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Acute Bowel Intussusception in Adults with Leiomyoma of the Small Intestine: Case Report

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Abstract | **Case Report**

Acute bowel intussusception is a pathology of infants and small children. Its occurrence in adults is very unusual. It is of diverse etiology. In the vast majority of cases, it is secondary to a tumour which may be benign or malignant. A leiomyoma of the small intestine revealed by bowel intussusception is a very rare entity. We report the case of a 23-year-old patient, admitted to the emergency room of the Ar-razi Hospital of the Mohamed VI University Hospital Centre in Marrakech, Morocco for an intestinal obstruction. The abdominal CT scan showed a hydro-aeric distention of the ileal coves upstream of an abdominal tumour at the pelvic level. The treatment was an open surgical carcinological resection with anastomosis. An anatomopathological and immunohistochemical study of the surgical specimen concluded that a benign-looking mesenchymal cell proliferation corresponds to a leiomyoma. bowel intussusception is a rare condition in adults. It most often leads to the discovery of an organic cause that may be tumourous. Based on this new case and after analysis of the literature, we discuss the clinical and diagnostic characteristics and the therapeutic possibilities of this rare pathology.

Keywords: Acute intestinal invagination, organic cause, small intestine leiomyoma.

INTRODUCTION

Acute bowel intussusception in adults, unlike in children, is a rare occurrence that most often occurs in the course of a small intestine tumour of malignant origin. It accounts for 1 to 5% of the aetiologies of intestinal obstruction in adults [1]. Its mode of progression is usually chronic or subacute [2,3]. It is rarely found in acute cases of intestinal obstruction or peritonitis [4]. In adults, an organic cause is found in 70 to 90% of cases, whereas in children bowel intussusception is most often idiopathic [2,5]. Consequently, in adults, the treatment is surgical, based on intestinal resection, although there is still an open debate as to whether or not a prior reduction of the intussusception coil is necessary [1,5]. We report a rare case of acute bowel intussusception revealing a leiomyoma of the small intestine in a 23-year-old woman admitted to the emergency room with an intestinal obstruction.

PATIENT AND OBSERVATION

A young woman aged 23, with no particular history, admitted to the emergency room for diffuse abdominal pain with the notion of stool and gas stoppage and bilious vomiting. The beginning of her clinical symptomatology went back to 3 weeks with the occurrence of paroxysmal diffuse abdominal pain of the type of cramps with vomiting. His intestinal transit had changed with a tendency to constipation, sometimes associated with liquid stools. This abdominal syndrome was resolved and then interspersed with paroxysmal painful episodes until the day of his hospitalisation due to the increase in pain and the cessation of bowel movements and gas. On admission, clinical examination showed a slightly distended abdomen with percussive tympany, slight sensitivity of the hypogastric and right iliac fossa, without palpable tumour, the hernial orifices were free. The rectal examination was normal. The patient was apyretic. The rest of the clinical examination was normal, but there was a recent alteration in the general condition. The usual biological examinations were without particularities. The X-ray of the abdomen without preparation showed hydroaerous distension. The abdominal-pelvic CT scan showed a hydroaerous distension of the ileal coves measuring 30mm maximum diameter upstream of an abdominal tumour in the pelvic area measuring 66x36x40mm

(figure 1 and 2). In addition to the ultrasound complement, the image of an bowel intussusception coil was objective, with a target image in axial section and a sandwich image in transverse section, upstream of a 4.3x3.5 cm tumour.

The surgery, carried out by a median laparotomy under the umbilicus, enabled an ileo-ileal intussupception to be explored upstream of a tumour with parietal development of the small intestine of approximately 4x5cm, partially stenosing at 50cm from the ileo-caecal junction (figures 3 and 4), this intussupception was responsible for moderate distension of the upstream small intestine. The intussupception coil was viable. Several mesenteric adenopathies of varying size were also present. The procedure consisted of disinvagination and resection of the small intestine tumour with a safety margin of 5cm on either side of the tumour and a few mesenteric lymph nodes, about 20cm of small intestine then ileo-ileal termino-terminal anastomosis at the same time, and the performance of a biopsy on a mesenteric adenopathy. The anatomopathological and immunohistochemical study of the operating exhibit concluded that a benign-looking proliferation of mesenchymal cells corresponds to a leiomyoma. The post-operative effects.

Figure 1: Abdominal-Pelvic CT image showing hydro-aerial distension of the ileal coves

Figure 2: CT scan image showing an endoluminal tumour in the pelvic area

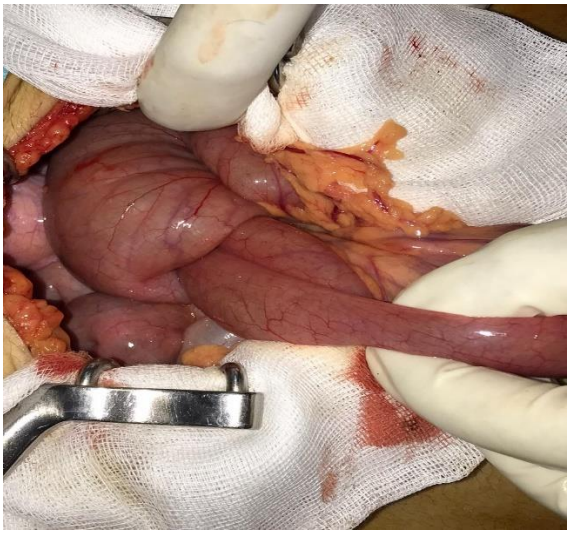

Figure 3: Peroperatory image showing a grelo-grelic invagination

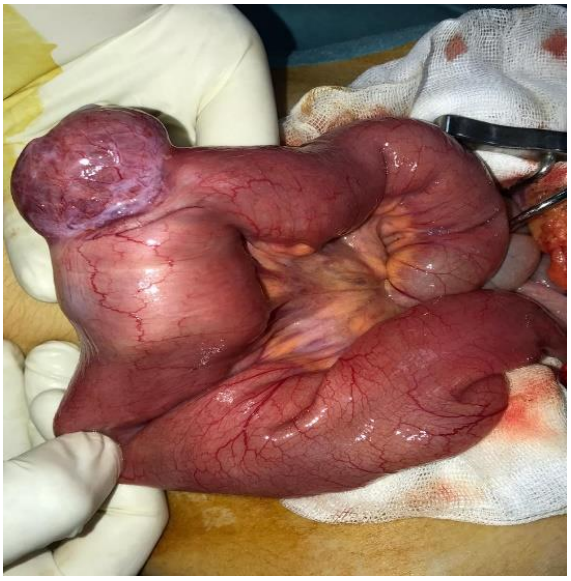

Figure 4: Peroperatory image showing the tumour of the small intestine responsible for the invagination

DISCUSSION

Bowel intussusception accounts for 1 to 5% of the etiologies of intestinal obstruction in adults, and 0.003 to 0.02% of hospitalisations, where an organic cause is found in 70 to 90% of cases and an idiopathic cause in 8 to 20%, whereas in children bowel intussusception is primitive in 90% of cases [6,7]. The first bowel intussusception was described by Barbette of Amsterdam in 1674 [8] and Sir Jonathan Hutchinson who performed the first bowel intussusception surgery in 1871. Although this condition is very rarely observed in developed countries, it is relatively common in Africa, especially in intertropical areas. The reasons for these geographical differences are unknown and certain factors such as diet and parasites are mentioned [9].

It is difficult to find a predominance linked to gender or age group; even if the average age of the different published series is between 40 and 50 years, with extremes ranging from 15 to 81 years [1,10,11]. The clinical symptomatology is polymorphic and most often misleading; acute occlusive clinical form, subocclusive clinical form with progressive onset ranging from a few days to a few weeks, non-specific abdominal syndromes (changes in intestinal transit, diffuse abdominal pain, digestive bleeding), sometimes evolving over several months, with or without alteration of the general condition [12,13]. The finding of an abdominal tumour on physical examination of the patient is a particularly valuable sign, especially if it appears to have a different location and consistency on repeated examinations. If the abdominal fat and abdominal bloating are not too great, and if the muscles of the abdominal wall are sufficiently relaxed, the swelling of the abdominal wall will be felt as a result of the intussusception.

He should be carefully looked for in right and left lateral decubitus, dorsal decubitus and Trendelenburg position [14,15]. Anatomically, the ileum is considered a preferential area of involvement, with colo-colonic inussusception occurring in only 27% of cases. Colorectal, colo-anal or jejuno-gastric intussusceptions are less common [16]. In contrast to the primitive forms of the infant. An organic lesion is found at the point of weakness of the intussusception in 80% of cases in adults. Malignant tumours represent the primary etiology of intussusceptions in adults, especially in the colon, whereas they are secondary to a benign lesion (especially in hail) in 25% of cases and 10% are idiopathic [17]. These organic lesions are represented by stromal tumours, lipomas, polyps, adenopathies, digestive thickening, especially ileocaecal. Melanoma, adenocarcinoma and metastases are found in about 15% of intussusceptions [18].

Acute bowel intussusception in a leiomyoma of the small intestine is rare, as in the case of this patient. Classically in adults, the evolution of the intussupception is chronic with intermittent abdominal pain associated with sub-occlusive attacks. The acute form is mainly reserved for ileo-ileal forms. For Mondor, the acute form would be the final stage of a chronic intussusception for which an early diagnosis has not been made [3]. This is the case of our patient who had paroxysmal pain for 3 weeks prior to a subocclusive syndrome. Whatever the initial clinical presentation, the diagnosis is mostly made by radiology (ultrasound, CT scan), and more rarely by exploratory surgery. On the radiological level, x-rays of the abdomen without preparation can help to make the diagnosis of small bowel obstruction, direct visualisation of the head of the intussusception in the form of a watery tone mass moulded by air from the downstream intestinal segment is very rare [1] but in most cases this examination provides little information.

Our patient had hydro-aerial distention of the small intestine type. The abdominal ultrasound is a reliable examination and appears promising for the diagnosis of bowel intussusception [4,5], it typically gives in longitudinal section a target image with two peripheral hypoechoic rings and a central echogenic ring, and in cross-section [4,5] a "sandwich" image with three superimposed cylinders, which corresponds to the intussusception coil. Abdominal ultrasound combined with colour Doppler may in some cases show the disappearance of venous and arterial hyperaemia from the intussusception coil, suggestive of ischaemic necrosis [19,20].

Despite the importance of the information provided by the ultrasound scan, it is often hampered by the presence of air in case of obstruction. Abdominal CT scan with injection of contrast agent, performed as an emergency, increases the sensitivity of the diagnosis, which can reach 90% with a specificity of 100% in adults [21]. It allows the diagnosis of the obstructive syndrome, its mechanism, in this case the intussusception, its precise location and to show its cause (intraluminal or extraluminal tumour). It can detect an organic cause in 71% of cases. Its role is more important in cases of suspicion of abdominal lymphoma, lipoma, tissue lesions related to a polyp. It can be used to detect a thickening of the digestive wall associated with lymphoma adenopathy, an intraluminal lesion of fat density in the center surrounded by a digestive wall in the case of lipoma, or tissue density in the case of polyp. The two classic images are the "sandwich" image in longitudinal section showing the head of the AII and the "cockade" image in cross-section showing the AII's coil.

In our case, the CT scan with an ultrasound complement was of great help, it allowed the discovery of an occlusive syndrome upstream of an acute bowel intussusception between the small intestine and the small bowel on an abdominal tumour at the pelvic level. The treatment is always surgical in adults and leaves no possibility for reduction by hyperpressure under radiological control. A more or less extensive resection may be necessary [22]. Simple disinvagination is permissible in idiopathic forms. Intestinal excision, in compliance with carcinological requirements, is necessary when a tumour is found to be obviously malignant. Our patient benefited from a carcinological intestinal resection carrying the tumour and a few mesenteric ganglions, followed by an intestinal-intestinal termino-terminal anastomosis at the same time. An anatomopathological study is necessary for diagnostic confirmation and must be completed in some cases by an immunohistochemical study. In our case histology and immunohistochemistry concluded that a leiomyoma was present. The discovery of a benign tumour and the young age of our patient is a good

prognostic factor, but malignant degeneration is possible [23].

CONCLUSION

Bowel intussusception in adults is often secondary to an organic tumour or inflammatory lesion. It is characterised by its clinical polymorphism. These are essentially repeated subocclusive phenomena. Ultrasound and especially CT scans have an unavoidable place in the diagnosis of the invagination and its cause. Concerning the treatment of bowel intussusception in adults, the resection of the intussusception segment is always necessary because this accident is only an epiphenomenon at the base of which in 80% of cases there is an organic lesion which must be treated.

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