

Primary signet ring cell carcinoma of descending colon presented as intussusceptions: A case report

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Abstract: In adults, there is low incidence of intussusceptions particularly in descending colon due to its anatomical attachment to the retroperitoneum. The incidence of signet ring cell carcinoma is < 1% of all colon adenocarcinomas. It is usually present in young adults and has a poor clinical outcome. We present a case report of descending colo-colonic intussusceptions caused by signet ring cell carcinoma in a 53 year old male patient.

Keywords: adult, intussusceptions, descending colon, signet ring cell carcinoma.

INTRODUCTION

Intussusceptions are the invagination of a segment of the bowel into the distal adjacent bowel [1]. It is most commonly seen in infants and children and approximately 5% of affected patients are adults [2]. The occurrence of intussusceptions in the descending colon in adults is rare and it mainly originates from a malignant neoplasm [3]. It poses a significant challenge as intussusceptions can present itself with variety of symptoms, diagnostic difficulty on radiological examination and the management of the condition.

The primary signet ring cell carcinoma of the colon and particularly descending colon is a very rare histological subtype. It represents approximately 0.5-1% of all adenocarcinomas [4]. This neoplasm carries a poor prognosis as it is detected at an advanced stage due to delay in clinical presentation by the patients. It has a characteristic histomorphological feature of abundant intracytoplasmic mucin which pushes the nucleus to periphery giving it a signet ring cell appearance [5].

In this study, we present a case report of adult male diagnosed with intussusceptions of the descending colon preoperatively by a Contrast Enhanced Computed Tomography (CECT) scan. The etiology of intussusceptions was signet ring cell carcinoma which was diagnosed post operatively on histology.

CASE REPORT

A 55 year old man came to the hospital with complaints of pain in abdomen, constipation and mucus in stools since 2 months. The gradual increase in severity of pain had brought the patient to the hospital.

The patient had a history of drinking alcohol for 4-5 years but had abstained for the past 10 years. He had no significant past or family history. On local examination, there was tenderness in left iliac fossa and a lump measuring approximately 3x3 cm could be palpated. Rest of the systemic examination and routine laboratory investigations were normal. Following this, the patient underwent for a CECT scan of abdomen. A sessile polypoidal lesion was noted in the descending colon along with a small transient colo-colonic intussusception with the growth at its leading point, suggesting a neoplastic growth (Fig-1). No adjacent wall thickening or free fluid in peritoneal cavity and lymph node were noted. Liver did not show any focal lesion.

For further management, the patient underwent colonoscopy. The scope could be negotiated up till descending colon where a polypoid fungating growth could be seen 55 cm from the anal verge (Figure 2). Multiple colonoscopic biopsies were sent for histopathological examination which showed no evidence of atypia or malignancy.

The patient was further evaluated for serum CEA levels and CA19-9 levels. CEA levels were found to be elevated that is 4.6ng/ml (reference range - <3.8 ng/ml). CA19-9 levels were found to be normal.

As per the findings of colonoscopy and serum markers, the patient was posted for segmental colectomy and specimen was sent for histopathological examination. We received a specimen of left colon comprising of descending colon measuring 13 cm in

length along with mesentery measuring 13x5x2.5 cm. Serosa was unremarkable. On cutting open, mucosa showed a sessile polypoidal growth measuring 4.2x3.6x3.5 cm. On the external surface of the growth focal ulceration was seen. The cut surface of the growth was grayish white in color and firm to mucinous in consistency (Fig-3). The mesentery was unremarkable. Single lymph node was dissected from the mesentery at the level of tumor which appeared unremarkable. Microscopy of the tumour showed diffuse infiltration of lamina propria and muscularis with tumor cells having signet ring cell morphology. Few of the signet ring cells show intracellular mucin deposition. Mucosa and serosa were unremarkable (Fig- 4a,b,c). The lymph node showed no involvement by tumour cells. This case was reported as Primary Signet cell carcinoma of descending colon. The TNM staging was done as T2N0Mx (Stage I) and graded as Grade 3.



Fig-2: Colonoscopy shows a polypoidal fungating growth in the descending colon.

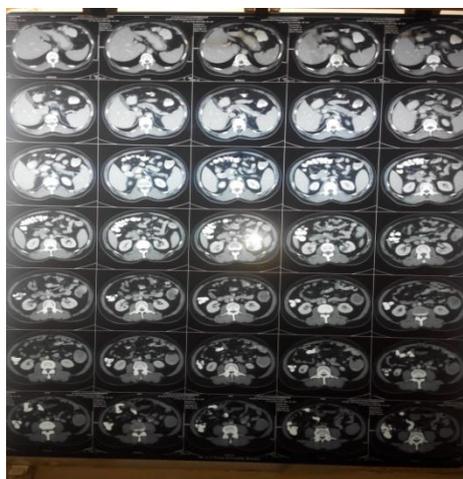


Fig-1: Contrast Enhanced CT scan of abdomen shows a sessile polypoidal lesion in the descending colon along with small transient colo-colonic intussusceptions



Fig-3: Mucosa of descending colon showed a sessile polypoidal growth, grayish white in color and firm to mucinous in consistency.

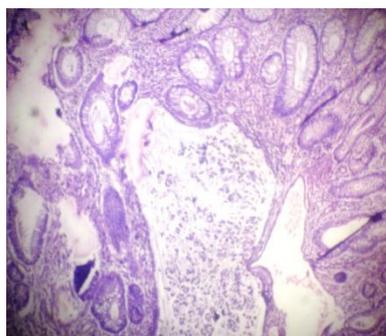


Fig-4a

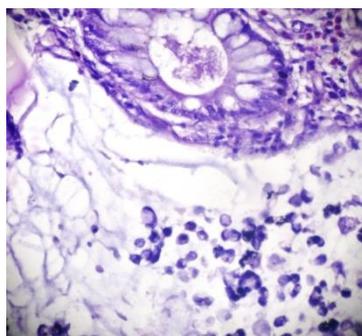


Fig-4b

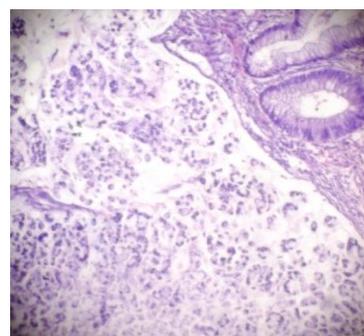


Fig-4c

Fig-4a, b, c- Microscopy of the tumour showed diffuse infiltration of lamina propria and muscularis with tumor cells having signet ring cell morphology. Few of the signet ring cells show intracellular mucin deposition

DISCUSSION

The telescoping of proximal intestinal wall into the lumen of distal intestinal segment is known as Intussusceptions [1, 6]. Though common in young patients, intussusceptions are rare in adults. The most

common location of colo-colonic intussusceptions is sigmoid colon or caecum [7]. It is more uncommon in the descending colon due to its attachment to the retroperitoneum [8]. It is mainly precipitated by a malignant neoplasm. In our case, patient was adult male

detected with intussusceptions caused due to signet ring cell carcinoma of descending colon.

Primary signet ring cell carcinoma of the colon and rectum was described by Laufman and Saphirin 1951 [9]. It accounts for less than 1% of all reported adenocarcinomas of colon. According to literature, there are only 27 cases of primary signet ring cell carcinoma of the colon being reported, of which only 7 cases were in the left side of the colon [9]. Our patient had tumour in the descending colon. The features of signet ring cell carcinoma are associated with younger age at presentation, higher tumor grade, peritoneal and lymphatic spread. It has a poorer clinical outcome as it is detected at a more advanced stage because of delay in diagnosis due to rarity of the tumour, relative sparing of mucosa accompanied by heme-negative stools and radiological features resembling intussusceptions or inflammatory process [9]. Adult intussusceptions is often accompanied with organic disease. The reduction of intussusceptions in suspected cases of malignancy may lead to bowel perforation and dissemination of tumor cells. Therefore, no attempt should be made to reduce colonic intussusceptions in adults by a barium enema. The primary treatment in such cases for intussusceptions is surgery [10]. In our case, patient underwent chemotherapy following surgery and is doing well.

CONCLUSION

Primary signet ring cell carcinomas of colon have unique clinical and histomorphological features. It has more aggressive biologic behavior than other adenocarcinomas of colon. In the present case report, a rare case of descending colo-colonic intussusceptions caused by a primary signet ring cell carcinoma of the descending colon is described. Because of its rarity, mandatory reporting of these variants in surgical pathologic specimens and preoperative biopsies should be made. This will help to achieve novel clinical trials development and explore treatment strategies to improve their clinical outcome.

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