

Case Report

Post traumatic subphrenic abscess: A rare phenomenon

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Abstract

Sub-phrenic abscess is a common phenomenon encountered in surgical practice due to various causes, but very rarely a blunt trauma injury can also cause this, with no obvious infective foci. We report a case of 12 yr old female patient, presented with complain of pain abdomen after sustaining a blunt trauma. Major surgery was avoided using simple method of pig tail catheterisation.

Keywords: post-trauma, sub-phrenic, abscess cavity

1. Introduction

Sub-phrenic abscess is a disease characterized by an accumulation of infected fluid between the diaphragm, the liver and the spleen.¹ This abscess develops after surgical operations like bowel perforation or splenectomy. Presents with cough, increase respiratory rate with shallow respiration, diminished or absent breath sound, hiccups, dullness in percussion, tenderness over the 8th-11th ribs, fever, chills, anorexia and shoulder tip pain on affected site. Lack of treatment or misdiagnosis could quickly lead to sepsis, septic shock, and death.² It is also associated with peritonitis.³

Subphrenic infection occurring in the hidden borderland between thorax and abdomen is difficult to diagnose and to treat. Mistakes in management may be calamitous for the patient. The problems are enhanced because the clinical picture is often obscured by the causal condition and by previous operative intervention. The condition, moreover, is one with which few surgeons have had extensive experience.

The supposed rarity of subphrenic abscess and the extreme difficulty of its diagnosis caused it to be practically unknown till Barlow described it in 1845. The first reported case, however, was that of Veit in 1779 in which the abscess was situated between the diaphragm and the right lobe of liver. Von Volkman in 1879 was the first to demonstrate that an abscess below the diaphragm could be treated surgically.

Synonyms: Sub-phrenic abscess, Hypophrenic abscess, Pyo-pneumothorax subphrenicus, suppurative peri-hepatitis, Peri-gastric abscess, Supra-hepatic abscess.

2. Case Report

We report a case of 12 yr old female patient, presented with complain of pain abdomen after sustaining a blunt trauma while playing. Patient also had 2 to 3 episodes of melaena after injury while she was in hospital. X-ray abdomen standing was done, which showed few dilated bowel loops, and no other significant finding. USG abdomen and pelvis suggested haemorrhagic collection in Morrison's pouch and haemoperitoneum. Patient was managed conservatively and was discharged after 5 days. Patient was totally asymptomatic.

After 1 month patient again came with severe pain and tenderness in right hypochondrium and high grade fever. Xray (fig 1) and USG (fig 3) was done and it showed sub-phrenic abscess. Instead of going for a major surgery, a USG assisted pig tail catheter was inserted in abscess cavity and kept in situ for 10 days. Regular USG follow ups and cavitogram (Fig 2) was done to monitor resolving of cavity. In very rare cases, post-traumatic haemorrhage may not get absorbed but may lead to abscess formation.

3. Result

Major surgery was avoided using simple method of pig tail catheterisation. Patient had dramatic relieve of symptoms immediately after USG guided procedure.



FIGURE 1 SHOWING ABSCESS ON RIGHT SIDE IN SUB DIAPHRAGMATIC REIGON

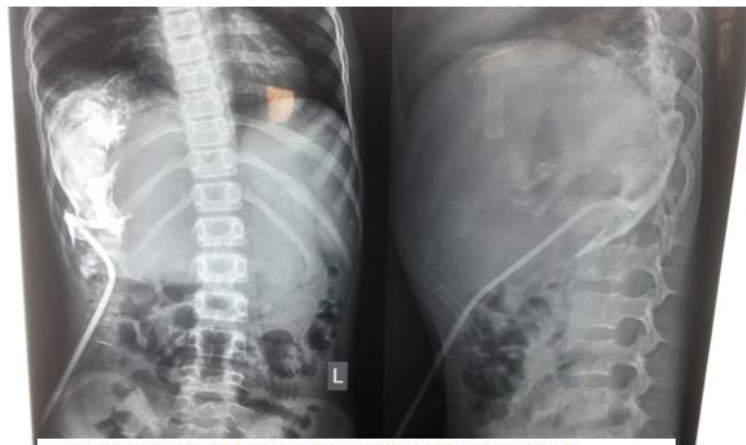


FIGURE 2 SHOWING CAVITOGRAM WITH PIG TAIL CATHETER IN SITU



FIGURE 3 SHOWING ABSCESS CAVITY

4. Discussion

In the post-surgical and/or post-traumatic patient, sub-phrenic abscesses are rare and most commonly diagnosed by sonography and CT. In their classic treatise, Ochsner and Graves⁴ stressed that drainage should be performed via an extraperitoneal and extrapleural approach. Early radiologically guided procedures were performed according to this surgical dictum and also employed an extrapleural and/or extraperitoneal approach to the subphrenic space^{3,6,7,8}. Percutaneous drainage was performed via a posterior angled approach through the back with the patient positioned prone. More recently, others⁹ have stressed that a transperitoneal approach can be performed safely if pleural contamination is avoided. This makes drainage through the retroperitoneum unnecessary. Initially, sonography was used most often for diagnosis, but was combined with fluoroscopy for catheter placement. Fluoroscopy was helpful in determining the exact location of the pleura and led to an understanding of the anatomy of the subphrenic space.

More recently, sonography has been used not only for diagnosis but also for monitoring catheter placement. During the same time, the use of CT for diagnosis has increased from 3 to 29%, and for guiding the actual catheter insertion from 3 to 13%. Placement of the catheter is such that it enters below the seventh rib anteriorly or 10th rib laterally assures avoidance of contamination of the pleural space. The catheter can then be angled in a caudad to cephalad manner until the collection is encountered. Most often in sub-phrenic collections, the lateral aspect of the liver/spleen is separated from the intercostal muscles and the abdominal wall, and a catheter can be easily directed into the collection. The most important technical consideration is avoiding contamination of the pleura and lung. However, in patients with a sub-phrenic collection, the inferior extent of the pleural reflection may be obliterated because of an inflammatory reaction from the adjacent sub-phrenic abscess. Consequently, transgression through this space may be safe. However, it is difficult to decide prospectively which patients will tolerate an intercostal approach so that complications may be avoided.

In most cases, a low sub-costal approach is safe, easy, and practical. But in patients in whom a sub-costal angulation is not possible, an intercostal puncture provides a viable, though more risky, alternative. Other explanations for the greater duration of drainage must be considered. For example, after the contents of an intra-hepatic liver abscess have been removed, normal hepatic parenchyma surrounding the collection collapses and granulates around the catheter quite readily. Well-vascularised normal hepatic parenchyma will accelerate the healing process. Sub-phrenic collections, however, occupy "potential" intraperitoneal spaces that may not heal as readily as vascularised spaces. Therefore, prolonged, sustained catheter drainage of infected material is required for total evacuation of the infected material. Although there may be improvement in the patient's condition because the purulent material has been removed, continuous drainage may be required for several weeks. As in cases of abscess drainage, catheter removal should be determined by the quantity and duration of drainage. Failure of percutaneous drainage to completely cure sub-phrenic abscesses is predictable and depends on the presence of multiple non-contiguous collections or the cause of the collection.

5. Conclusion

Rare cases of post traumatic abscess can be managed with conservative or minimal invasive methods, thus avoiding a large burden of laprotomy.

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