

## Abnormal Position and Length of the Sigmoid Colon

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### Abstract

One of the most variable parts of the large intestine is sigmoid colon. Here we report a very rare type of variation of the sigmoid colon. This variation was observed during the barium Enema radiography in Radiology department of Golestan hospital, Ahvaz, Iran. In the current case, the sigmoid colon made an inverted U shaped loop with an ascending and a descending limb before entering to pelvic. This abnormal appearance of sigmoid colon and its mesocolon led to signs of abdominal pain and constipation for patient. This congenital anomaly may twisted during the life of the patient and create volvulus. It also can provide difficult situation for Radiologist and surgeons. Therefore the knowledge of this anomaly is important for radiologist and surgeons.

**Keywords:** Sigmoid colon; Radiology; Abnormal position; Case report

### Introduction

Sigmoid colon is a part of the large intestine and extends from the pelvis brim to the third piece of the sacrum. It is part of the hindgut and hindgut is the terminal part of the gastrointestinal tract including the left one third of transverse colon, the descending and sigmoid colons, and the superior rectum supplied by the inferior mesenteric artery. Sigmoid colon is suspended by a sigmoid mesocolon that is an inverted V shaped fold of peritoneum. Left limb of mesocolon attached along the upper half of the left external iliac artery and the right limb is attached to the posterior pelvic wall [1,2]. Abnormal disposition and length of colon are developmental in origin [3]. Congenital anomalies of the fixation and rotation of the gut exceedingly rare in adults but are common in children [4]. Anatomy textbook describe the sigmoid colon as viscera having a constant morphology with variations in its length [5]. Atypical locations may lead to a variety of acute and chronic pathological conditions. Classification of congenital sigmoid colon anomalies have previously described by Netter [6] (Figure1).

Type A: normal type; the part between the end of descending colon and the beginning of rectum folded downwards on the left.

Type B: short type; the part between the end of descending colon and the beginning of rectum extended obliquely downwards.

Type C: the type deviated to right; the part between the end of descending colon and the beginning of rectum turned towards right.

Type D: superior type; the part between the end of descending colon and the beginning of rectum was curled to upward.

### Case Presentation

An adult male patient aged approximately 55 years with the signs of abdominal pain and constipation was admitted to the Radiology department of Golestan Hospital, Ahvaz, Iran.

During the barium enema radiography a congenital anomaly of the sigmoid colon was observed. The patient had no family history of congenital anomaly in large intestine. Our findings confirmed a redundant loop and abnormal length of the sigmoid colon. Following the descending colon, an extra-large loop was observed to progress from the descending colon at the left iliac fossa and ascended upwards, apex of this sigmoid loop placed under transverse colon. Sigmoid colon formed inverted U shaped loop before descend to pelvic (Figure 2 and 3). This case is similar to figure 1

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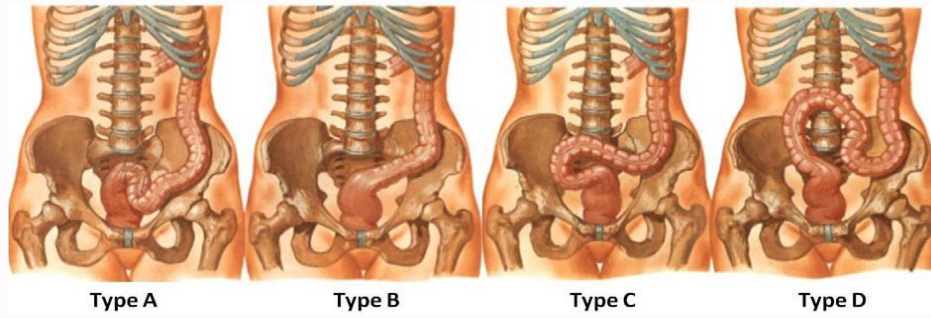
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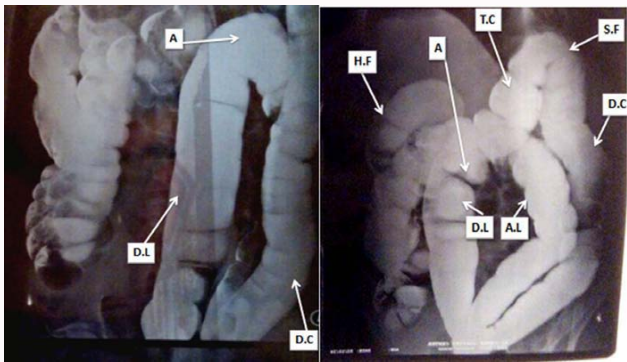
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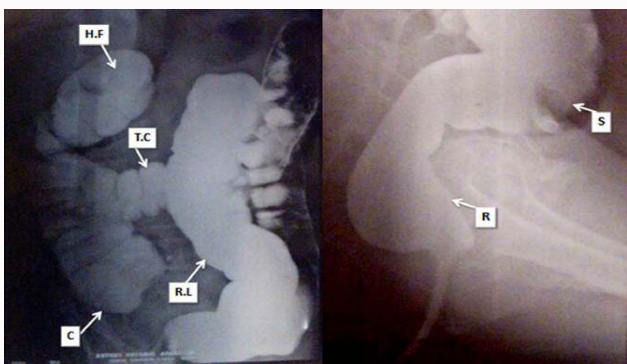
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**Figure 1:** The types of sigmoid colon part. Type A; normal type sigmoid colon, Type B; short type sigmoid colon, Type C; the type sigmoid colon deviated to right, Type D; superior type sigmoid colon.



**Figure 2:** Barium enema films. A Shows a redundant sigmoid colon. DC: Descending Colon; TC: Transverse Colon; SF: Splenic Flexure; HF: Hepatic Flexure; AL: Ascending Limb of redundant loop; DL: Descending Limb of redundant loop; A: Apex of loop.



**Figure 3:** Barium enema radiography shows. RL: Redundant Loop; TC: Transverse Colon; HF: Hepatic Flexure; S: Sigmoid; C: Cecum; R: Rectum.

type D.

**Discussion**

The sigmoid colon is the part of the large intestine with the most variation in terms of length and position. One of the common variations of the sigmoid colon is presence of its redundant loop and abnormal length [7]. The redundant loop can cause various problems such as constipation, discomfort over the colon, indigestion, loss of weight, insomnia, pain and tenderness in the right iliac fossa [7,8]. The symptoms of redundant colon may mimic symptoms of gastric

ulcer, heart disease, chronic obstruction of bowel in addition to Appendicitis [7]. Redundant loop of sigmoid colon is prone to form a volvulus which can be diagnosed through a CT scan of the abdomen [8,9]. Chandrika GT et al., have reported a case of right sided sigmoid colon recently [10]. Variations in the position and length of the descending and sigmoid colons may produce difficulties in radiological diagnosis and instrumentation into them. They may also form volvulus or result in some other functional disturbances in the neighbouring structures. The right sigmoid colon has been reported radiographically with barium enema, by Fiorella and Donnelly [11] and Saxena et al [12].

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