

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 identified¹ mostly represented by benign or malignant tumors. Among benign tumors, leiomyomas, 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 melanomas²⁻⁵. Finally, an inverted Meckel's diverticulum has been also reported as a potential cause of intestinal intussusception⁶.

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



Figure 1. CT scan showing intestinal intussusception.

and a sessile mass on the head of the intussusci-
piens. The histology report demonstrated an ulcer-
ated and necrotic poorly differentiated adenocar-
cinoma (pT4bpN0pMx, G3, IIC). Post-operative
course was uneventful and patient was dis-
charged in 8th postoperative day.

Discussion

Intestinal intussusceptions was first described
by Barbette in 1674⁷. John Hunter, in 1789, pre-
sented three cases of this condition and defined it
“intussusception”. Hutchinson published in 1871
the first successful surgical treatment⁸.

Intussusception in pediatric age is usually idi-
opathic, while in adults in about 90% of cases an
organic cause can be identified⁹⁻¹¹. Sites of invagi-
nation are the junction points between a mobile
intestinal segment and an adjacent fixed segment
such as in the ileo-cecal region, which is the most
frequently involved anatomical district. Fixed
segments may also be acquired after previous sur-
gical procedures with the adhesions. Most of in-
vaginations occur in small bowel and are usually
due to benign lesions¹². Idiopathic invaginations,
which range from 8 to 20% of cases, also involve
mostly the small bowel. Malignant lesions of the
colon, both primary and metastatic, are responsi-
ble of the intussusception in 6-30% of cases¹³⁻¹⁶.

Double invagination represent an extremely
rare variety of intussusceptions with some spo-
radic reports in literature^{17,18}. While in children
the clinical aspects are well known in relation
with the frequency, in adults this condition can
appear in many different ways, mainly aspecific.
In Begos' series, 75% of patients showed ob-
structive symptoms, 5% acute abdomen (1). At
clinical examination, an abdominal mass was
palpable in about a third of cases.

Preoperative diagnosis of intussusception is
difficult in adults. Usually patients undergo
surgery for an explorative laparotomy or la-
paroscopy with a generic diagnosis of intestinal
obstruction and diagnosis is intraoperative. Some-
times the symptoms are similar to internal
hernias^{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 invagina-
tion was intraoperative. Diagnostic options in
these cases consist of traditional radiology with or
without contrast, ultrasonography, CT scan²¹⁻²³
and, exceptionally, like in this case, endoscopy. In
conventional radiology, the typical features are a
gaseous half-moon-shaped image on the extren-
dity of the invaginated segment, the intussuscep-
tum, from a dilation of the bowel before the intus-
susci- piens and eventually the evidence of a diffi-
cult thin passage of contrast across the stenosis
determined by the invagination. Ultrasonography
can, in few cases, help identifying a mesenteric
thickening of the involved segment. Nevertheless,
the gold-standard for radiological diagnosis is a
CT-scan of the abdomen that most of the time al-
lows the proper visualization of the intussuscep-
tum, sometimes allowing to discriminate the in-
tussusci- piens from the intussusceptum, recon-
structing both the transversal and longitudinal
sections of the different parietal layers of the in-
vagination, and allowing the identification of the
cause²⁰. In our case, the CT scan did not change
the indication for surgery but it provided an addi-
tional 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 entero-
tomy and excision of the lesion also laparoscopi-
cally²⁴. In case or in suspicion of malignancy rad-
ical exeresis is mandatory. In most cases, disin-
vagination is impossible and resections are then
carried out, especially for the ischemic damage
of the intestinal walls. Protective stomas, espe-
cially for right sided intussusception, are usually
not needed²⁵⁻²⁷.

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

Conflict of Interest

The Authors declare that they have no competing interests.

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