and perforation occurs.<sup>8</sup> Surgical options include: detorsion alone, detorsion with colopexy, resection with primary anastomosis, or resection with colostomy or ileostomy and mucous fistula. Both detorsion and detorsion with colopexy have a higher rate of recurrence than resection.

The presence of ischemia or necrosis of the bowel are indications for resection of the bowel. Transverse colon resection with primary anastomosis is the treatment of choice for transverse colon volvulus to prevent recurrence.<sup>9</sup> Colostomy or ileostomy and distal mucus fistula remain an option in patients with significant bowel necrosis, to avoid risk of anastomotic leakage.<sup>10</sup>

In conclusion, transverse colon volvulus is a rare cause of colonic obstruction. The etiology

is multifactorial and patients usually present with acute abdomen. Diagnosis should be made quickly by physical examination and radiological investigations. Treatment consists of urgent surgery.

### REFERENCES

1. Pinto A, Pinto F, Scaglione M. Emergency Radiology, Transverse colon volvulus: Appearance on computed tomography 2001;8:227-229.
2. Rangiah D, Schwartz P. Familial transverse colon volvulus. ANZ J Surg 2001;71(5):327-9.
3. Loke KL, Chan CS. Case Report: Transverse colon volvulus: Unusual appearance on barium enema and review of the literature. Clin Radiol 1995;50:342-344.
4. Mortensen NJ, Hoffman G. Volvulus of the transverse colon. Postgrad Med J 1979;55(639):54-7.
5. Pustorino S, Polimeni F, Migliorato D. Chronic idiopathic intestinal pseudo-obstruction associated with volvulus of the transverse colon. The identical mode of clinical presentation and of the intestinal manometric pattern in monozygotic twins. Minerva Gastroenterol. Dietol 1994;40:37-46
6. Florde J, Rarker E. Transverse colon volvulus and associated Chilaiditi's syndrome: Case report and literature review. Am J Gastroenterol 1996;91(12):2613-6.
7. Yaseen ZH, Watson RE, Dean HA, Wilson ME: Case report: Transverse colon volvulus in a patient with Clostridium difficile pseudomembranous colitis. Am J Med Sci 1994;308:247-250.
8. Ciraldo A, Thomas D, Schmidt S. Case report: transverse colon volvulus associated with Chilaiditis Syndrome. *Internet J Gastroenterol* 2000;1:1.
9. Ciraldo A, Thomas D, Schmidt S. A Case Report: Transverse Colon Volvulus Associated With Chilaiditis Syndrome. *The Internet J Radiology* 2000;1:1.
10. Anderson JR, Lee D, Taylor TV, Ross AH: Volvulus of the transverse colon. *Br J Surg* 1981;68:179-181.
11. Houshian S, Sorensen JS, Jensen KEJ. Volvulus of the transverse colon in children. *J Pediatr Surg* 1998;33:1399-140.