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## CASE REPORT

# Subphrenic Abscess Ruptured Through Pericardium

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## INTRODUCTION

Subphrenic abscesses are known to follow abdominal surgery. The manifestations of a subphrenic abscess range from a severe acute illness to an insidious chronic process characterized by intermittent fever, weight loss, anemia, and nonspecific symptoms. The known complications of subphrenic abscess are lower lobe lung collapse or development of a pleural effusion. We report a rare complication in which subphrenic abscess ruptured into pericardial cavity.

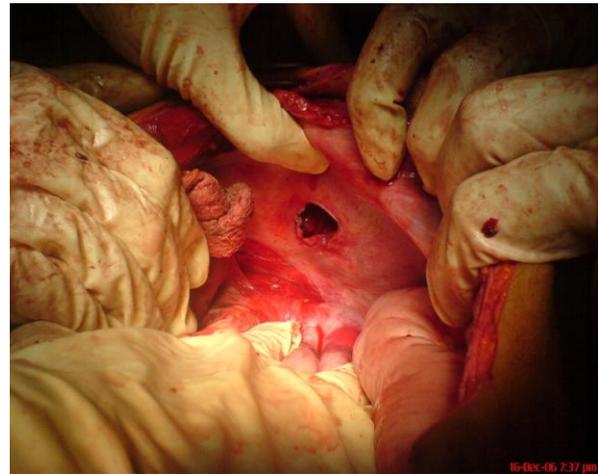
## CASE REPORT

A 13 year old boy presented to surgical department Mayo Hospital Lahore, Pakistan with the complaints of pain in right upper quadrant of abdomen and intermittent pyrexia (more at night), associated with rigors and chills for 5 days. Patient had a history of previous abdominal surgery eighteen months ago for blunt abdominal trauma when his intestinal perforation was repaired. Since then he experienced off and on abdominal pain and occasional fever for which he used to take symptomatic treatment. On admission his examination revealed pulse rate of 90 per minute, BP 120/70 mm, respiratory rate of 20 per minute and his temperature was 99.6 F. He was pale but not jaundiced. Abdominal examination revealed a tender area in right upper quadrant of abdomen. Provisional diagnosis of subphrenic abscess was made which was confirmed on abdominal ultrasound. Size of the abscess was 13 x 14 cm. intravenous antibiotics were started and ultrasound guided aspiration of the abscess was scheduled on next available slot.

Next morning patient complained of central chest pain which was associated with respiratory distress. The findings were thought to be due to the abscess pushing on the diaphragm and causing dyspnoea and discomfort. Within 12 hours patient got severely dyspnoic and his respiratory rate raised to 38/ minute while his pulse and blood pressure were within normal range. His JVP was normal. An ECG was obtained which showed ST segment elevation in I, II, avf and all the chest leads. Urgent Echocardiography revealed pericardial collection and a pig-tail catheter was inserted into pericardial cavity after actively aspirating 500 ml of thick yellow

brown pus. An ultrasound guided aspiration of subphrenic abscess was also performed and 1500 ml brown colour pus was aspirated and drain placed. This followed rapid improvement in overall condition of the patient. Pus culture report showed growth of pseudomonas and E Coli. Despite adequate intravenous antibiotics pus continued to pour out in drains and 5 days later his exploration was planned. Laprotomy revealed 1 liter creamy pus in right subphrenic space and a hole in the diaphragm communicating with the pericardial cavity through which pus oozed out with every heart beat ( Figure 1). Cardiothoracic surgeon was called who performed mediastonotomy and pericardiostomy and drained pus. Pericardial cavity was washed and a corrugated drain placed there. He recovered well without any further complication.

Fig. 1



## DISCUSSION

Subphrenic abscess is a localized collection of pus between the colon and diaphragm on left side of the abdomen and the liver and diaphragm on the right side of the abdomen. It is a recognized complication of abdominal surgery and is adequately managed by aspiration and antibiotics. Rupture of a subphrenic abscess into pericardial cavity is a rare but serious complication. We report this case to highlight this rare but potentially lethal complication of postoperative subphrenic abscess.

The pathophysiological mechanism of pericardial collection associated with subphrenic abscess is unknown<sup>1</sup>. Pleural effusion is associated with subphrenic abscess either on right or left side<sup>2</sup>. These pleural exudates may be caused by changes in the capillary permeability or lymph flow in the diaphragm induced by local effects of inflammatory products<sup>2,3,4,5</sup>. We hypothesize a similar mechanism for the pericardial change, plus these inflammatory products might have resulted in breaching the diaphragm and made a hole in the pericardium as was seen in this case. The proximity of subphrenic inflammatory process to the pericardium overlying the left diaphragm may be key factor in development of pericardial collection<sup>1</sup>. With relatively little liver mass adherent to the left subphrenic surface, abscess there have exposure to area over which pericardium lies<sup>6</sup>.

Subphrenic abscess may cause pyrexia of unknown origin, abdominal pain, hiccups, chest pain, sepsis and generalized peritonitis but subphrenic abscess complicating pericardium is a very rare and life threatening condition which requires costly and invasive management. Early recognition of pericarditis in a patient of subphrenic abscess may be life saving. Evidence of pericarditis should be aggressively sought by bedside examination, ECG, echocardiography, USG or CT scan. Conversely,

subphrenic abscess should be sought when pleuropericardial exudates are otherwise unexplained<sup>1</sup>.

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