Double ileo-ceco-colic invagination due to right colon carcinoma: clinical presentation and management

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**Abstract.** – Intestinal intussusceptions represent a rare cause of intestinal obstruction in adults (about 1% of intestinal obstructions). The principle causes are benign or malignant tumors. In adults, the most frequent localizations of intestinal invaginations are the ileo-cecal segment, ileum and colon as exclusive localization. We report the case of a 56 year-old Caucasian male admitted in our Department complaining with diffuse abdominal pain and severe anemia. The colonoscopy revealed a vegetant, stenosing and ulcerated mass in the hepatic flexure. The computed tomography suggested the additional diagnosis of intestinal intussusception with no evidence of intestinal obstruction. In our experience, surgery is always indicated for the treatment of intussusceptions in adults, especially for the almost constant underlying neoplasm.

**Key Words:** Intussusception, Invagination, Colon adenocarcinoma.

**Introduction**

Intestinal intussusceptions represent a rare cause of intestinal obstruction in adults compared to a relatively high frequency in childhood. Their prevalence counts for about 1% of intestinal obstructions and 5 to 16% of all invaginations. In about 90% of cases an organic cause for the intussusceptions can be identified mostly represented by benign or malignant tumors. Among benign tumors, leymymomas, adenomas, lipomas, Brunner cells amartomas, hemangiomas, adenomyomas, neurofibromas and desmoids tumors must be considered, while the malignant cancers can be lymphomas, rare cases of ileal adenocarcinomas, colic adenocarcinomas (usually responsible for colo-colic invaginations) and the extremely rare metastatic malignant neoplasms with intestinal localization, such as melanomas. Finally, an inverted Meckel’s diverticulum has been also reported as a potential cause of intestinal intussusception.

In adults, the most frequent localizations of intestinal invaginations are the ileo-cecal segment, ileum and colon as exclusive localization.

We report the case of a 56 year-old Caucasian male admitted in our Department with abdominal pain and anemia.

**Case Report**

A 56 year-old Caucasian male was admitted in our Department complaining with diffuse abdominal pain of recent onset, no nausea, vomiting or fever. No history of previous surgery was reported. The recent clinical history of the patient was characterized by an increasing asthenia in daily-life activities and rectal bleeding. The clinical examination and rectal examination did not reveal any peculiar elements. Blood tests showed severe anemia (Hb: 7.4 g/dL). We then proceeded with endoscopic procedures, both gastroscopy and colonoscopy, to identify the source of bleeding and a vegetant, stenosing and ulcerated mass was identified in close proximity of the hepatic flexure, in the ascending colon. We, therefore, continued the investigations with a multislice Computed Tomography (CT) that suggested the additional diagnosis of intestinal intussusception (Figure 1). No evidence of intestinal obstruction was identified. We performed elective surgery with a median laparotomy which confirmed the diagnosis of intestinal intussusception caused by a right colon carcinoma. We did not attempted manual disinvagination to save intestinal segments as the cause was a malignant neoplasm and the risk of neoplastic spreading was consistent. We performed a radical right emicolectomy extended on the ileum and intestinal continuity was restored with a latero-lateral anastomosis with a GIA-75. At opening, the specimen showed a double ileo-ceco-colic invagination with intramural hemorrhage, intraluminal coagulated blood
Preoperative diagnosis of intussusception is difficult in adults. Usually patients undergo surgery for an explorative laparotomy or laparoscopy with a generic diagnosis of intestinal obstruction and diagnosis is intraoperative. Sometimes the symptoms are similar to internal hernias\textsuperscript{19,20}. In our case, the clinical aspects were of a bleeding carcinoma with a probable intestinal intussusception, surprisingly without any clinical sign or symptom of bowel obstruction. Multislice CT-scan showed an ileo-colic intussusception but the feature of a double ileo-ceco-colic invagination was intraoperative. Diagnostic options in these cases consist of traditional radiology with or without contrast, ultrasonography, CT \textsuperscript{21-23} scan and, exceptionally, like in this case, endoscopy. In conventional radiology, the typical features are a gaseous half-moon-shaped image on the extremity of the invaginated segment, the intussusceptum, from a dilation of the bowel before the intussuscipiens and eventually the evidence of a difficult thin passage of contrast across the stenosis determined by the invagination. Ultrasonography can, in few cases, help identifying a mesenterial thickening of the involved segment. Nevertheless, the gold-standard for radiological diagnosis is a CT-scan of the abdomen that most of the time allows the proper visualization of the intussusceptum, sometimes allowing to discriminate the intussuscipiens from the intussusceptum, reconstructing both the transversal and longitudinal sections of the different parietal layers of the invagination, and allowing the identification of the cause\textsuperscript{20}. In our case, the CT scan did not change the indication for surgery but it provided an additional information on the expected situation and complete oncologic evaluation.

Surgery is always indicated for the treatment of intussusceptions in adults, especially for the almost constant underlying neoplasm. Reduction of the invagination, when possible, allows enterotomy and excision of the lesion also laparoscopically\textsuperscript{24}. In case or in suspicion of malignancy radical exeresis is mandatory. In most cases, disinagination is impossible and resections are then carried out, especially for the ischemic damage of the intestinal walls. Protective stomas, especially for right sided intussusception, are usually not needed\textsuperscript{25-27}.

In our case of double invagination with right colic carcinoma, an ileocolic resection extended for 20 more cm on the ileum was performed and restoration of the intestinal continuity was achieved with a latero-lateral mechanic anastomosis.
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Conflict of Interest

The Authors declare that they have no competing interests.

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