

## Case Report

# Gall stone abscess, a delayed complication following laparoscopic cholecystectomy

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### ABSTRACT

In the current era of minimally invasive surgeries, laparoscopic cholecystectomy being the popular surgery for the symptomatic cholelithiasis and complications pertaining to these minimally invasive surgeries, here we report a complication related to gall stone spillage after 4 months of surgery in 80-year male patient presenting as abdomen lump. The risk of stone spillage and complications related to it are more than open cholecystectomy. Careful dissection, extraction and complete retrieval of all the spilled stones can avoid these complications and hence complication related to stone spillage can be potentially avoided, and intra-operative documentation of the gall stone spillage can help to think for early diagnosis and treatment of the complications.

**Keywords:** Gall stone, Stone spillage, Laparoscopic cholecystectomy

### INTRODUCTION

Gall stone abscess is rare complication following laparoscopic cholecystectomy due to spillage of gall stones. Most common site being abdominal wall followed by intra-abdominal cavity usually in the sub-hepatic space or retroperitoneum.<sup>1</sup> We report a case presented with abdomen lump and pain abdomen following 4 months after laparoscopic cholecystectomy, on evaluation with imaging which showed gallstone abscess formed in the intra-abdominal cavity communicating with abdominal wall sheath in midline and was managed by surgical intervention.

### CASE REPORT

A 80-year male presented with abdomen lump in the umbilical region and pain abdomen, dull-aching type in the umbilical region, 4 months after laparoscopic cholecystectomy for chronic cholecystitis. Associated with constipation, however no h/o fever, GI hemorrhage,

loose stools and no h/o weight loss or loss of appetite. Blood parameters leukocyte count, ESR, CRP, LFT, amylase, lipase and viral serology were within normal limits. On examination solitary, non-tender 4×5 cm, hard lump with illdefined borders and moving with respiration and the lump was prominent on leg raising test. No pallor, no lymphadenopathy, no organomegaly and no evidence of free fluid.

CECT abdomen revealed 1.6×1.4 cm, triangular, hyperdense lesion (+985 HU) seen along the anterior abdominal wall, with focal peritoneal thickening and surrounding fat stranding and no obvious communication noted with the bowel loops and Gall bladder not visualized and cholecystectomy clips were in-situ. Hence diagnosis of gallstone abscess following laparoscopic cholecystectomy was made.

Planned for laparotomy and the findings were stony hard thickened supra-umbilical sheath, 5-10 ml purulent material noted in the anterior abdominal wall, large

inflammatory lump 10×8 cm fixed to the sheath, anteriorly and posteriorly to the transverse colon and partly to the transverse mesocolon, 1.5×1.5 cm pyramidal shaped bile pigmented stone impacted in the inflammatory lump and removed in toto, no obvious fistulous communication noted between the transverse colon and inflammatory lump.

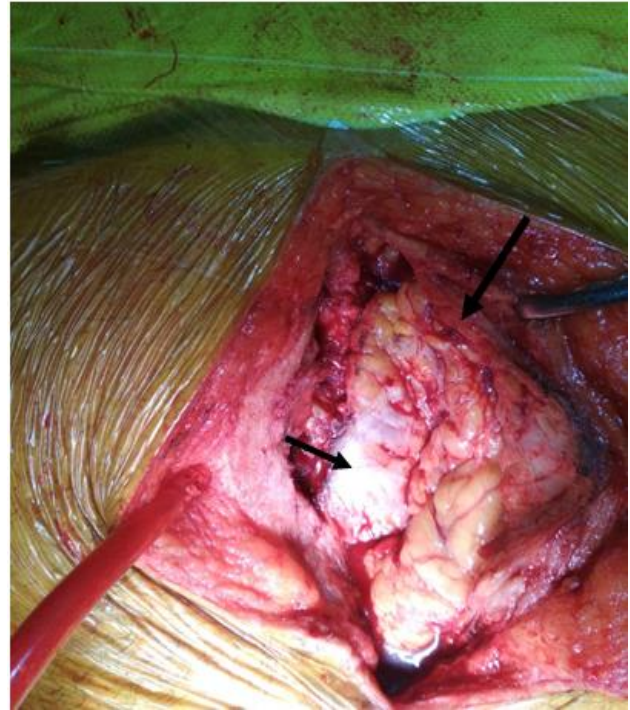


**Figure 1: Lump in the umbilical region of size 4-5 cm, port scar at the umbilicus (arrow).**

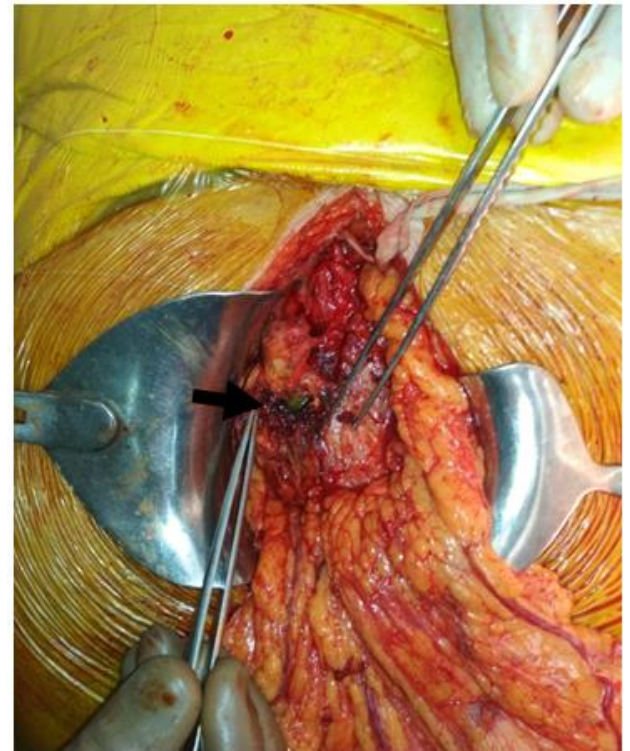


**Figure 2: Triangular hyperdense calculi along the anterior abdominal.**

The resected inflammatory lump and aspirated pus culture was sterile on culture, histology was suggestive of inflammation.



**Figure 3: Inflammatory lump adhered to anterior abdominal wall (right arrow), hard thickened sheath (left arrow).**



**Figure 4: Bile pigmented calculi in the inflammatory lump (arrow).**

Post-operative period was uneventful and ambulated from day-1, started oral liquids on day-1, and discharged on day-5 in stable condition.



**Figure 5: Pyramidal shaped bile pigmented calculi retrieved in toto.**

## DISCUSSION

Nowadays laparoscopic cholecystectomy is the gold standard treatment for the symptomatic gallstone disease due to minimally invasive techniques and less morbidity, shorter hospital stay, early return to normal activities compared to open cholecystectomy.<sup>2</sup> However the complications like injury to biliary system, blood vessels, GIT, risk of gall bladder perforation and spillage of bile and gallstones is higher with a reported incidence of 6-40% cases of laparoscopic cholecystectomy.<sup>3-5</sup>

### *Risk of perforation of the gall bladder*

Gall bladder perforation during laparoscopic cholecystectomy is at higher risk in cases of acute cholecystitis (friable tissue), dense adhesions, tense distended gallbladder.<sup>6</sup>

### *During dissection*

Gall stone spillage during dissection of the gall bladder from liver bed / from the surrounding structures. Careful dissection in the correct planes between the gall bladder and the surrounding structures and aspiration of the gall bladder full of bile before dissection to decrease the tension on the wall which facilitate dissection and avoids perforation and hence spillage.<sup>7</sup>

### *During extraction*

During extraction of the gall bladder through port sites spillage can be avoided by retrieving of the gall bladder

through endobag.<sup>8-10</sup> In our case the gallstone abscess lump was formed along the anterior abdominal wall near umbilicus, hence mostly the gallstone was spilled during the stone retrieval.

In case of spillage every attempt to be made to retrieve all the stones and the peritoneal cavity should be carefully irrigated with saline and use of intra-abdominal bags to retrieve the lost stones is recommended.<sup>11</sup> Conversion to open surgery only to retrieve the stones is not recommended unless unable to remove laparoscopically.<sup>12</sup>

### *Complication from gallstone spillage*

The complications related to the gallstone spillage are most commonly abdominal wall abscess, intra-abdominal abscess and rare complications like lung abscess, retroperitoneal abscess, peritonitis, colo-cutaneous fistula, infertility, dyspareunia, septicemia etc.<sup>13</sup>

The combination of pneumoperitoneum and peritoneal irrigation disperses the calculi with in the peritoneal cavity and may be responsible for distant complications. The complications are reported to present after months to years after surgery.<sup>14,15</sup>

The significant risk factors for these complications are acute cholecystitis, spillage of pigmented stones, perihepatic localization of the spilled stones, multiple stones (>15) or size (>1.5 cm) and old age.<sup>10,12,16,17</sup> Hence the risk of gallstone spillage and possible complications associated with it should be informed to the patient prior to the procedure. And documentation of the intraoperative gallstone spillage alerts the clinician in the future to think the possibility of stones causing the problems and early diagnosis. In our case gallstone abscess in the intra-abdominal cavity extending to along the abdominal wall and the possible risk factors in our case are spillage of pigmented stones and old age.

### *Management of complications related to the spilled stones*

Surgical history along with imaging studies like USG, CECT abdomen are helpful to make diagnosis of gallstone abscess.<sup>12</sup> The treatment approach varies with the type of complication with aim to eradicate the source of the infection, in case of abdominal wall abscess with stone near the port site can be dealt with local drainage of pus and evacuation of stones percutaneously by small incision or by minimally invasive technique. Intra-abdominal abscess can be dealt with the percutaneous drainage. The surgical options are considered if large stones need to be evacuated, inaccessible intra-abdominal collections, cases of colo-cutaneous fistula, colo-vesical fistula etc. In our case hard lump, large inflammatory intra-abdominal lump extending along the anterior the abdominal wall with ill-defined planes with the large

bowel loops and large stone 1.5×1.5 cm made us to consider for surgical management.

## CONCLUSION

Complications related to gallstone spillage following laparoscopic cholecystectomy are a well-known phenomenon, presenting months to years after the procedure. Careful dissection and gall bladder retrieval in endo-bag reduces the complication rate. Patients should be informed and also intra-operative gallstone spillage documentation alerts the clinician to think the possibility of complication related to the lost stones helps in early diagnosis and management. No need of open conversion for only gall bladder perforation and stone spillage.

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## REFERENCES

- Zehetner J, Shamiyeh A, Wayand W. Lost gallstones in laparoscopic cholecystectomy: all possible complications. *Am J Surg.* 2007;193:73–8.
- Kalid M, Rashid M. Gallstone abscess: a delayed complication of spilled gallstone after laparoscopic cholecystectomy. *Emerg Radiol.* 2009;16:227–9.
- Schol FPG, Go PMNYH, Gouma DJ. Risk factors for bile duct injury in laparoscopic cholecystectomy: analysis of 49 cases. *Br J Surg.* 1994;81:1786–8.
- Deziel DJ, Millikan KW, Economou SG, Doolas A, Ko ST, Airan MC. Complications of laparoscopic cholecystectomy; a national survey of 4292 hospitals and an analysis of 77,604 cases. *Am J Surg.* 1993;165:9–14.
- Offiah C, Robinson P, Keeling-Roberts CS. The one that got away. *Br J Radiol.* 2002;75:393–4.
- Schafer M, Suter C, Klaiber C, Wehrli H, Frei E, Krahenbuhl L. Spilled gallstones after laparoscopic cholecystectomy: a relevant problem? A retrospective analysis of 10,174 laparoscopic cholecystectomies. *Surgical Endoscopy.* 1998;12(4):305–9.
- Patterson EJ, Nagy AG. Don't cry over spilled stones? Complications of gallstones spilled during laparoscopic cholecystectomy: case report and literature review. *Can J Surg.* 1997;40:300-4.
- Brockmann JG, Kocher T, Senninger NJ, Schurmann GM. Complications due to gallstones lost during laparoscopic cholecystectomy: an analysis of incidence, clinical course, and management. *Surgical Endoscopy Other Interventional Techniques.* 2002;16(8):226–1232.
- Woodfield JC, Rodgers M, Windsor JA. Peritoneal gallstones following laparoscopic cholecystectomy: incidence, complications, and management. *Surgical Endoscopy Other Interventional Techniques.* 2004;18(8):1200–7.
- Sathesh-Kumar T, Saklani AP, Vinayagam R, Blackett RL. Spilled gall stones during laparoscopic cholecystectomy: a review of the literature. *Postgraduate Med J.* 2004;80(940):77–9.
- Memon MA, Jenkins HJ Jr, Fitzgibbons RJ Jr. Spontaneous erosion of a lost intra-abdominal gallstone through the back eight months following laparoscopic cholecystectomy. *J Society Laparoscopic Surgeons.* 1997;1(2):153–7.
- Memon MA, Deeik RK, Maffi TR, Fitzgibbons RJ Jr. The outcome of un-retrieved gallstones in the peritoneal cavity during laparoscopic cholecystectomy: a prospective analysis. *Surgical Endoscopy.* 1999;13(9):848–57.
- Zehetner J, Shamiyeh A, Wayand W. Lost gallstones in laparoscopic cholecystectomy: all possible complications. *Am J Surg.* 2007;193:73-8.
- Morrin M, Kruskal J, Saldinger P, Kane R. Radiological features of complication arising from dropped gallstone in laparoscopic cholecystectomy patients. *Am J Roentgenol.* 2000;174:1441–5.
- Van Brunt PH, Lanzafame RJ. Subhepatic inflammatory mass after laparoscopic cholecystectomy: a delayed complication of spilled gallstone. *Arch Surg.* 1994;129:882–93.
- Hanna SJ, Barakat O, Watkin S. Chole-lithoptysis: an unusual delayed complication of laparoscopic cholecystectomy. *J Hepato-Biliary-Pancreatic Surg.* 2004;11(3):190–2.
- Chopra P, Killorn P, Mehran RJ. Chole-lithoptysis and pleural empyema. *Annals Thoracic Surg.* 1999;68(1):254–5.

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