Intestinal Intussusception Due to Meckel's Diverticulum

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ABSTRACT

Intestinal intussusception is a common problem in the children, but in adults, it's very unusual. It's responsible for 1-2% of the intestinal obstruction in adults. Adult intussusception etiology differs from that in pediatric patients. Almost all of such cases are due to organic lesions in the adult. Patients commonly presents with nonspecific signs and symptoms similar to a bowel obstruction. Although it is encountered rarely in adults, physicians should be aware of invagination and consider it in each case of acute abdomen because of the wide spectrum of the clinical settings. We report an adult patient operated on acute appendicitis that was eventually diagnosed as ileocecal intussusseption; by the review of the literature.

Key words: *Adults, etiology, intussusception*

Mekkel Divertikülü Nedeni ile İntestinal İnvajinasyon

ÖZET

İntestinal invajinasyon çocuklarda yaygın bir patoloji iken, erişkinlerde bu ender bir durumdur. İnvajinasyon, erişkin yaştaki intestinal obstrüksiyonların sadece %1- 2 sinden sorumludur. Erişkinlerde invajinasyon çocuk olgulardan etyolojik farklılıklar gösterir. Erişkin yaşlarda görülen invajinasyonların neredeyse tamamı organik lezyonlara bağlıdır. Genellikle hastalar bağırsak tıkanıklığını düşündüren belirti ve bulgularla gelirler. Erişkinde görülen invajinasyon nadir görülmesine karşın, geniş bir etyolojik açılımı ve değişken klinik tablosu nedeniyle, özellikle akut karın tablosuyla karşılaşılan her hekim için ayırıcı tanıda göz önünde bulundurulması gereken bir durumdur.Akut apendesit nedeni ile opere edilen erişkin hastada ileoçekal intussussepsiyon saptaması üzerine olgu, literatür eşliğinde gözden geçirildi.

Anahtar kelimeler: *Erişkin, etyoloji, invajinasyon*

INTRODUCTION

Intussusception occurs when one segment of proximal bowel telescopes into the lumen of an adjacent distal segment of bowel, resulting in obstruction and possibly ischemic injury and death of the affected segment of the bowel. The first report of intussusception was made in 1674 by Barbette of Amsterdam (1). Intussusception or ''introsusception'' as it was called then, was in addition detailed in 1789 by John Hunter (2). In 1871 Sir Jonathan Hutchinson was the first to successfully operate on a child with intussusception(3). Adult intussusception occurs infrequently and differs from childhood intussusception in its presentation, etiology, and treatment. The lead points for the intussusceptions are attributable to benign, malignant, or idiopathic causes.

Intussusception remains a rare condition in adults, representing 1% to 3% of bowel obstructions (4,5) and it is a different entity in adults than in children. In small intestine there is a predominance of benign processes and a 90 % of them include polyps, tuberculosis, inverted Meckel's

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diverticulum and adhesions (5,6). It presents with a variety of acute, intermittent, and chronic symptoms, thus making its preoperative diagnosis difficult. In adults, intussusceptions are mostly caused by organic lesions and the majority of these lesions are benign tumours.

CASE

65 years old male patient with abdominal pain, anorexia, nausea, vomiting, abdominal bloating, on his physical examination there were abdominal tenderness, rebound and increased bowel sounds in all quadrants, laboratory findings, except leukocytosis (11.000 mm^3) were normal. Plain abdominal X-rays were first obtained in patient with acute symptoms, which revealed air-fluid levels that suggested intestinal obstruction (Figure 1). In addition to these important findings were noted. Especially in the right lower quadrant abdominal examination including abdominal tenderness was present in common. Palpable mass in the right lower quadrant was present. Patient was operated with the diagnosis of plastrone appendicitis. Mc Burney incision in the abdomen was entered.; appendix was normal. During the operation, patient was found to have an ileocecal intussusception due to Meckel's diverticulum. The intussusception was reduced manually (Figure 3,4) Meckel's diverticulum was resected in the form of wedge resection. Postoperative period was unremarkable and he was discharged in good general condition.

DISCUSSION

Intussusception occurs when one segment of proximal bowel telescopes into the lumen of an adjacent distal segment of bowel, resulting in obstruction and possibly ischemic injury and death of the affected segment of the bowel. Only about 5% of all cases of intussusception are thought to occur in adults (9).

Barium enema, Abdominal computed tomography (CT) scan and colonoscopy are helpful in diagnosis, with barium enema being the most important diagnostic tool. It may show the characteristic "coiled spring" or "spiral sheath" appearance, or a mushroom or crescentic shaped appearance at the level of obstruction.

Pseudokidney and spiral images of intestinal loops are specific CT signs. Endoscopy can be used for definitive diagnosis of intestinal intussusceptions (7). Adult age group is not common (18) and clinically intussusception bowel in children tracked in the style of abdominal cramping pain, bloodly diarrhea, abdominal mass triad in adults is not seen addressed in the tender (8). Symptoms of intussusception in adults are nonspecific and diagnosis is generally made during laparotomy. In 25% of patients, intestinal obstruction, rectal bleeding and a mass in the abdomen is seen(9). Examination of the literature data for intussusception ranged from average age 45-47,5 (10,11). Gender distribution seems to be equally often (12). Our patient was 65 years old male patient.

Unlike the typical pediatric presentation of acute onset, episodic abdominal pain, currant jelly stools, and vomiting, adults often present with a vague history of symptoms that might include diarrhea, constipation, and weight loss. Nausea, vomiting, and abdominal pain are the most common manifestations among adults (4,12). In our patient physical examination there were abdominal tenderness, rebound and increased bowel sounds in all quadrants. Palpable mass in the right lower quadrant was present. Malignancy was more commonly associated with colonic intussusception than with enteric intussusception (12).

Cases of intussusception were evenly distributed among adults of all ages, but the cause of intussusception was more likely to be malignancy among 60- to 80-year-old patients than among 20- to 60-year-old patients (13). In adults one of the most important complications is small bowel obstruction (14). The optimal treatment of adult intussusception is not universally agreed open.

All authors agree that laparotomy is mandatory, in view of the likelihood of identifying a pathologic lesion (15,16). Most authors recommend a segmental small bowel resection of the invaginated part as surgical treatment of the intussusception. Begos et al. (17) 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. (5) 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. In case of intussusception due to Meckel's diverticulum surgical treatment choice should be resection of a small bowel including Meckel's

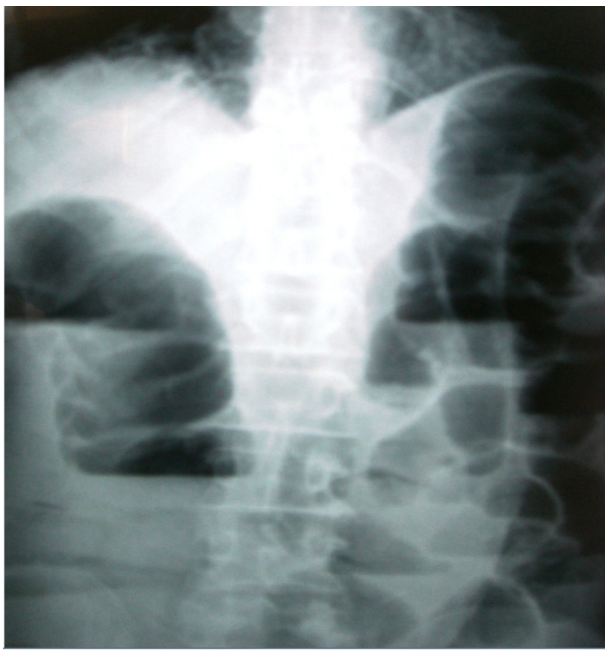

***Figure 1**. Plain abdominal X-rays were first obtained in patient with acute symptoms, which revealed air-fluid levels that suggested intestinal obstruction*

***Figure 2**. ileocecal intussusception due to Meckel's diverticulum*

diverticulum. In the present case, Meckel's diverticulum should be resected together with a small segment of ileum as in literature. In our case ; In cases of early and unstrangulated patients a wedge resection of diverticulum will be appropriate.

REFERENCES

1. *Barbette P. Ouevres Chirurgiques at Anatomiques. Geneva: Francois Miege, 1674.*
2. *Hunter J. On introsusception (read Aug 18, 1789). In: Palmer JF, ed. The works of John Hunter, FRS London. London: Longman, Rees, Orme, Brown,Green, Longman, 1837:587-93.*
3. *Hutchinson J. A successful case of abdominal section for intussusception. Proc R Med Chir Soc 1873;7:195-8.*
4. *Stewardson RH, Bombeck CT, Nyhus LM. Critical operative management of small bowel obstruction. Ann Surg 1978;187:189-93.*
5. *Azar T, Berger DL. Adult intussusception. Ann Surg 1997;226:134-8.*
6. *Daneman A, Myers M, Shuckett B, Alton DJ. Sonographic appearances of inverted Meckel diverticulum with intussusception. Pediatr Radiol 1997;27:295-8.*
7. *Dujardin M, de Beeck BO, Osteaux M. Inverted Meckel's diverticulum as a leading point for ileoileal intussusception in an adult: case report. Abdom Imaging 2002; 27:563-5.*
8. *Orlando R. Intussusception in adults: Bowel obstruction: Differential diagnosis and clinical management. Welch J P(Ed) W B. Saunders Company, Philadelphia, 1990.*
9. *Korkmaz Ö. Yılmaz HG, Taçyıldız İ, Baç B, Çevik S. A review of adult cases with intussusception. Dicle Medicine J (Turkish) 2007;3:182-6.*
10. *Erkan N, Haciyanli M, Yildirim M, Sayhan H, Vardar E, Polat AF. Intussusception in adults: an unusual and challenging condition for surgeons. Int J Colorectal Dis 2005; 20:452-6.*
11. *Goh BK, Quah HM, Chow PK, et al. Predictive factors of malignancy in adults with intussusception. World J Surg 2006;30:1300-4.*
12. *Warshauer DM, Lee JK. Adult intussusception detected at CT or MR imaging: clinical-imaging correlation. Radiology 1999;212:853-60.*
13. *Huang BY, Warshauer DM. Adult intussusception: diagnosis and clinical relevance. Radiol Clin North Am 2003;41:1137-51.*
14. *Fa-Si-Oen PR, Roumen RM, Croiset van Uchelen FA. Complications and management of Meckel's diverticulum--a review. Eur J Surg 1999;165:674-8.*
15. *Barussaud M, Regenet N, Briennon X,et al. Clinical spectrum and surgical approach of adult İntussusceptions: a multicentric study Int J Colorectal Dis 2006;21:834-39.*
16. *Marinis A, Yiallourou A, Samanides L, et al. İntussusceptionof the bowel in adults: a review. World J Gastroenterol 2009;15:407-11.*
17. *Begos DG, Sandor A, Modlin IM. The diagnosis and management of adult intussusception. Am J Surg 1997;73:88-94.*
18. *Montiel-Jarquín AJ, García-Ramírez UN, Reyes-Páramo P, Blanca-Díaz J, Ruiz-León B. The young man with intestinal invagination. Rev Med Inst Mex Seguro Soc 2008;46:681-4.*