Adult Intussusception: Three Cases Reports and Review of the Literature.

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Abstract—Adult intussusception occurs infrequently and differs from childhood intussusception in its presentation, etiology, and treatment. Diagnosis can be delayed because of its longstanding, intermittent, and non-specific symptoms and most cases are diagnosed at emergency laparotomy. Treatment entails simple bowel resection in most cases. Reduction of the intussusception before resection is controversial, but there is a shift against this, especially in colonic cases. This paper presents the diagnosis and management of three cases of adult intussusception, in our hospital.

Index Terms— adult; bowel obstruction; intussusception.

I. INTRODUCTION

Intestinal intussusception in adults is rare (about 0.003%–0.02% of all hospital admissions). It has traditionally been considered associated with an underlying cause in about 90% of cases [1]. Intussusception occurs when one portion of the gut becomes invaginated within an immediately adjacent segment, almost invariably, proximal into the distal [2]. The clinical presentation of intussusception in adults is variable in appearance. The signs and symptoms of the bowel obstruction predominate in 82% of cases. [3] The diagnosis in adults is usually made at laparotomy, as most patients present as an emergency with intestinal obstruction. In non-emergency patients the diagnosis can be challenging as symptoms include intermittent abdominal pain that often settles comparatively quickly. [4]. we report three cases of adult intussusception.

Case report 1

We report the case of a 43-year-old patient, chronic smoking, admitted to the emergency room for acute abdominal pain associated with rectorrhagia of average abundance of acute installation evolving in a context of apyrexia and preservation of the general state. The clinical examination objectified a diffuse abdominal tenderness with digital rectal examination, palpation of the intestine by the pulp of the finger with the presence of red blood. The abdominal CT was in favor of a sigmoid-rectal invagination (Figure 1) without signs of detectable gravity.

Fig. 1. Sagittal plain CT scan of the abdomen showing colorectal intussusception.

The intervention consisted of an ileo-hemi-colectomy with an ileo-colic end-lateral anastomosis. Surgical exploration objectified an ileo-colonic invagination involving 1 meter of hial as well as the right colon which are invaginated at the level of the left colon on an anomaly of rotation of the hial realizing the aspect of a complete common mesentery (Figure2). Given the extent of the invagination, we had proceeded to a disinvagination before the resection (Figure 3), having objectified a thickened cardboard aspect of the cecal bottom with a flow of lymphadenopathies along the ileo-coeco-colo-appendicular artery (Figure 4). The post-operative suites were simple. The anatomopathological examination of the operating room was in favor of ischemic and hemorrhagic colonic necrosis without signs of specificity or malignancy.

Fig. 2. Intraoperative image showing: A: The ileocolic intussusception; B; C; D: The anomaly of rotation of the hial realizing the aspect of a complete common mesentery.

Fig. 3. Intussusception being reduced intra-operatively showing the anomaly of rotation of the hial realizing the aspect of a complete common mesentery.

Fig. 4. Photograph showing when the intramucosal lumen was opened after right hemicolectomy.

Case report 2

Patient aged 68 years, cholecystectomized 2 years ago by laparoscopy, who presents 1 month before his admission of rectorrhagia of medium abundance, associated with chronic constipation. The clinical examination was unremarkable with a normal digital rectal exam. Colonoscopy had objectified an ulcero-budding process of the sigmoid at 28 cm from the anal margin extended over 10 cm. with an anatomopathology a tubulo-villous adenoma mainly in dysplasia of low grade and focal in dysplasia of high grade. The abdominal CT was in favor of a parietal thickening of the sigmoid loop of tumor appearance associated with a locoregional lymphatic attenuation of the mesosigmoid and inferior mesenteric. diffuse parietal thickening of the inflammatory-looking rectum associated with densification of pelvic fat.

The intervention consisted of an anterior colorectal resection with an end-to-end colorectal anastomosis, a protective ileostomy with drainage of the Douglas CDS by Salem probe. Surgical exploration objectified colorectal invagination on the sigmoid tumor process without secondary localization. The post-operative suites were simple. The anatomopathological examination was in favor of a moderately differentiated and infiltrating adenocarcinoma classified pT2N0M0.

Case report 3

A 50-year-old patient with no particular pathological history, who presented to the emergency department for pain

in the left iliac fossa, fever and rectorrhagia of low abundance. The abdominal examination had objectified a pain of the left iliac fossa, and with the rectal examination, palpation of the pudding of invagination

The abdominopelvic CT had objectified a recto-sigmoid invagination with sigmoid glides in intra rectal in intraluminal accompanied by the mesenteric fat extended on 15 cm with thickened rectal wall, hypodense edema, associated with parietal pneumatosis witnessing of a digestive suffering. An irregular digestive thickening measuring approximately 36 mm is individualized within it (Figure 5 and 6). The surgical indication was asked but the patient refused to be operated.

Fig. 5. Coronal reconstruction demonstrating the colorectal intussusception, with an irregular digestive thickening is individualized within it.

Fig. 6. Scan images of the abdomen demonstrating the colocolic intussusception. A) Sagittal and B) plain axial CT.

II. DISCUSSION

Intussusception is the invagination of a bowel loop (intussusceptum) with its mesenteric fold into the lumen of a contiguous portion of bowel (intussusciens) as a result of peristalsis. It is generally believed that masses in the bowel or lumen act as an irritant and provoke abnormal peristaltic movement, which may lead to the telescoping of one bowel segment over the adjacent segment [5]. Adult intussusception is a rare entity encountered by surgeons. It differs from intussusception in children in various aspects, regarding etiology, clinical presentation, diagnostic approach, and management. Intussusception has been classified into 4 categories according to the site of origin, such as enteric, ileocolic, ileocecal, and colocolic [6]. The presenting symptoms in adult patients with intussusceptions

are non-specific and often long standing. Most series report pain as the commonest symptom, being present in 71% to 90% of patients, with vomiting and bleeding from the rectum as the next most common symptoms [4]. In our study, all the patients present bleeding.

However, while until the last few years, intussusception was diagnosed mainly in the operating room, the growing application of CT for abdominal imaging, in many clinical situations, has led to increased detection of transient intussusceptions without an underlying disease [1, 7, 8, 9]. In our study, the abdominopelvic CT had objectified the intussusception in two cases. In the third case the diagnostic had established at per operative.

Almost 90% of adult cases are due to an underlying pathological lead point including malignant or benign neoplasms, intestinal polyps, Meckel's Diverticulum, postoperative adhesions, inflammatory bowel disease, motility disorders and iatrogenic causes such as gastric tubes [10, 11, 12]. The remaining 10% cases are idiopathic. The majority of the adult colo-colonic intussusceptions caused by a pathological lead point are due to primary carcinomas – 65- 70% [12, 13]. In our study two cases are caused by colonic mass, in another case the intussusceptions are caused by an anomaly of rotation of the hila realizing the aspect of a complete common mesentery.

Adult intussusception warrants laparotomy rather than attempts at hydrostatic reduction in view of the high incidence of underlying abnormality. Controversy remains as to whether reduction of the intussuscepting lesion should be attempted at operation. Early reports advocated reducing the intussusception before resection. The perceived disadvantage of this is that malignant cells may be disseminated during the process despite no clear evidence on this issue. On the other hand, the advantages of reducing the intussusception especially when the small bowel is affected are that it may be possible to preserve considerable lengths of bowel and thereby prevent development of short bowel syndrome [4].

Begos et al [4, 14] suggest resection without attempting reduction when the bowel is inflamed, ischemic, or friable and in obvious colo-colic intussusception (given the high likelihood of malignancy). In all other cases reduction should always be attempted initially. However, Azar et al [4] suggested that surgical resection without reduction is the preferred treatment in adults, as almost 50% of both colonic and enteric intussusceptions are associated with malignancy. Simple reduction is however acceptable in post-traumatic and idiopathic intussusceptions where no pathological cause is usually present in the bowel [4, 15].

III. CONCLUSION

Intussusception is relatively rare in the adult population and this, along with the vague clinical features, makes diagnosis difficult. The CT scan has a major role in the diagnosis. Surgical treatment with resection is the optimal treatment option. However, if not managed in a timely fashion, intussusception may lead to significant morbidity which includes complete bowel obstruction, ischemia, gangrene, perforation, peritonitis and life-threatening sepsis.

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