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CASE REPORT PEER REVIEWED | OPEN ACCESS

A rare presentation of giant gallbladder

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ABSTRACT

In common practice enlarged gallbladders are rarely encountered and there are a minimal number of cases reported worldwide. Most of these encounters have been associated with malignancy which is contrary to our finding. We describe a case of chronic cholecystitis which had the rare association of a giant gallbladder which was treated by surgical resection without any pathological associations. The review also describes the different grading of cholecystitis and various management approaches which are applied in common practice. Due to the fact that cases of giant gallbladders are a rare encounter, documenting this case will provide further analysis for future studies.

Keywords: Biliary, Cholecystitis, Gallbladder, Malignancy

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INTRODUCTION

Previously reported cases of giant gallbladder have revealed the association with tumors or gallstones [1, 2]. A minimal amount of giant gallbladder cases has been reported (Table 1). We present a case of a giant gallbladder in a patient with recurrent hospital admissions due to chronic biliary disease.

Table 1: Reported cases of giant gallbladders.

Authors	Gender	Age	Size (cm)
Panaro et al. [10]	Female	17	43×21×20
Grosberg [11, 12]	Female	95	14×5.5
Hsu et al. [5]	Female	87	16.4×13.6×7.8
Zong et al. [2]	Female	55	24×17
Our case	Male	86	17×10

CASE REPORT

An 87-year-old male with no significant past medical history was admitted twice for biliary disease. The patient's first admission consisted of a diagnosis of biliary pancreatitis with obstructive jaundice due to biliary stones which was diagnosed upon arrival and underwent ultrasonography (US) which revealed biliary stones and a polyp of 1.5 cm without cholecystitis and the incidental encounter of an oversized gallbladder 17 by 10 cm in length (Figure 1). During his hospital stay the patient developed worsening conditions and underwent emergent endoscopic retrograde cholangiopancreatography (ERCP) which consisted of stone extraction and stent insertion which aided in resolution of the patient's condition. In addition, the proper treatment was performed by undergoing emergent ERCP due to the association of pancreatitis and a cholecystectomy was not the treatment of choice at the time due to patient comorbidities. A month following the ERCP, the patient was readmitted due to cholecystitis and the oversized gallbladder was reencountered by US, having similar dimensions of 17×10 cm in size. The patient was treated conservatively which consisted of antibiotics, analgesics, and fasting for a few days. Prior to discharge from the hospital the patient began a non-fat diet. The hospital stay concluded without any complications as previously encountered. An elective laparoscopic cholecystectomy was performed a couple

of weeks following the prior admission. The surgery was performed laparoscopically without any complications. During the surgical procedure, the gallbladder consisted of an empyema of the sac and was inflamed which was difficult to determine the anatomical structures and its origin in order to perform the necessary procedure. Drainage of the sac was performed prior to continuation of resection due to its large size of 17×10 cm. In addition, the presence of an empyema couldn't be determined prior to elective surgery which is why our decision of treatment upon the first admission was correctly carried out. As no pathological findings such as a tumor or obstructive manner were observed, the surgery was fulfilled without any complications (Figure 2). There were no post-operative complications and the patient was discharged on the second post-operative day. Pathology results showed signs of chronic cholecystitis without malignant findings.

DISCUSSION

As described enlarged gallbladders are rarely encountered in common practice. The definition of a normal gallbladder length is no larger than 7–10 centimeters (cm) [1, 3].

Several theories are identified which establish the mechanism of enlarged gallbladder.

Few theories state that impacted stones without cholecystitis cause long-standing obstruction resulting in reduced biliary drainage causing the epithelium of the gallbladder to secrete mucus also increasing intraluminal pressure resulting in distention of the gallbladder [1, 4]. Many authors have stated that oversized gallbladder is correlated with pathological states such as malignant tumors of the pancreas or biliary tree [2, 3, 5]. Over the years gallbladder distention has been frequently associated with malignancy. According to Courvoisier's law, patients with a palpable gallbladder presenting with jaundice are often diagnosed with a malignant obstruction of the common bile duct. Courvoisier et al. also described that dilation of the gallbladder is rare but not only correlated with malignancy but can also be associated with obstructing stones [2, 6]. Further details regarding indications of management in particular situations when dealing with cholecystitis are performed depending on the severity of the disease. Throughout recent years certain guidelines have been established in order to define and treat accordingly. According to the Tokyo guidelines which were established in 2007 and updated in 2013 and recently in 2018, determined and graded the severity of cholecystitis into three grades mild, moderate and severe. Grade I (mild acute cholecystitis) is defined as acute cholecystitis in a patient with no organ dysfunction and limited disease in the gallbladder, making cholecystectomy a low-risk procedure. Grade II (moderate acute cholecystitis) is associated with no organ dysfunction; however, there is an extensive disease in the gallbladder, resulting in increased difficulty in safely performing a cholecystectomy and an increased risk of biliary tract injury during the inflammation-related cholecystectomy surgery. Grade III (severe acute cholecystitis) is defined as acute cholecystitis with organ dysfunction. Depending on the severity of cholecystitis and specific patients such as the elderly, percutaneous cholecystostomy is a method which can be used in elderly patients with cholecystitis in cases where emergency surgery cannot be performed. Infection is controlled by drainage of the gallbladder. After percutaneous cholecystostomy, cholecystectomy can be performed under more appropriate and elective conditions [7–9].

Our case report is among the few reported cases having an oversized gallbladder and represents gallstones can be associated with unusually large gallbladder. This case accounts for one of the only few gallbladder cases of its size. The relation of giant gallbladder with malignancy is not quite understood which is why there have been few articles/cases to be accounted for in order to support this case. Various cases published have been associated with malignancy although the majority are not. All in all, our case has stated and provided more information about giant gallbladder than any other cases published in today's literature.

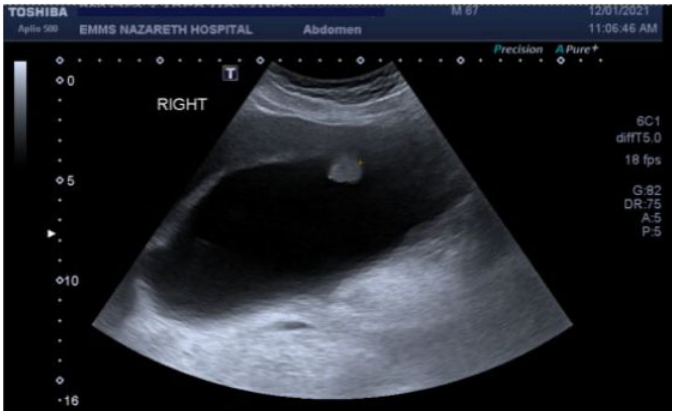

Figure 1: Ultrasonography upon first admission representing diameters of the gallbladder.

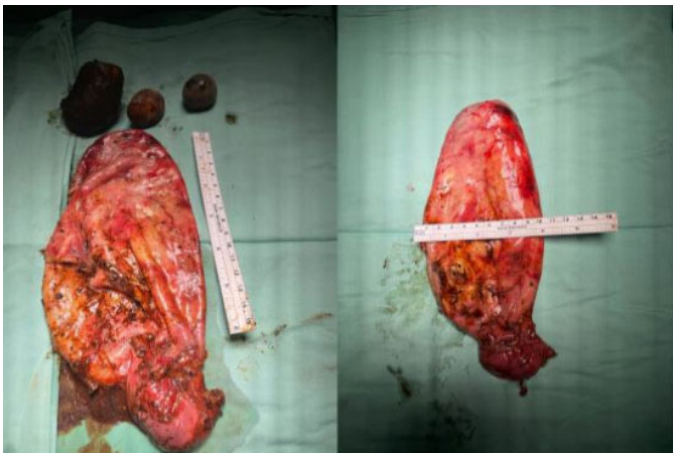

Figure 2: Image post-cholecystectomy.

CONCLUSION

Reports of giant gallbladder are rare and very few cases have been published throughout the history of medicine. The pathogenesis remains ongoing research despite advances in surgical medicine. The entity of having an enlarged gallbladder warrants surgical intervention to prevent ongoing inflammatory or malignant processes.

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Author Contributions

Amir Camil Obeid – Conception of the work, Design of the work, Acquisition of data, Analysis of data, Interpretation of data, Drafting the work, Revising the work critically for important intellectual content, Final approval of the version to be published, Agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved

Sa'd Sayida – Interpretation of data, Revising the work critically for important intellectual content, Final approval of the version to be published, Agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved

Wisam Abboud – Interpretation of data, Revising the work critically for important intellectual content, Final approval of the version to be published, Agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved

Guarantor of Submission

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Conflict of Interest

Authors declare no conflict of interest.

Data Availability

All relevant data are within the paper and its Supporting Information files.