International Surgery Journal
Garg A et al. Int Surg J. 2024 Dec;11(12):2165-2167
http://www.ijsurgery.com
pISSN 2349-3305 | eISSN 2349-2902

DOI: https://dx.doi.org/10.18203/2349-2902.isj20243568

Case Report

A case report of perforated gall bladder in an adolescent female: a diagnostic dilemma successfully managed by laparoscopy

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Received: 04 October 2024
Accepted: 07 November 2024

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ABSTRACT

Gall bladder perforations are rare and usually seen in elderly age group having comorbidities like diabetes and are associated with severe morbidity and mortality. Gall bladder perforation is much rarer in younger patients and thus leads to diagnostic dilemma. These cases generally require exploratory laparotomy and are associated with high incidences of SSI. With advent of minimal invasive procedure laparoscopic cholecystectomy is an option for management with prompt and accurate diagnosis. We present a case of 19-year-old female with anaemia having severe pain in abdomen and fever at presentation. She was diagnosed as gall bladder perforation on ultrasound which was confirmed by CECT Abdomen. Patient was managed by laparoscopic subtotal cholecystectomy with uneventful post-operative period. Gall bladder perforations are rarely seen in young adults posing diagnostic dilemma. Delay in diagnosis can lead to increased morbidity and mortality. In patients of cholecystitis with non-resolving fever and peritonitis generalised or localised should raise a high suspicion of perforation and should be promptly diagnosed with CECT Abdomen. Although conventionally exploratory laparotomy is done for gall bladder perforation with peritonitis, diagnostic laparoscopy with cholecystectomy is a feasible option in selected patients. In young adults with non-resolving acute abdomen with calculous cholecystitis high degree of suspicion of Gall Bladder perforation should be kept. Laparoscopic cholecystectomy is a feasible option with minimal morbidity and higher cosmesis in young adults.

Keywords: Acute cholecystitis, Gall bladder perforation, Laparoscopic cholecystectomy, Young adult

INTRODUCTION

Acute cholecystitis which can be calculous or acalculous is a very common cause of acute abdominal pain in India, especially prevalent in the Gangetic basin of North India.[1] Acute cholecystitis can be managed conservatively whereas Gall Bladder perforation is a surgical emergency. Gall bladder perforation is an uncommon cause of acute abdomen especially in young adults. Niemer Type 2 being the most common.[2] Perforation of gall bladder is often a consequence of obstruction by stone at the neck of gall bladder with subsequent raised pressure in the gall bladder. Gall Bladder perforation is most commonly seen at the fundus owing to its supply by cystic artery which is an end artery.[3,4] The diagnosis is often delayed due to non-specific clinical presentation and rarity of the disease with inconclusive routine investigation. CECT Abdomen helps in early diagnosis and decision making hence decreasing morbidity and mortality.

CASE REPORT

A 19-year-old female presented with complaints of pain in right upper abdomen for 5 days and fever for 2 days associated with one episode of vomiting. There was no

history of jaundice and no history of similar complaint in the past. She had history of blood transfusion 6 years back for severe anaemia. At presentation she had tachycardia along with tenderness and guarding in the right upper quadrant. No lump was palpable. No splenomegaly and hepatomegaly were present. Blood investigations revealed anaemia, raised total leucocyte count. Initial ultrasound was suggestive of acute calculous cholecystitis with multiple calculi in lumen of gall bladder along with 15 mm calculus in neck.

Diagnosis of acute cholecystitis with anaemia was made and patient was managed conservatively with intravenous antibiotics and analgesics. She was also worked up for anaemia and macrocytic anaemia due to B12 deficiency was identified. During the course of management, the pain and fever did not resolve for 48 hours and on repeat ultrasonography suspicious rent in gall bladder wall with minimal perihepatic free fluid was present. CECT abdomen confirmed gall bladder perforation of size 1.4×1.8 cm in fundus of gall bladder with adjacent collection of size 4.3×0.9 cm (Figure 1). Patient was taken for diagnostic laparoscopy and proceed.

Intraoperatively dense adhesions were present between liver, gall bladder, omentum and anterior abdominal wall. Pericholecystic collection was aspirated. A rent of 1 cm was present over fundus of gall bladder with surrounding necrosis. around 100 cc of pus was drained from fundus of Gall bladder (Figure 2). Posterior wall of gall bladder was also necrosed and sloughed off. Calots triangle was frozen. Two stones of around 1 cm were retrieved from gall bladder (Figure 3). Retrograde dissection of Gall Bladder from liver bed was done and subtotal cholecystectomy was performed. Gall bladder stump was closed with non-absorbable suture. A subhepatic abdominal drain was inserted. Post operative period was uneventful with normal TLC and LFTs. Drain output was nil and was removed on day 4 (Figure 4). No SSI of port sites occurred.

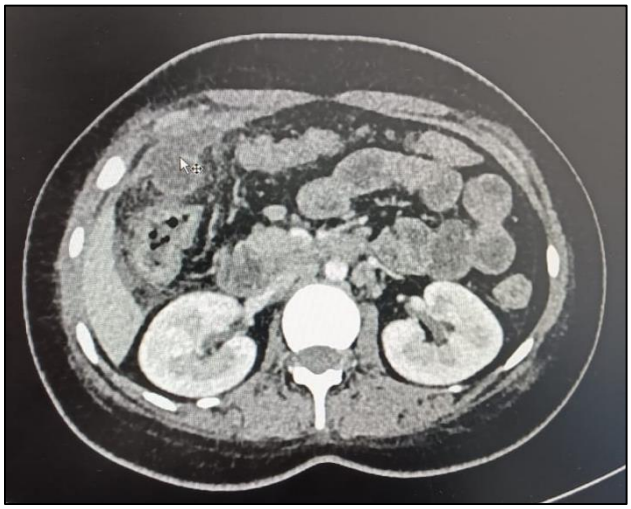

Figure 1: CECT image- arrow showing perforated gall bladder with pericholecystic pus collection.

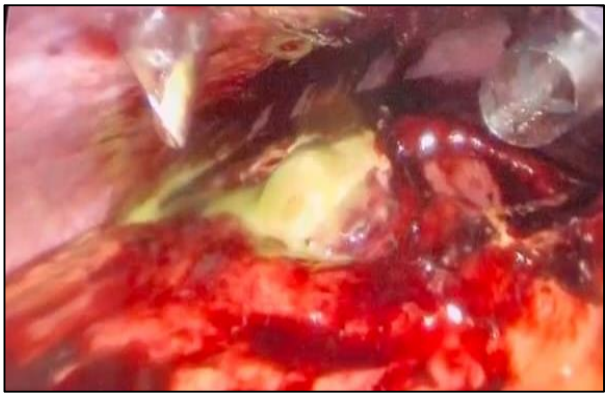

Figure 2: Laparoscopic view of perforated gall bladder with pus collection.

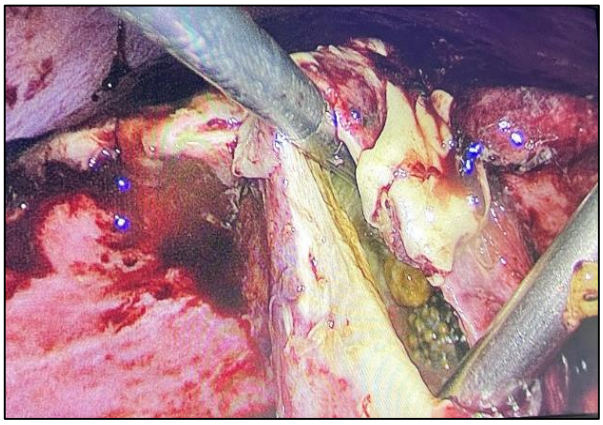

Figure 3: Large stones visible in gall bladder lumen.

Figure 4: Post operative day 4 after drain removal.

DISCUSSION

Acute calculous cholecystitis is the most common cause of gall bladder perforation.[3,5] However, it is extremely rare in young population and mostly present in elderly population with co morbidities. The most commonly affected part of the gall bladder is fundus owing to its supply by cystic artery which is an end artery.

According to Niemer, there are three types of gall bladder perforation; type 1 is acute perforation leading to generalized peritonitis, type 2 is subacute, localized with resultant pericholecystic fluid accumulation with abscess formation, and type 3 is more chronic, followed by a cholecystoenteric fistula formation.[6] Type 2 being the most common.

Acute cholecystitis with non-resolving signs and symptoms in a patient should prompt to investigate further for gall bladder perforation. As gall bladder perforation is associated with high mortality rates (12-42%).[5,7] CECT abdomen is the investigation of choice for diagnosis of gall bladder perforation and it shows 'classic hole sign' more frequently than ultrasonography.[3] Young patients presenting with anaemia should also be evaluated for any underlying hemoglobinopathies making patient more prone for gall stone formation. In our case patient had macrocytic anaemia due to vitamin B12 deficiency.

Although gall bladder perforation is conventionally done by exploratory laparotomy, diagnostic laparoscopy with cholecystectomy is also a feasible option. Laparoscopic complete cholecystectomy may not be feasible in all cases of gall bladder perforation due to frozen calots and dense adhesions with increased chances of extrahepatic biliary injuries. Partial or subtotal cholecystectomy is also an acceptable option. Subtotal cholecystectomy removes a portion of the gallbladder when the structures of the Calot's triangle cannot be identified, dissection between the gallbladder wall and liver bed cannot be accomplished, or the critical view of safety cannot be achieved.[8] Laparoscopic cholecystectomy decreases morbidity, length of hospital stays and reduces the chances of SSI.

CONCLUSION

In young adults a high suspicion of gall bladder perforation is required when symptoms worsen or do not resolve during conservative management of acute cholecystitis. Prompt investigation and diagnosis is necessary for early management with resultant decreased morbidity and mortality. Diagnostic laparoscopy should be done proceeded by laparoscopic cholecystectomy in expert hands as it has decreased chances of SSI, reduces the hospital stay and is cosmetically superior having great psychological impact in young adults.

Funding: No funding sources
Conflict of interest: None declared
Ethical approval: The study was approved by the Institutional Ethics Committee

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Cite this article as: Garg A, Pandey S, Pusuluri R, Mohammad BH, Manju, Rishu. A case report of perforated gall bladder in an adolescent female-a diagnostic dilemma successfully managed by laparoscopy. Int Surg J 2024;11:2165-7.