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Acute Intestinal Invagination in Adults Relating to Internal Hernia: A Case Report

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Abstract **Case Report**

Acute intestinal intussusception is a pathology of infants and small children. Its occurrence in adults is rare. Its etiology is diverse. In the vast majority of cases, it is secondary to a tumor, which may be benign or malignant. We report the case of a 31-year-old patient, operated on in August 2022 for appendicular peritonitis, admitted to the emergency department of the Hassan II University Hospital in Fez, Morocco, for an intestinal obstruction. The abdominal CT scan showed an acute intestinal intussusception, and treatment was open surgical resection. Based on this new case and a review of the literature, we discuss the clinical features, diagnosis and therapeutic possibilities of this rare pathology.

Keywords: CT scan, Tumor, appendicular peritonitis, diagnosis and therapeutic.

INTRODUCTION

Acute intestinal intussusception (IIA) in adults, unlike in children, is a rare event that most often occurs in the setting of a small bowel tumor of malignant origin.

It accounts for 1 to 5% of intestinal occlusion etiologies in adults [1]. Its course is usually chronic or subacute [2, 3]. It is rarely discovered in the setting of acute intestinal obstruction or peritonitis [4]. In adults, an organic cause is found in 70-90% of cases, whereas in children, intestinal intussusception is most often idiopathic [2, 5]. Consequently, in adults, treatment is surgical, based on intestinal resection.

However, there is still an open debate as to whether or not prior reduction of the intestine is necessary [1, 5]. We report a rare case of acute intestinal in a 31-year-old man admitted to the emergency department with an occlusion.

PATIENT AND OBSERVATION

A 31-year-old patient, operated on for appendicular peritonitis a year ago, admitted to the emergency department for diffuse abdominal pain with notion of cessation of matter and gas and bilious vomiting.

This abdominal syndrome was resolved, then interspersed with paroxysmal painful episodes until the day of her hospitalization, prompted by the accentuation of the pain and the cessation of feces and gas.

On admission, clinical examination revealed a distended abdomen with tympany on percussion, slightly tender, with no palpable mass and free hernial orifices. Rectal examination was normal. The patient was apyretic. The rest of the clinical examination was normal.

Abdominopelvic CT showed an occlusive syndrome upstream of an acute intestinal intussusception (Figure 1).

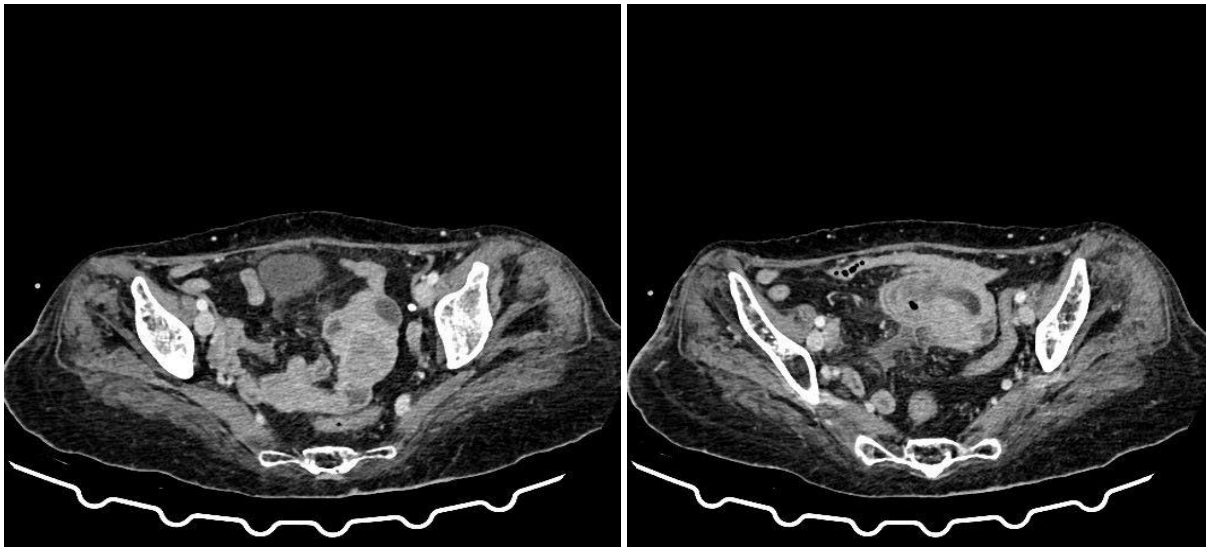

Figure 1: Axial section CT images showing an occlusive syndrome upstream of an acute Intestinal intussusception

The indication for surgery was clear. Surgery, performed via a median laparotomy straddling the umbilicus, confirmed the presence of an internal hernia, located around 2 m from Treitz's angle and 1.80 m from the ileo-caecal valve. This intussusception was responsible for significant upstream bowel distension.

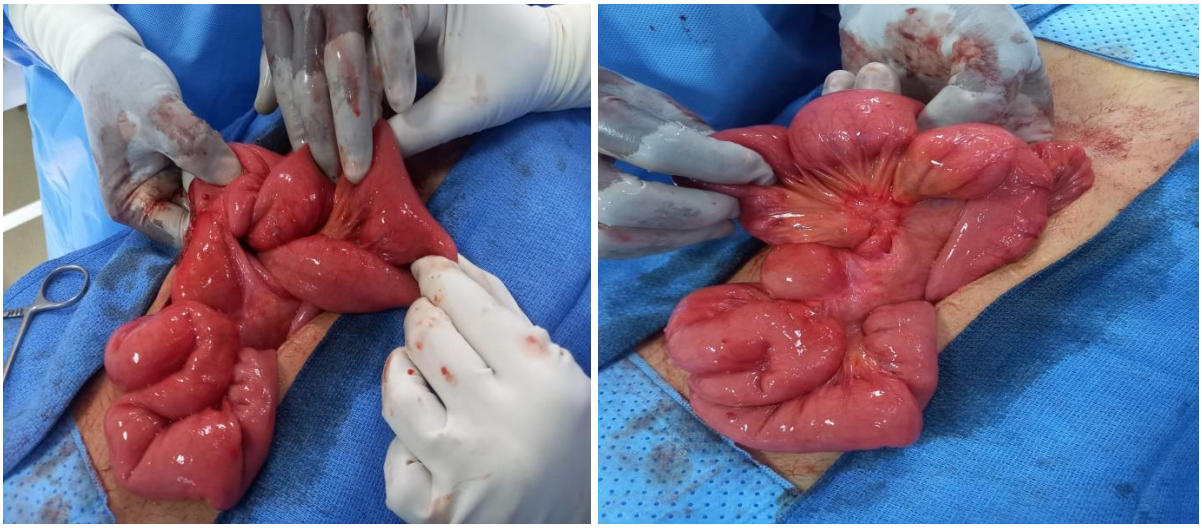

Figure (2 & 3): Several intraoperative images showing an internal hernia

The procedure involved laborious adhesiolysis.

Post-operative follow-up was straightforward: gas and stool transit resumed with a clean dressing. The patient was discharged at D4 and seen in consultation at D15 with good progress.

DISCUSSION

Intestinal intussusception accounts for 1 to 5% of the etiologies of intestinal obstruction in adults, and 0.003 to 0.02% of hospital admissions, where an organic cause is found in 70 to 90% of cases and an idiopathic one in 8 to 20% and idiopathic in 8-20% of cases, whereas in children, intestinal obstruction is primary in 90% of cases [6, 7]. The first intussusception was described by Barbette of Amsterdam in 1674 [8] and Sir Jonathan Hutchinson performed the first intussusception surgery in 1871.

While this condition is rarely seen in developed countries, it is relatively common in Africa, particularly in the intertropics. The reasons for these geographical differences are unknown, but factors such as diet and parasites have been suggested [9]. It is difficult to find a predominance linked to gender or age, even if the average age of the various published series is between 40 and 50 years, with extremes ranging from 15 to 81 years [1, 10, 11].

Clinical symptoms are polymorphous and often misleading: acute occlusive symptoms sub-occlusive picture of gradual onset, lasting from a few days to a few weeks, non-specific abdominal syndromes (altered

transit, diffuse abdominal pain, digestive bleeding), bleeding), sometimes evolving over several months, with or without impairment of general condition [12, 13]. The presence of an abdominal mass on physical examination is an important sign of the disease.

It is particularly valuable if it appears in different places and of different consistency during repeated examinations, and should be looked for carefully in the right and left lateral decubitus positions, dorsal decubitus and Trendelenburg position [14, 15].

Anatomically, the ileum is considered a preferential site of involvement, with colo cololic intussusception accounting for only 27% of cases. Colorectal, coloanal or jejunogastric invaginations are rarer [16].

In contrast to primitive infant forms. An organic lesion is found at the point of weakness of the intussusception in 80% of adult cases. Malignant tumors represent the primary etiology of intussusception in adults, especially in the colon, whereas it is secondary to a benign lesion (especially in the small bowel) in 25% of cases and idiopathic in 10% are idiopathic [17]. These organic lesions are represented by stromal tumors, lipomas, polyps, adenopathy, digestive thickenings, especially ileo-caecal thickenings, melanoma, adenocarcinoma and metastases are found in around 15% of invaginations of intussusceptions [18].

In adults, intussusception typically progresses chronically, with intermittent abdominal pain associated with sub-occlusive crises. The acute form is mainly confined to ileo-ileal forms. For Mondor, the acute form is the ultimate stage of a chronic intussusception for which an early diagnosis had not been made [3]. This was the case with our patient, who had been experiencing paroxysmal pain for a month prior to a sub occlusive syndrome.

Irrespective of the initial clinical presentation, diagnosis is mainly made by imaging (ultrasound, CT scan), more rarely by exploratory surgery. Radiologically, unprepared abdominal X-rays can help to establish the diagnosis of small bowel obstruction; direct visualization of the bladder head as a watery mass molded by air from the downstream intestinal segment is very rare [1]; but in most cases, this examination provides little information.

Abdominal ultrasonography is a reliable examination and appears promising for the diagnosis of intestinal intussusception [4, 5]; in longitudinal section, it typically gives a target image with two peripheral hypoechoic rings and a central echogenic ring, and in transverse section [4, 5] a "sandwich" image with three superimposed cylinders, which corresponds to the invaginated bladder. Abdominal ultrasound combined with color Doppler can, in some cases, demonstrate the disappearance of venous and arterial hyperemia in the invaginated bladder, suggestive of ischemic necrosis [19, 20].

Despite the importance of the data provided by ultrasound, it is often hampered by the presence of air in cases of occlusion. Our patient did not benefit from abdominal ultrasound. Abdominal with contrast injection, performed as an emergency procedure, increases the sensitivity of the diagnosis, which can reach 90% with a specificity of 100% in adults [21].

Treatment is always surgical in adults, and leaves no room for reduction by hyper pressure under radiological control. A more or less extensive resection may be necessary [22].

Simple desinvagination is permissible in idiopathic forms. Intestinal excision, while respecting carcinological imperatives, is imperative when an obviously malignant tumour is discovered.

The prognosis depends on the duration of evolution, the extent of lesions and the nature of the cause [23].

CONCLUSION

Intestinal intussusception in adults is often secondary to an organic lesion, and is characterized by its clinical polymorphism. It is essentially a resub occlusive phenomenon. Ultrasound and, above all, CT scans play an essential role in diagnosing intussusception and its cause.

Conflicts of interest: The authors declare no conflict of interest.

Authors' contributions: All authors were involved in patient management and manuscript writing.

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