Case Report

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Stone ingestion causing obstructed inguinal hernia with perforation

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ABSTRACT

We report a rare case of obstructed right inguinal hernia caused by ingested stones. A 2 year-old boy from Northern Thailand was transferred to our hospital with low-grade fever, vomiting, and acute painful swelling at his right hemiscrotum for one day. The physical examination revealed marked enlargement with inflammation in his right hemiscrotum. The radiological findings showed huge number of stones in the right hemiscrotum. At surgery, the content of hernia sac was ascending colon, which was full of hard masses. With the help of additional lower transverse abdominal incision, the obstructed segment was successfully reduced and revealed a perforation. Most of the stones were removed through the perforation. The colonic wound was primarily repaired and both incisions were primarily closed. Although he developed post-operative wound infection, the boy had uneventfully recovered. The psychological exploration in this "stone pica" revealed no other psychological disorders.

Key words: Inguinal hernia, pica, stone ingestion

INTRODUCTION

Acute scrotum, an acute painful condition of the scrotum, is a common genitourinary problem encountered at an emergency room.[1,2] The condition can be caused by obstructed inguinal hernia. The incarcerated contents found in the hernia sac usually are small intestine and omentum. Rarely, the incarceration is caused by ingested foreign body.[3,4] In an only reported case of stone ingestion, the patient suffered from alimentary problem.[5] Interestingly, we reported an extreme case of massive ingestion of stones that resulted in obstructed inguinal hernia in a child.

CASE REPORT

A 2 year-old boy from the Northern part of Thailand was transferred to our institution with a low-grade fever, nausea, and vomiting, and acute painful swelling at his right scrotum for one day. The physical examination revealed moderate tenderness at lower abdominal quadrant and marked enlargement with inflammation of the scrotum [Figure 1]. The radiological findings showed huge number of stones in the right scrotum and a small number of them in colonic silhouette [Figure 1]. Subsequently, he had an emergency operation.

At surgery, a right transverse inguinal incision was performed. The content of hernia sac was ascending colon, which was full of hard masses. Intestinal reduction could not be achieved only by the inguinal approach, possibly because of the stones inside. With the help of additional lower transverse abdominal incision,



Figure 1: The boy's scrotum was markedly swelling and inflamed. Radiographic finding revealed that the affected scrotum contained a large number of stones and multiple stones in the colon

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the obstructed segment was successfully reduced and also revealed a perforation. Most of the stones were removed through this vent [Figure 2]. Herniotomy was performed as usual. The colonic wou nd was trimmed and primarily repaired. Thorough peritoneal and groin irrigation with warm saline were carried out. Primary wound closure of both incisions with absorbable suture materials completed the operation. Post-operatively, intravenous gentamicin (5 mg/kg/day) once a day and metronidazole (10 mg/kg/dose) three times a day was given. Wound infection at abdominal site was shown on day 5. It was successfully managed by simple drainage and saline irrigation at marginal incision and daily dressing. Despite the post-operative wound infection, the boy had uneventfully recovered and was discharged on day 10 [Figure 2].

The patient was referred to a psychiatrist for investigation. The psychological exploration in this "stone pica" phenomenon revealed no other psychological disorders. And also the boy was consulted to paediatricians for seeking a commonly associated iron deficiency. The evaluation revealed the presence of iron deficiency (haemoglobin of 8.3 g/dL, hematocrit of 25%, mean corpuscular volume of 65 fl, red blood cell distribution width of 18% and serum iron level of 38 μg/dl). The child received ferrous sulfate syrup 5 mg/kg/day for 6 months. In addition, advice to the family to contact more closely to the child was provided. On one month follow-up, an abdominal radiography showed no further abnormal opacity.

DISCUSSION

Acute scrotum, a common genitourinary problem in children, is characterised by acute painful swelling of the scrotum. This circumstance accounts for about 0.5% of total patients presenting at an emergency department.[1,2] Among these patients, such condition as incarcerated inguinal hernia with intestinal obstruction or strangulation requires urgent surgical intervention to prevent morbidity or unwanted sequelae. The small intestine and omentum are usually the common eviscerated contents that caused inguinal incarceration. Rarely, the incarcerated inguinal hernia is caused by ingestion of foreign bodies. The only reports of such cases were accidental swallowing of foreign bodies into the alimentary tract and cause irreducible inguinal hernia.[3,4] However, the current report presented with incarcerated inguinal hernia was caused by intentional ingestion of the number of stones.



Figure 2: the ascending colon with its perforation through, which the stones was removed and the appearance of the child post-operative day 10

The ingestion of a massive amount of stones had been reported in a school-aged female child.[5] She suffered from acute abdominal pain following the stones ingestion. Unlike our patient, he developed not only abdominal pain but also acute scrotum. In the circumstance, the boy had been prepared for emergency operation rather than hernia reduction in the emergency room because of the presence of huge scrotal enlargement, marked inflammation of the scrotum and numerous stones found on non-routine abdominal radiography. The presence of colonic perforation had made us easily decide removing the stones through the colonic vent instead of milking them down to the rectum. However, the operative field contamination by the stones resulted in abdominal wound infection.

Following the surgical treatment, the psychological investigations revealed that pica disorder was ruled out. The most likely cause of the bizarre behaviour and appetite for non-nutritive substances in this patient seemed to be caused by iron deficiency anaemia.[6-8] In addition, the patient's family life-style showing the boy frequently left playing alone while his parents went farming was also the supportive cause. Therefore, treatment of the iron deficiency by enhancing the patient's serum iron level and paying more attention to the child are of great importance to preclude a future recurrence of the non-food cravings and the serious consequences.

In conclusion, stone ingestion could cause irreducible inguinal hernia with intestinal obstruction and perforation, an emergency surgical condition, which required surgical intervention and further medical and psychological evaluation.

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