Introduction

Internal hernia is an important and underdiagnosed condition of acute abdomen. Paraduodenal hernias are the most common type of internal hernias, accounting for over one-half of reported cases.[1,6] They may remain silent or give rise to chronic digestive complaints or acute bowel obstruction. One-thirds of paraduodenal hernias occur on the right side.[2] Radiographically, right paraduodenal hernias present as an ovoid conglomeration of jejunal loops in the right upper quadrant, often displacing the adjacent organs. Since paraduodenal hernia is very rare, therefore doctors consider it infrequently, and the exact incidence of this disease is unknown.[2-4] Hence, we reported two cases with right side paraduodenal hernia.

Case report 1

A 45-year-old woman was admitted to our emergency department (ED) because of intermittent colicky periumbilical pain, there was no signs of pain radiation. On physical examination, the abdomen showed signs of peritoneal irritation. There were neither abnormal laboratory finding, nor remarkable plain radiograph finding. Multislice-CT revealed a cluster of small-bowel loops encased in a sac in the right flank (Fig. 1). Therefore, a preoperative diagnosis of right paraduodenalhernia was suspected. Laparotomy was done subsequently. It was found that about one-third of

the small intestine encapsulated in a peritoneal sac, which was located in the hepatic flexure mesocolon, entering through an opening just inferior to the third part of the duodenum (Fig. 2). Bowel was easily reduced from the sac and the hernial orifice was repaired, the patient was discharged uneventually.

Case report 2

A 15-year-old normally developed boy presented with intermittent abdominal cramping pain. The pain localized to the umbilicus and did not radiate, bilious vomiting was noted. There were no relieving or instigating factors. He denied any diarrhea, fever, constipation, or melena. He has had similar episodes during the past two years, and resolved spontaneously. On physical examination, the abdomen showed signs of peritoneal irritation. Laboratory values and plain abdominal radiograph were also unremarkable. Multislice-CT revealed a cluster of small bowel loops. (Fig. 3) Laparotomy was done under the impression of paraduodenal hernia subsequently. It was found that all small intestine was encapsulated in a peritoneal sac,which was located to the right of ascending colon, entering through an opening just inferior to the second part of the duodenum (Fig. 4). Bowel was easily reduced from the sac and the hernial orifice was closed. Recovery was uneventful.

Discussion

The internal hernia is an uncommon disorder and its incidence rate was reported about 1% to 2%.[1] About 50% reported internal herniation in the English literature were of paraduodenal hernia type. Male gender has higher, about three times, occurrence rate than female.[2-4] The symptoms and signs may include abdominal pain or gastrointestinal upsets and are usually non-specific. In some rare cases, it may result in small bowel obstruction with the incidence rate about 0.2%to 0.9%.[4] Furthermore, bowel may be infarct if strangulation occurs.

Establishing a correct diagnosis of internal herniation with physical examination alone is very difficult. The plain films usually showed dilated small bowel loops which only suggestive to secondary bowel obstruction. The application of computed tomography (CT) [7,8,9] scans played an important role in diagnosing internal herniation. Generally, internal herniation often presented as alternative position of bowel, obstruction or even infarction. Furthermore, the diagnosis of internal herniation is postulated paraduodenal hernias could be considered in the presence of retrogastric location and well defined encapsulation. Though the definite diagnosis of paraduodenal hernia was often established intra-operatively, the delay in diagnosing such condition might result in the small bowel strangulation and infarction. As a result, the importance of early diagnosis of paraduodenal hernia cannot be over-emphasized.

In the previous reports, there were about seventy-five percent of paraduodenal hernia on left side and twenty-five percent on right side.[3] The left side paraduodenal hernia are resulted from the small bowel herniation into the Landzert fossa, which makes a mass like lesion that displaces stomach superiorly and T-colon inferiorly.[5] On the other hand, right side paraduodenal hernia was relatively rare and displaces A-colon anterolaterally.

As in our cases, in addition to previous reported findings, there were same bowel hypoperfusion masses with similar position noted in the CT scan in an adult and a child. In the first case, the CT scan revealed clustered small bowel loops located laterally and inferiorly to the 2nd portion of the duodenum. Left displacement of right colon and abnormal course of mesenteric vessels were noted. There was mild poor enhancement of herniated bowel wall. This patient received emergent laparotomy because of persistent peritoneal irritation. The diagnosis of right paraduodenal hernia was confirmed during operation. There were same findings noted in the second patient, CT images revealed dilatation of small intestine loops with suspicious volvulus or internal hernia. Under the impression of bowel obstruction and suspected bowel infarction, the emergency laparotomies were performed. After surgical

interventions[10], the diagnosis of right side paraduodenal hernia was established.

Summary

Because of difficulty in diagnosing paraduodenal hernia clinically, the tomography scan became an useful tool before surgical intervention. In addition to the alternative position of small bowel and adjacent organ displacement, the presentation of abnormal or hypo-perfusion bowel mass might be helpful in establishing firm diagnosis. Besides, this finding seems similar in both adult and child. A high index of suspicion should be aroused and treatment should not be delayed on encountering similar tomographic images. However, further studies and investigations for more cases are required.

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Legend

Figure 1: (a) Transverse CT scan through the upper abdomen shows herniated small bowel loops in the right upper quadrant and within a saclike structure. (b) Transverse CT scan at a lower level reveals component of the jejunal vessels radiating inside the hernial sac.

Figure 2: The peritoneal pocket with collapsed small bowel is located between third portion of the duodenum and ascending mesocolon.

Figure 3: (a) Transverse CT scan through the upper abdomen shows herniated small bowel loops in the right upper quadrant. (b) Coronal oblique reconstruction showing the hernial sac filled with small bowel loops and located to the right of the ascending colon.

Figure 4: (a) (b) All small bowel was located in sac with much clear ascites. (c) The inlet of sac was just below 2-3 portion of duodenum. (d) The outlet of sac was near the ileocaecal valve.