stones following discharge. A possible mechanism for the repeated formation of stones in our patient could be dystrophic calcification on the surface of the resected prostate.

References

1. Fox M. The natural history and significance of stone formation in the prostate gland. J Urol 1963;89 : 716-27.
2. Eykyn S, Bultitude MI, Mayo ME, Lloyd-Davies RW. Prostatic calculi as a source of recurrent bacteriuria in the male. Br J Urol 1974;46 : 527-32.
3. Blandy J. Transurethral resection of the prostate gland. In: Operative Urology 2nd Ed Chap 10 pp 150-67. Oxford, Blackwell Scientific Publications 1987.

Chilaiditi's Syndrome Presenting as Acute Abdomen

A N Hisham, M.S.
A Gunn, FRCS
A A Jamil, FRCS
Department of Surgery, Kuala Terengganu Hospital, Terengganu

Summary

A case of Chilaiditi's syndrome in a middle-aged man presenting as acute abdomen is reported.

Key Words: Chilaiditi's syndrome, Small bowel volvulus, Intestinal obstruction, Acute abdomen

Introduction

Hepatodiaphragmatic interposition of the intestine is a rare anomaly with a reported general incidence of 0.02 and 0.22 per cent[1]. It was first described by Beclere in 1899. Nevertheless this clinical entity has been named after Chilaiditi after he reported 3 patients in 1911[2].

Chilaiditi's syndrome is often believed to be of no clinical significance and is generally an asymptomatic condition. However, over the recent years, several studies have addressed the potential source of various abdominal problems which may inevitably require surgical intervention[1,3].

We report a case of Chilaiditi's syndrome presenting as acute abdomen in a middle-aged man.

Case Report

A 48-year-old Malay man was admitted with one week

history of generalized abdominal pain, nausea and vomiting. He had earlier resorted to traditional treatment after which his symptoms deteriorated. Physical examination on admission showed that he was in septicaemic shock with a blood pressure of 80/60 mmHg. His abdomen was tense with generalized guarding and no bowel sounds. The abdominal radiograph showed a step-ladder pattern of the small bowel indicating intestinal obstruction (Fig. 1). The chest radiograph revealed air filled shadow of the intestine in the right subphrenic space and extraluminal air (Fig. 2). Chilaiditi's syndrome with perforation of intra-abdominal viscus was diagnosed.

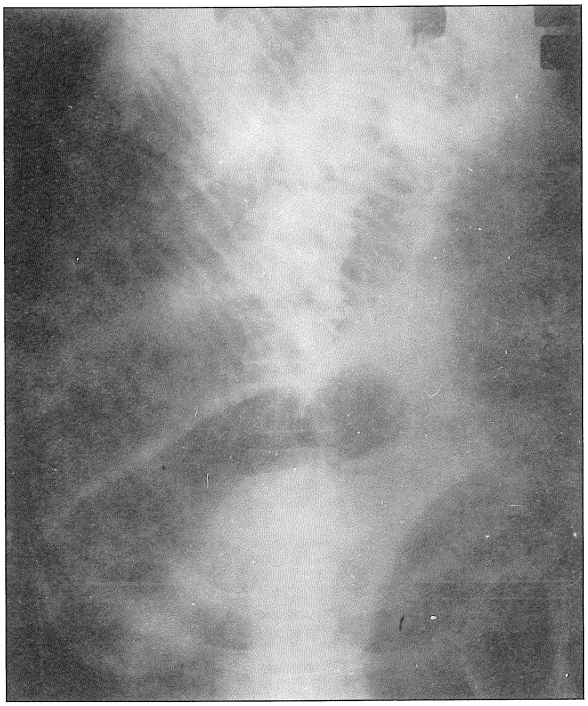

Fig. 1: Abdominal radiograph showing a step-ladder pattern of obstructed small bowel.

He underwent emergency laparotomy after resuscitation. Intra-operative findings revealed a small bowel volvulus interposed between the right diaphram and the anterior surface of the liver. The proximal bowel was grossly dilated and the closed loop of obstructed bowel was perforated in the right subphrenic paracolic gutter with a collection of 3 litres of faeculent fluid. The perforated site together with

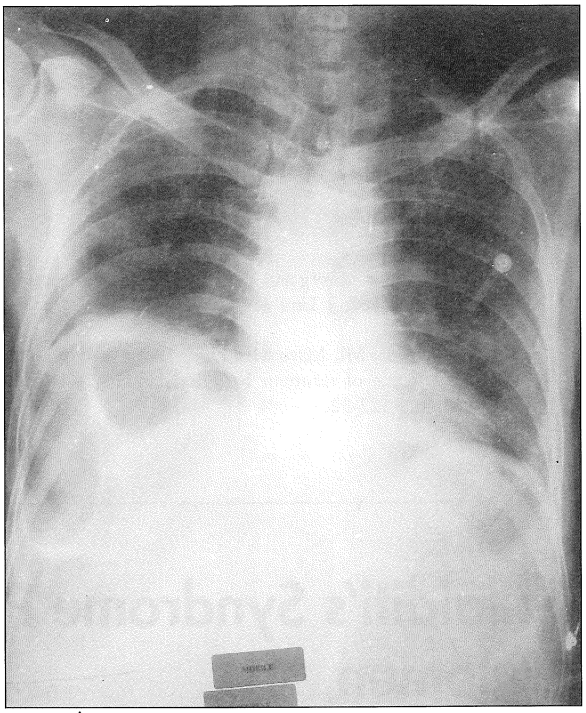

Fig. 2: Chest radiograph showing bowel shadow in the right subphrenic space with extraluminal air.

60 cm of non-viable ileum was resected and intestinal continuity restored by an end to end single layer sero-muscular anastomosis. A second look laparotomy was performed on the third postoperative day. A small anastomotic leak was discovered and the small bowel ends were exteriorized. He was monitored in intensive care unit and the postoperative recovery was uneventful.

Discussion

Chilaiditi's syndrome is an unusual radiological finding occurring in both sexes and the incidence seems to increase with age occurring in about one of 50,000 adults[2,3]. It is described as an interposition of the intestine which protrudes between the right anterior subphrenic space of the liver and the diaphram. The presentation is most often asymptomatic. Nevertheless, in absence of physical findings in association with abdominal pain, closer attention and observation is necessary.

Recent reports of Chilaiditi's syndrome have revealed potential source of various abdominal problems which may lead to long delays in diagnosis[3]. Chest radiography is diagnostic and this syndrome has frequently been associated with cirrhotic liver, emphysema and diaphragmatic eventration[2]. It has been suggested that several possible factors such as enlarged lower thoracic outlet or with coexisting widening of subphrenic space attributes for the intrusion and interposition of intestine. In addition, the correlation between Chilaiditi's syndrome and gastro-intestinal volvolus was postulated due to the disturbance in pressure balance between the thorax and the abdomen[3]. Volvulus of the colon, small bowel and stomach in association with Chilaiditi's syndrome has been described[3]. Other associated abdominal problems such as internal hernias, acute intestinal obstruction and subphrenic appendicitis have also been reported[3].

The mainstay of treatment in asymptomatic cases is close observation. In complicated cases, surgical correction is recommended. In addition, fixation of the liver has been recommended to occlude the enlarged subphrenic space[3]. However, no fixation was attempted in this patient. In conclusion, this report draws attention to Chilaiditi's syndrome as an unusual presentation of acute abdomen requiring emergency operation.

Acknowledgement

The authors wish to thank the Director-General, Ministry of Health, Malaysia for granting permission to publish this article.

References

1. Bishop CCR, Whitehead SM, and Jackson BT. Misdiagnosis of the Chilaiditi's syndrome. BMJ 1987;295 : 1655.

2. Vessal K and Borhanmanesh F. Hepatodiaphramatic interposition of the intestine (Chilaiditi's syndrome). Clin Radiol 1976;27 : 113.

3. Orangio GR, Fazio VW, Winkelman E. The Chilaiditi's syndrome and associated volvolus of the transverse colon. An indication for surgical therapy. Dis. Colon Rectum 1986;29 : 653.