



An Unusual Cause of Obstruction of the Appendiceal Lumen: Tricholuminal Appendicitis in a Child

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Abstract

Introduction: Acute appendicitis (AA) is the most prevalent cause of acute abdomen. Luminal obstruction caused by faecoliths play a role in the pathophysiology of most cases of appendicitis. Many other materials can cause obstruction of the appendiceal lumen including swallowed foreign objects. However, most of the time they pass through the gastrointestinal tract spontaneously without causing any complication, and they very rarely obstruct appendiceal lumen leading to AA.

Case Presentation: A 5-year-old girl was admitted to our hospital with complaint of right lower quadrant pain lasting for 12 hours. She was also complaining of subfebrile fever, anorexia, and nausea. On physical examination rebound tenderness on the right lower abdominal quadrant was felt, but any mass lesion could not be palpated. Abdominal ultrasonographic examination findings were consistent with the diagnosis of AA. Transumbilical single-port laparoscopic appendectomy (TUSPLA) was performed. Herein, a clinical case of AA due to solitary hair fibre in the lumen of appendix is reported.

Conclusion: Timely diagnosis of tricholuminal appendicitis which can present itself with very diverse clinical manifestations especially during childhood has utmost importance in the prevention of potential complications.

Keywords: Acute appendicitis, Hair fibre, Foreign body

Introduction

Acute appendicitis (AA) is the most widespread cause of acute abdomen which elicits a systemic inflammatory reaction (1). Still it is the most frequently performed surgical emergency procedure in the whole world (2). Pathophysiology of AA is related to luminal obstruction (3). Faecoliths are the most common cause of luminal obstruction present in the majority of cases. Its classical symptoms include in order of decreasing frequency vomiting (96%), fever (85%), and right lower quadrant abdominal pain (81%) (4). Though diagnosis is generally made based on clinical symptoms, because of its atypical presentation especially in children aged <4 years incidence of perforated appendicitis is relatively high (5). In cases with delayed diagnosis, complications as appendicovesical fistula (6), liver abscess, abdominal or retroperitoneal abscess, diffuse peritonitis, phlegmon, intestinal obstruction, sepsis, necrotizing fasciitis can develop (7) when compared with adults appendiceal perforation is more prevalent in childhood because of delayed diagnosis (8). Ingestion of inedible and indigestible objects is very common, especially in children. But, the presence of a foreign body in the appendix, acting as a cause of an inflammatory process, is a very rare event.

Herein we describe a case of AA caused by ingestion of solitary hair fibre, which impacted into the appendiceal lumen, and comparatively evaluated our approach in these

cases in the light of the existing literature on the subject.

Case Presentation

A 5-year-old girl was admitted to the emergency service of Cengiz Gokcek Obstetrics and Children's hospital with complaint of right lower quadrant pain lasting for 12 hours, but localized on the periumbilical region for the last 2 hours. She was also complaining of subfebrile fever, anorexia, and nausea without vomiting. Her family indicated that she had similar complaints of milder severity a few months ago which resolved spontaneously. On physical examination rebound tenderness on the right lower abdominal quadrant was felt, but any mass lesion could not be palpated. Routine biochemical analysis revealed WBC:12.8 X10³/μL (4.5-11), and CRP 0.8 mg/dl (<0.6). Abdominal ultrasonographic examination findings were consistent with the diagnosis of AA of the patient whose abdominal pain regressed during monitorization. In consideration of these clinical, biochemical, and radiological findings, transumbilical single-port laparoscopic appendectomy (TUSPLA) was performed. The appendix was clearly congested, and a mass of hair found in the appendix which was determined to be the cause of the obstruction (Figure 1). The patient recovered uneventfully in the postoperative period. Histopathological evaluation confirmed the diagnosis of AA. Her family history did not reveal any incident of trichotillomania, and her physical

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Figure 1. Gross Appearance of the Appendix With Intraluminal Solitary Hair Fibre.

examination did not disclose hair loss. Pediatric psychiatrists could not detect any psychotic disorder.

Discussion

Ingestion of foreign bodies is a common phenomenon in clinical practice, especially among children and in adults with mental retardation. In most cases, fragments of fish or poultry bone, dental prostheses or lead fragments (present in slaughtered poultry products) are detected. In general, their passage through the gastrointestinal tract does not cause any symptoms.

Impaction of a foreign body in the appendicular lumen as an etiologic agent of appendicitis is a very rare event. The impaction of foreign bodies in the appendix is an exceptional event, and AA caused by a foreign body has a prevalence of 0.0005% (9). The first appendectomy was performed by Claudius Amyand in an 11-year-old boy in the year 1736. A pin had been detected in the appendiceal lumen of this patient. Up to now interesting foreign objects in the appendiceal lumen which caused acute inflammation have been reported. However only a few case reports on obstructive appendicitis caused by trichobezoars have been cited in the literature so far (10). Trichobezoars are usually encountered in psychotic young women who have the habit of plucking hairs which is termed as trichotillomania or mentally retarded children. Our case was a girl without history of trichophagia, but AA developed secondary to a hair fibre in her appendiceal lumen. Our patient also had not any mental or psychiatric disorder.

The latency time between the ingestion of the foreign body and the onset of symptoms can be measured in years (11). Its clinical presentation varies from abdominal pain to vomiting, and diarrhea. Sometimes patient gives an anamnesis soft ingestion of a foreign object. On physical examination soft ingestion of the time abdominal tenderness is detected. White cell counts and C reactive protein levels may increase in parallel with the severity of inflammation. Radiopaque foreign objects may be easily visualized on the right lower abdominal quadrant. However in cases with difficult diagnosis, conservative approaches at baseline

may predispose to the development of complications. Even if they lead an asymptomatic course appendicular foreign objects require appendectomy. Delay in diagnosis can result in serious complications. Early surgical intervention improves outcomes. Most of the patients who experience classical symptoms, and signs of classical appendicitis undergo appendectomy. Although right lower abdominal quadrant pain of minimal severity of our case regressed spontaneously, symptoms and signs observed during her monitorization were consistent with the diagnosis of AA which made us to decide on laparoscopic appendectomy. Her postoperative course was uneventful.

Solitary hair fibre can obstruct appendiceal lumen leading to AA. Because of its potentially asymptomatic course, in undiagnosed, and also conservatively treated cases development of persistent, and recurrent appendicitis should not be overlooked.

Ethical issues

Written informed consent was obtained from the patient's legal guardian(s) for publication of this case report and any accompanying images.

Conflict of interests

None to be declared.

References

1. Peranteau WH, Smink DS. Appendix, Meckel's and other small bowel diverticula. In: Zinner MJ, Ashley W. Stanley, eds. *Maingot's Abdominal Operation*. 12th ed. New York: McGraw-Hill; 2013:623-40.
2. Chandrasegaram MD, Rothwell LA, An EI, Miller RJ. Pathologies of the appendix: a 10-year review of 4670 appendectomy specimens. *ANZ J Surg*. 2012;82:844-847. doi: 10.1111/j.1445-2197.2012.06185
3. Chen YG, Chang HM, Chen YL, Cheng YC, Hsu CH. Perforated acute appendicitis resulting from appendiceal villous adenoma presenting with small bowel obstruction: a case report. *BMC Gastroenterol*. 2011; 11:35. doi: 10.1186/1471-230X-11-35
4. Pepper VK, Stanfill AB, Pearl RH. Diagnosis and management of pediatric appendicitis, intussusception, and Meckel diverticulum. *Surg Clin North Am*. 2012;92:505-526. doi: 10.1016/j.suc.2012.03.011
5. Aarabi S, Sidhwa F, Riehle KJ, Chen Q, Mooney DP. Pediatric appendicitis in New England: epidemiology and outcomes. *J Pediatr Surg*. 2011;46(6):1106-1114. doi: 10.1016/j.jpedsurg.2011.03.039
6. Kim JS. Acute abdominal pain in children. *Pediatr Gastroenterol Hepatol Nutr*. 2013;16:219-224. doi: 10.5223/pghn.2013.16.4.219
7. Takeda M, Higashi Y, Shoji T, Hiraide T, Maruo H. Necrotizing fasciitis caused by a primary appendicocutaneous fistula. *Surg Today*. 2012;42:781-784. doi: 10.1007/s00595-012-0140
8. Cheong LH, Emil S. Outcomes of pediatric appendicitis: an international comparison of the

- United States and Canada. *JAMA Surg.* 2014;149:50-55. doi: 10.1016/j.jpedsurg.2014.09.004
9. Sar S, Mahawar KK, Marsh R, Small PK. Recurrent appendicitis following successful conservative management of an appendicular mass in association with a foreign body: a case report. *Cases J.* 2009;2:7776. doi: 10.4076/1757-1626-2-7776
 10. Kochar AS. Acute appendicitis associated with a trichobezoar. *JAMA.* 1984;252:1681-1682.
 11. Selfa Munoz A, Palacios Perez A, Martinez Tirado P, Barrientos Delgado A. An unusual cause of acute appendicitis. *Med Clin.* 2012;138:15. doi: 10.1016/j.medcli.2011.06.016
 12. Brunetti E, Kern P, Vuitton DA; Writing Panel for the WHO-IWGE. Expert consensus for the diagnosis and treatment of cystic and alveolar echinococcosis in humans. *Acta Trop.* 2010;114(1):1-16.

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