Missed Gallstone in the abdominal wall; case report

Peer review status:
Yes

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Article ID: WMC004703
Article Type: Case Report
Submitted on: 26-Sep-2014, 08:29:03 PM GMT  Published on: 27-Sep-2014, 04:27:52 AM GMT
Article URL: http://www.webmedcentral.com/article_view/4703
Subject Categories: GENERAL SURGERY
Keywords: Spilled gallstone, Laproscopic cholecystectomy, Complications, Abcess, Hernia, Gallbladder perforation

How to cite the article: Othman M, Aloufi S, Althobaiti F, Othman B, Al Adwani M. Missed Gallstone in the abdominal wall; case report. WebmedCentral GENERAL SURGERY 2014;5(9):WMC004703

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Source(s) of Funding:
None

Competing Interests:
None known
WebmedCentral Peer Reviewed: Yes

Additional Files:

Figure 1
Figure 2
Missed Gallstone in the abdominal wall; case report

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Abstract

Laparoscopic cholecystectomy is the gold standard method for the treatment of gallstone disease. Spillage of gallstones during the procedure is a common incidence, ranging from 8% to 40%. These gallstones can contribute to associated abscess formation in remote locations to the site of the gallbladder fossa. This is a report of a 46 year old diabetic male complained of painful epigastric abdominal mass at the site of previous incision of laparoscopic cholecystectomy with local signs of inflammation. Diagnosed at first as strangulated incisional hernia and upon laparoscopic exploration it was found to be an anterior abdominal wall abscess of a missed gallstone.

Background

The beginning of the era of laparoscopic cholecystectomy (LC) started on September 12, 1985 in Germany by Prof Erich Muhe [1, 2]. Laparoscopic cholecystectomy has been established as the gold standard method for the treatment of gallstone disease due to its advantages, including less postoperative pain, shortened hospitalization, faster recovery, and improved cosmetics [2, 3]. This commonly performed and well-established minimally invasive surgery is still associated with adverse effects and complications. The most feared complication of LC is injury to the common bile duct [3-5]. The initial high occurrence rate (1.9%) of this type of injury during the early era of laparoscopic surgery has since decreased and stabilized to 0.5% [5, 6]. Surgeons take precautions to avoid and detect this type of injury by using the “critical view” technique and intraoperative cholangiography [4, 7]. Other common complications include retained common bile duct stones, bile leaks, and superficial wound infections [4, 5, 7]. The complications that occur more often with laparoscopic cholecystectomy are perforations of the gallbladder during laparoscopic surgery and spillage of gallstones [1, 4-6]. Though common in incidence, ranging from 8% to 40% [2-4]. In rare instances, postoperative residual gallstones can contribute to associated abscess formation [1, 2]. The formation of abscesses occurs in remote locations to the site of the gallbladder fossa, making diagnosis and causation difficult to establish after the index operation [1, 2, 6]. Most of these abscesses have been reported to manifest during the first 4 to 9 months after the initial operation, whereas only a few can be detected as late as 15 years after LC [4, 5, 7]. Spilled gallstones are often located near the liver, in Morison’s pouch or the gallbladder fossa and in the pelvis [1, 4, 5, 7]. On CT, gall stones with high calcium content appear as one or more calcified high-attenuation foci [3, 6]. Wide window settings are beneficial in discerning calcified stones [3, 6, 7]. Pure cholesterol stones and those with low calcium content may go undetected. On MRI, pigmented gall stones may appear as hyperintense on T1 weighted images, whereas other stones are hypointense on both T1 and T2 weighted images. Lack of contrast enhancement is useful for making the correct diagnosis[5, 6]. On ultrasound, these stones appear as mobile hyrophrechoic foci casting marked posterior acoustic shadowing [5].

Case report

A 64 years old male patient known patient of diabetes mellitus on medication. Presented to the emergency department complaining of painful epigastric abdominal mass for two days at the site of laparoscopic cholecystectomy scar. Associated with local skin changes and fever. No history of vomiting or constipation. He had laparoscopic cholecystectomy one year ago for chronic calculus cholecystitis which complicated by gallbladder perforation and stones spillage. Patient noticed this mass five month ago with intermittent swelling. On examination he was afebrile and his vital signs within normal. The abdomen was not distended and scars of laparoscopic cholecystectomy seen. In the epigastric area, at the site of the surgical scar there is a mass measured 2 x 4 cm associated with redness, hotness and stretched skin which is tender with positive fluctuation test and negative cough impulse. Abdomen was soft and lax with marked tenderness over the epigastric area. Bowel sounds were normal.

Blood investigations were normal apart from leukocytosis (12.1×10³ U/l) and elevated CRP (10.4 mg/l). Ultrasound done for the mass and reported a heterogeneous and hyperechoic area with herniated intestine. Strangulated Incisional hernia was the top differential
diagnosis regarding the long history of this mass at the site of the incision, added to that, signs of skin changes and ultrasound findings. Other differential diagnosis was considered, but was less likely including; abdominal wall hematoma which less likely to be the diagnosis with no predisposing factor like vigorous coughing, use of anticoagulant or recent trauma. Lipoma is rarely to be painful or associated with inflammatory changes. Epigastric hernia is rarely to present as strangulated hernia. Spontaneous abdominal wall infection is infrequent in general population but not uncommon in diabetic patients. Complication of spilled gall stones was not considered.

Next day the patient went for laparoscopic exploration. Operative finding were a defect seen at epigastric area and the content was omentum which reduced. At the same area there was a hard small mass which excised for investigation and upon excision a small stone found inside which was taken out (Figure 1 and Figure 2). The transillumination test was negative due to the presence of liquefied purulent material (devitalized tissue and fluid collection) so suspension of abscess was there. Then the defect was closed by intra-corporeal and extra-corporeal stitch was about to attempt but on needle insertion to the skin (at the site of swelling) pus come out and swap was taken. So, skin incision and drainage was done followed by washing and packing. Postoperatively, the patient recovered well and received antibiotic course and discharge from the hospital. The bacterial culture of the swap show heavy growth of Enterobacter Cloacae. The histopathology show fat necrosis with chronic inflammation. The extracted stone was of 3x4 mm pigmented gallstone.

**Discussion**

Complications arising from spillage of gall stones during laparoscopic cholecystectomy are extremely rare [3, 4]. Although lost gallstones were initially considered innocuous, it is now recognized, that, they can be a small but significant source of postoperative morbidity 0.1 - 6% [1, 2]. They can present months or years after the cholecystectomy with septic complications not necessarily located in the right upper quadrant [3-5]. The diagnosis is often delayed due to the unusual site of the abscess formation coupled with the lack of awareness of stone spillage during previous cholecystectomy [1, 2, 4]. Only a high index of clinical suspicion may lead to correct identification [4-6]. The presentation of complications will vary from patient to patient, and depend largely on the site and type of complication suffered. Recognized symptoms include abdominal pain, fever, abdominal masses, bowel obstruction and the presence of a sinus infection or fistula [2, 3]. In some cases, the presenting mass has been diagnosed as malignancy until further investigations have disproved this. In most instances, the diagnosis is made retrospectively, or after visualization of the stones on imaging and revisiting the patient’s surgical history [4-6].

In this case, the presence of hernia and abscess at the same site make the diagnosis challengeable. A five month history of epigastric swelling at the incision site suggest the diagnosis of hernia and the inflammatory changes caused by abscess give us a false impression as strangulated hernia supported by misleading finding of herniated intestine in ultrasound.

**Conclusions**

This reported case shows that, every effort should be done to retrieved spilled gallstones. Radiological investigation can be misleading, added to that, the importance of having high index of suspicion for complications of spilled gallstones in order to early recognise and treat them appropriately.

**References**

Illustrations

Illustration 1

Figure 1
Illustration 2

Figure 2
Reviews

Review 1

Review Title: Missed Gallstones in the abdominal wall: caes report

Posted by Dr. Prasan K Hota on 29 Sep 2014 08:37:57 AM GMT

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Rating: 7

Comment: It is a good paper for publication. It gives a clear warning that the gall bladder should be retrieved through a bag and the 10mm port should be closed to avoid the port hernia and infection at the port site.

Competing interests: Nil

Invited by the author to make a review on this article? : Yes

Experience and credentials in the specific area of science: I have seen a number of cases with retained gallstones in the abdominal wall as well as port hernias and managed them. However retained stones with port hernia is new for me.

Publications in the same or a related area of science: No

References: No

How to cite: Hota P. Missed Gallstones in the abdominal wall: caes report [Review of the article ‘Missed Gallstone in the abdominal wall; case report ‘ by Othman M]. WebmedCentral General Surgery 1970;5(9):WMCRW003114
Review 2

Review Title: **Title is acceptable.**

Posted by Dr. KETAN R VAGHOLKAR on 27 Sep 2014 05:45:34 AM GMT

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Rating: 6

Comment: NA

Competing interests: None

Invited by the author to make a review on this article? : Yes

Experience and credentials in the specific area of science: NA

Publications in the same or a related area of science: No

References: None

How to cite: VAGHOLKAR K. Title is acceptable.[Review of the article 'Missed Gallstone in the abdominal wall; case report ' by Othman M]. WebmedCentral General Surgery 1970;5(9):WMCRW003113