



Could Angulated Sigmoid Leads to Colorectal Pathology?

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ABSTRACT

The placement of the sigmoid colon within the abdomen is determined by its attachment to the posterior abdominal wall by the sigmoid-mesocolon. Although, it is considered to take the shape of an inverted 'V' other shapes such as inverted U and straight have been reported. There are anatomical variations in the level of origin of the sigmoid colon from the descending colon as well as in the attachment of its mesocolon which considered being population based(2). Abnormally high attachment of mesosigmoid may reduce the colonic transit time leading to greater prevalence in colorectal disease(3). We report two cases presented with features of intestinal obstruction and another patient underwent anterior resection for rectal carcinoma who found to have abnormally high mesenteric attachment intra-operatively. Two out of three patients had colorectal carcinomas.

KEYWORDS

Introduction

Sigmoid colon is the continuation of descending colon which can be of varied lengths. It is placed in the Left iliac fossa of the abdomen by its attachment to the posterior abdominal wall via the mesocolon. Shape of the mesosigmoid can differ among different populations, where inverted 'V' being the commonest(2). Madiba *et al.* has shown anatomical variations in the level of origin of sigmoid colon and the shape of the attachment of the sigmoid mesocolon in 590 autopsy studies(1). The low-level origin has been significantly less common among Africans compared with the other population groups and the high-level origin has been significantly more common in Africans. A midlevel origin has been similar in all three groups. The shape of the mesocolon attachment had been either straight, inverted U-shaped, or inverted 'V'-shaped. The straight shape was more common in Whites, and the U-shape more common in Africans. The distribution of the 'V'-shape was similar. There are anatomical variations in the level of origin of the sigmoid colon from the descending colon as well as in the shape of the attachment of its mesocolon. These variations are population based (2). Data on abnormally higher location of the apex of the mesosigmoid and its clinical implications are not properly documented. Acute angle created by tall inverted 'V' may slowdown the colonic transit time.

Lack of fibre in the diet regulates the speed of transit through the colon, bulk and the consistency of the stools(5). Together with other dietary factors, is responsible for change in the bacterial flora which produces carcinogens(6). Prolonged exposure of colonic mucosa to these toxic materials is responsible for higher incidence of colorectal malignancies in the western world who consume low residue diet.

Case Presentation

We report three patients with colonic pathology who found to have abnormally high attachment of sigmoid mesentery noticed during surgery. All the patients were females with age ranging from 58 to 83 years. Two patients presented with absolute constipation, abdominal pain and vomiting. Average duration of symptoms was 3-5 days. The clinical diagnosis of intestinal obstruction was made and resuscitation was started. Stomach was decompressed with a nasogastric tube. Fluid loss was calculated and replaced with normal saline. None of the patients had hypokalaemia or electrolyte imbalance.

Supine X-ray abdomen showed dilated bowel loops confirming the diagnosis. There was no evidence of peritonitis suggestive of perforation. Since the patients did not show signs of improvement

explorative laparotomy was performed.

The third patient who was investigated for per-rectal bleeding diagnosed with rectal carcinoma underwent an elective surgery (anterior resection).

Intraoperative diagnosis of two patients was malignancy located in the mid rectum and sigmoid colon. Eighty three year old third lady had pseudo-obstruction with dilated faecal loaded colon.

All three patients had inverted 'V' shape mesenteric attachment of the sigmoid colon. Apex of the mesentery was abnormally high at the level of the duodeno-jejunal flexure. Sigmoid colon was placed in the Left lower quadrant forming an acute angle. In one patient tumour was located at the sigmoid invading the duodeno-jejunal flexure necessitating resection of the involved small bowel segment with end to end anastomosis.

Discussion

Abnormally high attachment of sigmoid mesentery results in acute angulation of the pipe of the sigmoid colon. This might result in slowing of the colonic transit time allowing harmful bacterial flora to act on stagnated faeces. This could have promoted development of malignancy in the colon with the other causative agents as seen in two of our patients.

So, we recommend studying further on effect of abnormal sigmoid mesenteric attachment on colonic transit time and it's physiological and clinical implications.

References

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