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Comparison between children and adults intussusception. Description of two cases and review of literature

INTRODUCTION: *Intussusception is a common condition in children, it is rare in adults. Adult intussusception differs from pediatric intussusception in various respects, including etiology clinical characteristics and therapy.*
METHODS: *We present and discuss a new case of intussusception in children and adults.*
RESULTS: *In child the Barium Enema x-ray examination is identified an endoluminal filling defect to refer to the apex of the invaginated loop at the rectal level, with slow ascent during the progressive injection of the radiopaque contrast medium. At the end of the procedure, incomplete reduction of the picture is documented. The patient undergoes emergency surgery where the presence of an ileo-ceco-colic invagination is documented. Intussusception is reduced by taxis. In the adult laparoscopic right hemicolectomy was performed. High-grade B-cell Burkitt's lymphoma was confirmed by immunohistochemistry.*
DISCUSSION: *In contrast to intussusceptions in children, in the adult population, a demonstrable etiology is found in most of the cases. In adults surgery is always indicated. The non-invasive resolutive intervention most commonly used in the child and best known consists in the rectal introduction of a radiopaque contrast medium (air or barium) at controlled pressure until.*
CONCLUSIONS: *Although intussusceptions occur at all ages, there are major differences in the clinical presentation, diagnostic approach, and management between pediatric and adult populations. Intussusception is remarkably different in these two age groups and it must be approached from a different clinical perspective.*

KEY WORDS: Intussusception in children, Intussusception in adults, Intussusception symptoms, Radiology and treatment

Introduction

Intussusception occurs when a more proximal portion of the bowel (intussusceptum) invaginates into the more distal bowel (intussuscipiens) [1]. The pathomechanism is thought to involve altered bowel peristalsis at the intraluminal lesion, which is then a lead point for the intussusceptum [1]. This leads to compression and angulation of the mesenteric vessels, resulting in reduced perfusion, venous congestion and edema of the intestinal wall, up to ischemia and possible intestinal necrosis. The presence of the intussusceptum can also cause intestinal obstruction, with abdominal pain, distension and throwing up [1]. Although intussusception is a common condition in children, it is rare in adults. Adult intussusception differs from pediatric intussusception in various respects, including etiology and clinical characteristics [2,3].
Intussusceptions are classified according to the intestinal tract involved in four categories: enteric, ileocolic, ileo-

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cecal, and colic [4-6]. The enteric and colic forms are those involving the small intestine (jejunum or ileum) and the large intestine, respectively. In ileocolic intussusceptions, prolapse of the ileum into the colon occurs through the ileocecal valve. Ileocecal intussusceptions are defined as those with the ileocecal valve as the lead point for the intussusception) [4-6]. However, it remains difficult to distinguish the last two forms. Many authors prefer to classify this type of invagination according to the location (Enteric and colon) and etiology (benign and malignant).

Materials and Methods

Here, we present and discuss a new case of intussusception in children and adults. In addition, a search of the English-language medical literature using PubMed and Google Scholar was conducted for articles related to gastrointestinal intussusception; the key words used were intussusception in children, intussusception in adults, intussusception symptoms, radiology and treatment. If there were any missing data, the corresponding authors of the articles in question were contacted by email. Articles containing adequate information, such as publication year, patient age, sex, duration of complaint, radiological tools, presence of palpable mass, surgical approach, were included, while studies and comment articles with insufficient clinical and demographic data were excluded.

Results

Case Report n. 1

A 5 year-old, born at full term from spontaneous birth in normal pregnancy. Due to the presence of uncontrollable crying, associated with food vomiting and inappetence, the patient is taken to our Pediatric Clinic. Upon entering the ward, the baby is in moderate clinical conditions, with a distended abdomen, painful on palpation in the lower quadrants; on rectal probing, there is a leakage of abundant muco-haematic material (dark red blood mixed with bright red blood). Blood chemistry tests show leukocytosis (GB 18.4 x10^3/uL, Neu 81.4 %).
The ultrasound of the abdomen documents, in the hypogastric site with partial extension to the right iliac fossa and to a greater extent in the left iliac fossa, the presence of a formation with a transverse aspect to target and an elongated morphology, which appears characteristic for intestinal invagination, with hyperechoic central portion referable to the mesenteric adipose tissue, in the context of which some lymph nodes are appreciated, with a maximum size of about 1 cm. Concomitant adjacent liquid .
In the Barium Enema x-ray examination is identified an endoluminal filling defect to refer to the apex of the invaginated loop at the rectal level, with slow ascent during the progressive injection of the radiopaque contrast medium. At the end of the procedure, incomplete reduction of the picture is documented, with apex of the invaginated loop appreciable at the level of the middle third of the transverse colon.
The patient undergoes emergency surgery where the presence of an ileo-ceco-colic invagination is documented , located in the left para-umbilical site. Intussusception is reduced by taxis. The cecum, but especially the last ileal loop, is edematous and prey to severe vascular suffering (Fig. 1). Warm-moist gauze is applied and a gradual recovery of vascularization is seen.
The postoperative course takes place without complications and the patient was discharged within 10 days.

Case Report n. 2

A 31-year-old man without previous medical history, except for a post-traumatic pneumothorax, presented to our emergency department with a 2-week history of diffuse colic pain and weight loss. Physical examination showed abdominal distension, a localized pain and a palpable mass in the right lower quadrant. Laboratory studies were normal (WBC 4.99 x 10^3/uL; HGB 9.9 g/dL; HIV-EBV tests were negative; CEA and CA 19-9 were negative). A computed tomography (CT) of the abdomen showed a three-layered structure giving the characteristic target-shaped appearance in the ascending colon. Moreover, the CT showed a hyperdense 60x50 mm right colic parietal lesion, signs of ileocolic intussusception with adjacent lymphadenopathy measuring 20 mm (Fig. 2).

Fig. 1: Intussusception is reduced by taxis. The cecum, but especially the last ileal loop, is edematous and prey to severe vascular sufferi.

Fig. 2: CT showed a hyperdense 60 × 50mm right colic parietal lesion, signs of ileocolic intussusception with adjacent lymphadenopathy.

Fig. 3: Surgical specimen after opening of the colon with appearance of tumor at the ileocaecal valve.

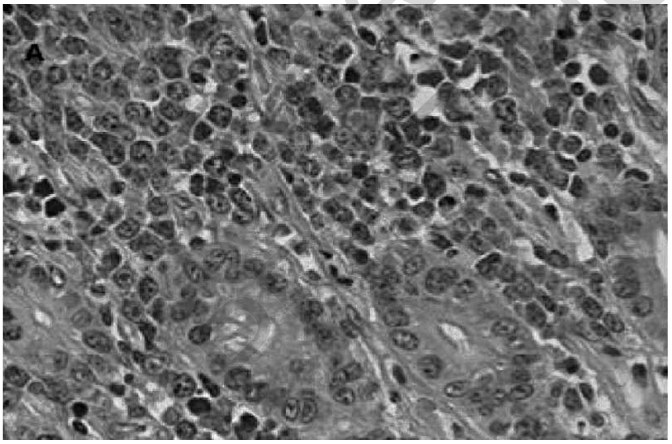

Fig. 4: Histological and immunohistological examination of the specimens showing diffuse large B-cell non-Hodgkin's lymphoma.

Laparoscopic exploration was performed. Ileocolic intussusception causing occlusive status with multiple lymphadenopathies along the ileocecal artery were observed intraoperatively. Laparoscopic right hemicolectomy was performed following strictly oncologic principles with ileocolic, right colic and right branch of middle colic artery ligation. Previous reduction of the invaginated segments was not attempted. The specimen was exteriorized through periombelical midline incision and primary extracorporeal anastomosis was performed using double layer manual sutures. Gross examination of the specimen revealed a tumor mass of the iloecaecal valve measuring 50 x 45 mm which seemed infiltrate muscular layer (Fig. 3). Microscopy examination showed ileocaecal valve section presenting dense proliferation of median and large-sized atypical lymphoid cells with eosinophilic cytoplasm and one or various irregular nucleoli next to the basal membrane. Histopathology of 25 regional and omental lymphnodes revealed focal lymphomatous involvment. Immunophenotipic profile was: CD20+, CD79 alfa+ (Fig. 6), CD10+, BCL2 –+, BCL6–+, CD5–++, Ciclina D1–, CD3–, CD30–, ALK–. Proliferation index was high (Ki67/MIB–1 >95%). Fluorescent in situ hybridization (FISH) showed typical cromosomic traslocation: t (8; 14) (q24; q32). Final histopathological diagnosis was primary diffuse large B cell lymphoma (DLBCL) of the colon (WHO) (Fig. 4). Postoperative course was uneventful and patient was discharged 6 days after surgery. Six weeks after surgery, the patient underwent bone marrow biopsy and full-body CT scan for a further evaluation of the disease. Bone marrow biopsy demonstrated normal proliferation and maturation of all cell lines; CT scan did not show other disease localizations. First, the patient received a "course A" – Hyper CVAD combined chemotherapy (cyclophosphamide, doxorubicin, vincristine, and prednisone) and then the "course B" (metotrexate, cytarabine). At 8-month follow-up before this report patient is still alive and free of disease.

Discussion

Intussusception occurs worldwide; its incidence is approximately 1 to 4 out of every 2000 children, and with a peak prevalence within their first 3 years of life [7]. It is a pediatric emergency and the second most common cause of gastrointestinal obstruction among young children [8-9].

Intussusception in adults represents 5%-16% of all cases of intussusception and 1%-5% of all cases of intestinal obstruction [10-13]. In children, 90% of cases are idiopathic, while 70%-90% of adult intussusception cases are secondary to an underlying disease, with about 65% of cases due to neoplastic disease [10,14,15]. Non-neoplastic processes represent for 15%-25%, while cases of idiopathic intussusception account for about 10% of cases [12,15-16].

Although most cases of intussusception in children are idiopathic, it is sometimes possible to identify the presence of lead poin such as a Meckel's diverticulum,

polyps, lymphomas, hematomas of the intestinal wall in Henoch-Schönlein or hemophilia, intestinal duplications, cysts or neurofibromatosis. In cystic fibrosis (CF) the event is rare. In the literature sporadic cases are described, both in very young children and adolescents and also in adults. Khera et al. [17-18] describe a case of a CF adolescent who had chronic invagination of the appendix inside the cecum, which in turn invaginated into the colon up to the anus, causing the appendix to prolapse from it.

It had been speculated that patients with celiac disease (CD) may also have an increased risk of developing intussusception. Ludvigsson et al [19] found no association between intussusception and CD prior to CD diagnosis in their study, but found a twofold increased risk of intussusception in patients who had already been diagnosed with CD. However, since only 12/29,060 (0.04%) subjects with CD developed intussusception during follow-up, intussusception is to be considered a rare complication in CD. This study does not support the hypothesis of screening CD in patients with intussusception [19].

In the forms of intussusception that develop immediately after infections, it is thought that the increase in volume of the lymphoid tissue of the intestine (mesenteric lymph nodes and Peyer's plaques) may act as lead points. This would explain the fact, why malnourished children, having a less evident intestinal lymph node representation, have a low risk of intussusception [20].

However, in studies in mice, Peyer's plaques do not appear to act as a lead point [21-22]. In Europe, mesenteric lymphadenopathies have been found in 19-50% of patients undergoing surgery or ultrasound investigation [11,23,24]. Two small studies tried to find a relationship between intussusception and rotavirus infection. In the first prospective study, an increase in intestinal wall thickness was observed in 3 of the 5 infants during illness, with no difference in mesenteric lymph node size or intestinal motility during illness and convalescence [25]. In the second study (a prospective cohort study) showed an increase in intestinal wall thickness in children with rotavirus infection compared to uninfected children and increase in size of mesenteric lymph nodes during infection compared to convalescence [15].

Some authors had hypothesized a possible role in the development of intussusception by rotavirus vaccines. The first rotavirus vaccine was cleared for sale in the US in 1998 (Rotashield by Wyeth). Recommended for routine vaccination in the US, it was withdrawn 10 months after being placed on the market (October 1999) for association with cases of intestinal intussusception. Although vaccination-associated cases were rare (1 case per 10,000 children in the first two weeks after the first dose of vaccine) [26], the risk of intussusception within 3-14 days of administration was 20 times greater than expected after first dose, and 5 times higher after the second dose. The pathogenetic mechanism of intussusception associated with the rotavirus vaccine is not clear: it is possible that the live attenuated virus could cause an increase in the thickness of the distal ileum wall and lymphadenopathy, increasing the risk of invagination [27]. The reintroduction of the rotavirus vaccine since 2006 has not led to a detectable increase in the number of hospital discharges for intussusception among US infants [28].

It has also been hypothesized that the introduction of new foods, including some proteins, could induce a dimensional increase in intestinal lymphoid tissue [20]. To date, evidence of an increased risk of intussusception caused by dietary factors has only come from animal studies. Between 5 and 60% of cases of intussusception it is possible to trace a history of recent gastroenteritis or upper respiratory tract infection with a seasonal trend with a peak in spring and autumn. Some authors suggest a possible link with the types of viruses children could contract during these seasons.

Johnson et al in their study showed that children with low socioeconomic status had a 1.5 times greater risk of developing intussusception [29]. It is unclear which underlying mechanisms might explain the association of intussusception and socioeconomic strata, but it is possible that genetic, environmental and cultural factors, including exposure to enteric pathogens and particular nutritional practices [30] may play a role. In this study, the history of recent gastroenteritis was shown to play a role in the development of intussusception, and similar results were shown in other studies [31,32].

In contrast to intussusceptions in children, in the adult population, a demonstrable etiology is found in 70% to 95% of cases and primary or secondary malignant tumors are the cause of approximately 40% of intussusceptions. Malignant lesions account for 30% of cases of invagination in the small intestine while if the invagination is localized in the colon it has a malignant etiology from 63% to 68% of cases [33,34]. Causes of intussusception of the colon include adenocarcinoma and metastatic carcinoma while for the small intestine we have primary adenocarcinoma, gastrointestinal stromal tumors, lymphoma and carcinoid tumors and some metastatic malignant neoplasms with intestinal localization (for example, melanoma) [35]. Among benign tumors that cause intussusception are leiomyoma, adenoma, lipoma [36], Brunner cell hamartoma, hemangioma, adenomyoma, neurofibroma and desmoid tumors.

Symptoms in the child usually involve acute onset, and are well described by the Ombredanne triad with abdominal colic pain, bloody stools (commonly described as "currant jelly"), and vomiting. On physical examination these symptoms may be associated with the presence of a palpable abdominal mass. While the presence of this triad has a 93% positive predictive value for intussusception, it unfortunately occurs in less than 25% of cases. However, many patients present various combinations of nonspecific symptoms, including vomiting, abdominal pain, excessive crying, or lethargy, and may initial-

ly be confused with other abdominal or neurological pathologies [37].

In an ancient textbook Finkelstein mentioned that in a young patient with acute intestinal obstruction and without the presence of an incarcerated hernia, probable invagination must always be suspected. Furthermore, Ombredanne proposed the following equation: ileus + bloody stools = intussusception [38].

While the clinical picture in the child is well known in relation to its frequency, in the adult intestinal intussusception can manifest itself with nonspecific clinical pictures. In the Bogos series, 75% of patients presented obstructive symptoms, 5% with acute abdomen [39]. On physical examination it was possible to palpate an abdominal swelling in about one third of cases [39].

Clinical symptoms are varied and not typical. Abdominal pain of various nature and intensity, vomiting, unexplained weight loss (about 39% of all patients), permanent fatigue, night sweats, sporadic gastrointestinal bleeding are all symptoms with which this pathology can occur [40].

The combination of these symptoms is reported in 10-40% of cases. Following the onset of complications, other symptoms could be added to the aforementioned symptoms such as intestinal bleeding following the erosion of a large vessel or signs of peritonitis in case of intestinal perforation, or signs of intestinal obstruction in case of obstruction of the lumen [40].

Although nowadays the barium enema is still preferred by many for confirming the suspicion of intussusception (it revealed the classic "coil sign" around the intussusceptum, in addition of being diagnostic, the barium enema was also usually therapeutic ; barium pressure often reduces the invaginated segments), ultrasound has proved to be a reliable diagnostic tool, non-invasive and free of side effects and with sensitivity values™ of 98-100% and specificity of 88-100% so as to induce many operators prefer ultrasound both for diagnosis and for a first attempt at ultrasound-guided non-bloody reduction [41].

An ultrasound performed in the patient's bed by an experienced doctor can be crucial in reducing the time required for diagnosis and definitive treatment [42].

Ultrasonographically[43] the intussusception appears in cross scan to the axis of the intestine, usually in the right hypochondrium, as a rounded mass with a target appearance, with a hypoechoic and thickened external wall due to parietal edema, and with hyperechoic central area (Donut-like pattern). In the periphery of the mass, the image of concentric rings with the external and internal hypoechoic rings and the hyperechoic intermediate ring is more common. These rings correspond respectively to the external, internal wall and interface between the two (target-like pattern). In longitudinal scan it is possible to view two hypoechoic external layers (external wall of the invaginated) and two hypoechoic internal ones (internal wall) separated from each other by 3 hyperechoic interfaces. The aspect of the invaginated loses these characteristics when excessive venous stasis leads to massive edema and / or subserosal hematoma. In this case it is possible to appreciate a solid mass without evidence of stratification. Sometimes inside the invaginated it is possible to point out lymph nodes of increased volume and hypoechoic and thickened and hyperechoic mesentery. The presence of free peritoneal fluid and dilated intestinal loops upstream of the intussusception are signs of complication. Some ultrasound signs have been identified that contraindicate any attempt at non-bloody reduction of the intussusception. Among the most significant are reported: absence of signals of parietal flow, presence of lymph nodes with a diameter greater than 12 mm inside the intussusception, presence of free liquid in the peritoneum, presence of fluid trapped within the invagination, donut like pattern. A statistically significant difference was reported in the outcome of hydrostatic reductions of invaginates containing more than one lymph node, including one with a major axis of 11 mm (46.4%) and invaginates without lymph nodes or other risk signs (81.1%). The presence of lymph nodes is more common in post gastroenteritis intussusceptions [44-48].

Weihmiller et al [49] proposes a diagnostic algorithm, which however excludes ultrasound because it is not available everywhere, as well as being operator-dependent. In his study he enrolled 310 children with an average age of 21.1 months, with abdominal pain (83%), vomiting (56%), and lethargy (36%). 77% of the children had at least two symptoms. All received a direct x-ray of the abdomen, and 68% an ultrasound as a control. On the basis of the results obtained, they conclude that: In the presence of pathological X-ray the risk of intussusception is high (30/90; percentage 33.3%). Infants with negative x-ray and age <5 months have a very low risk of intussusception (none of 31 patients with these characteristics). Those aged >5 months, Rx negative and without biliary vomiting have a low risk of intussusception (7 cases out of 179; 3.9%), which becomes low if there is also diarrhea (1 case out of 54; 1.8 %). In the presence of biliary vomiting in this age group, the risk seems to increase, even if the Rx is negative (1/10; 10% – but the cases were too few). In conclusion, the authors suggest performing an X-ray directed to all suspected cases, proceeding with ultrasound or directly pneumatic reduction in cases with pathological findings. In those with negative X-ray, if there is diarrhea and there is no biliary vomiting, only observation is justified. However, this conclusion seems to be in contrast with the high incidence of diarrhea in the case of intussusception reported by other case studies.

Mendez et al [50] considers direct radiography of the abdomen as a first choice exam for the same reasons: ultrasound not available everywhere, too operator-dependent. In a population of 201 children aged <3 years with suggestive symptoms of intussusception, the standard radiography of the abdomen has a high sensitivity (90.2%)

TABLE I - *Comparison between adult and childhood intussusceptions [54bis]*

	Adult	Childhood
m/f ratio	1:1.3	3.6:1
Mean age	54.6 yrs	2.2 yrs
Treatment	Surgical	Nonsurgical (67–90%)
Diagnostic yield		
CT	52%	–
Contrast	41%	70%
U/S	32%	67%

TABLE II - *The different advantages of ultrasound guided hydrostatic reduction.*

– There is no risk of x-ray exposure.
– It is relatively simple, effective, economical and quick.
– Associated with less morbidity and shorter hospital stay.
– It can trace the change of the mass closely; both on transverse and longitudinal scans and can provide a clear echogram, thus definite criteria of reduction can be obtained.
– Ileo-ileo-colic intussusception can be diagnosed during reduction.
– One can easily assess changes in the child's general condition, including breathing and abdominal distension.
– Intestinal perforation during reduction can be accurately and promptly recognised.
– In cases where partial reduction is achieved, the operating time is markedly reduced.
– Recurrence can be treated by the same method.

even if it is not very specific (63.4%). But the association of a highly suggestive X-ray of invagination with abdominal pain, lethargy, vomiting reaches a specificity of 95%, and in this case ultrasound is not essential.
From the diagnostic point of view, it is rare that direct radiography of the abdomen, in the adult patient, can allow a diagnosis, as specific signs of intestinal intussusception (target image, meniscus sign) are rare [51]. Even the radiological study of the digestive tract with oral contrast media and the barium enema have, in adults, a reduced diagnostic utility [52]. Computed tomography (CT) and magnetic resonance imaging (MRI) undoubtedly have a high diagnostic reliability and are also able to frequently highlight the underlying cause of the intussusception [52].
While the transabdominal ultrasound study of the intestine has shown a high diagnostic accuracy [53] and is currently considered a first level diagnostic technique, which can be used directly at the child's bed [54] (Table I), this method is certainly also useful in adult, even if there are no prospective studies in the literature, due to the rarity of this pathology in this age group [55].
Abdominal CT is currently considered the most sensitive radiological method to confirm intussusception with a diagnostic accuracy of 58% to 100%. The CT image of the intestine-within-intestine, suggested by the presence between the intestinal walls of mesenteric fat and compressed vessels is a pathognomonic sign.

The non-invasive resolutive intervention most commonly used in the child and best known consists in the rectal introduction of a radiopaque contrast medium (air or barium) at controlled pressure until it reaches the part of the intestine that is invaginated in such a way that, pushed by the pressure of the contrast medium, it slips out of the intussusception.
To this method many currently prefer, as a first approach, the guided echo enema with preheated saline solution (500-1000 ml in about 15-30 minutes) since it has the advantage of not exposing to radiation, it has the same effectiveness as the techniques performed under fluoroscopy, lower risks of perforation, reduction of intervention times, reduction of the time required for sending to the operating room if required and does not increase the incidence of recurrence of intussusception.
In 1982 Kim [55] and his team did the first ultrasound guided hydrostatic reduction with saline solution in the child. Ultrasound is now accepted as a Method to guide the hydrostatic reduction of intussusception. Among the solutions that are commonly used are tap water, physiological solution or Ringer's lactate [56]. The different advantages of this technique are shown in Table II.
Another type of non-operative management of intussusception in the child is pneumatic reduction. The supporters of this procedure compared to the previous one are of the opinion that if a perforation occurs, this method would cause less morbidity than the hydrostatic one which, after a possible perforation, due to the presence of liquid would more easily determine the diffusion of the intestinal contents in the peritoneal cavity. However, the benefits of using air for intussusception treatment have recently been questioned due to the increased risk of causing perforation [55-56].
Arslan et al. [57] in their study analized 150 patients aged between 2 months – 12 years of age with intussusception; Pneumoreduction (PR) was successfully performed in 86% of patients. It was carried out once in 86% of these patients and twice in 8.1%. PR was unsuccessful in six patients and they underwent surgery. Manual reduction (31 or 67.4% of operated patients) and resection – anastomosis (15 or 32.6 % of patients) were performed by surgery. Perforation occured in two patients (1.3%) during manual reduction. Arslan et al in their study showed that PR is an effective method in the treatment of intussusception with a high success ratio and a low complication ratio. It was possible to perform the procedure especially in patients who came in the early stage of the condition.
In case that these methods are not conclusive it is necessary to resort to surgery. Without corrective surgery, the recurrence rate is 5-10%. Jenke et al [58] in their study found that the rate of surgery was 24.6%, higher in cases of gastroenteritis (31.5%) and Schonlein-Henoch purpura (62.5%). In addition, the likelihood of surgery was higher in children with blood in their stools.
Also in the study, a stratification of cases in 5 clinical

groups is reported and each class associates the risk of having to resort to surgery: patients who were presented only with abdominal pain had a probability of 10%, the same probability if it was associated at least a non-specific symptom or if the patient in addition to abdominal pain also presented pallor or crying fits. If blood was detected in the stool the percentage rose to 26.5% up to almost double 50% in case of Shock.
The hospital's level of specialization has no influence on success rates and indeed the time spent for the transfer to a referral center worsens the prognosis. Consequently, the authors recommend admitting the child to the nearest hospital within 1 hour, and avoiding the transfer [58-59]. The recurrence rate of intussusception ranges from 8% to 15% [60-61] and is observed more following non-surgical reductions than surgical ones [60]. A possible explanation is related to the formation of adhesions following surgery [60-64] which would seem to prevent the intestinal segments from sliding on top of each other and therefore from invaginating. There is controversy about the treatment of recurrent intussusception, some authors recommend treating each recurrence case as if it were the first episode [62-63].
In adults surgery is always indicated in consideration of the almost constant presence of intestinal neoformations due to intussusception. Most of the debate focuses on the question of whether it is correct to resect the entire invaginated intestinal block or whether to perform the reduction first and then proceed to the intestinal resection. The reduction of the intussusception before resection could theoretically allow a more limited resection. However, the risk of potential intraluminal seeding of tumor cells during manipulation of the lesion should be considered [65].
The laparoscopy [66] can be safe and effective to allow, in entero-enteric and entero-colic intussusception, the definitive treatment of the occlusion. In the case of colo-colonic intussusception laparoscopy is a valuable diagnostic aid and can facilitate the later processing.
The reconstruction of digestive continuity, especially in ileocecal localizations, is always possible without the need to make protective ostomy [67].

Conclusion

Although intussusceptions occur at all ages, there are major differences in the clinical presentation, diagnostic approach, and management between pediatric and adult populations. Intussusception is remarkably different in these two age groups and it must be approached from a different clinical perspective.

Riassunto

INTRODUZIONE: L'intussuscezione è una condizione comune nei bambini ma rara negli adulti. L'intussuscezione dell'adulto differisce dall'intussuscezione pediatrica sotto vari aspetti, comprese l'eziologia la sintomatologia e la terapia.
METODI: Presentiamo e discutiamo un caso di intussuscezione nel bambino e nell'adulto.
RISULTATI: Nel bambino all'esame radiografico con clistere di bario viene identificato un difetto di riempimento endoluminale riferito all'apice dell'ansa invaginata a livello rettale, con risalita lenta durante l'iniezione progressiva del mezzo di contrasto radiopaco. Al termine della procedura viene documentata la riduzione incompleta del quadro. Il paziente viene sottoposto ad intervento chirurgico d'urgenza dove è documentata la presenza di una invaginazione ileo-ceco-colica. L'intussuscezione è ridotta per "taxis". Nell'adulto è stata eseguita l'emicolectomia destra laparoscopica. Il linfoma di Burkitt a cellule B di alto grado veniva diagnosticato .
DISCUSSIONE: Contrariamente alle intussuscezioni nei bambini, nella popolazione adulta, un'eziologia è dimostrabile nella maggior parte dei casi. Negli adulti la chirurgia è sempre indicata . Nei bambini, invece si cerca di trattare la patologia in maniera conservativa, con l'introduzione per via rettale di mezzo di contrasto radiopaco (aria o bario) a pressione controllata.
CONCLUSIONI: Sebbene le intussuscezioni si verifichino a tutte le età, ci sono grandi differenze nella presentazione clinica, nell'approccio diagnostico e nella gestione tra la popolazione pediatrica e quella adulta. L'intussuscezione è notevolmente diversa in questi due gruppi di età e deve essere clinicamente approcciata in modo differente.

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