Clinical profile of patients with empyema gall bladder

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ABSTRACT

BACKGROUND: Empyema of the gall bladder was described extensively in surgical texts of the early years of this century¹–³ but now rarely mentioned⁴. It seemed important to determine whether this neglected disease is still an important problem especially in older patient and to redefine its natural history. The aim of this study is to review all cases of empyema of the gall bladder which had presented to our hospital over a period of two years.

MATERIALS AND METHODS: The present study was conducted in Department of Surgery at Smt. SCL Municipal General Hospital, Ahmedabad from August 2013 to August 2015. Empyema was defined as an inflamed, thickened and edematous gall bladder which contained pus. 10 patients (3.33%) among 300 cases of gall-bladder disease presenting to our department were identified who fulfilled these criteria. These cases were analyzed to determine their age and sex distribution, and their clinical and pathological features.

RESULTS: 7 out of the 10 patients were diabetic. In four cases abdominal pain was present for average of eight days in other two cases pain was present between one and four months. In four of the cases, the disease was painless and was found unexpectedly at operation for chronic cholecystitis disease. Around 50% the patients had pyrexia of more than 38.5°C and the presence of sepsis was rarely suspected clinically. None of the patient died.

CONCLUSION: The considerable morbidity could be reduced by the wider use of blood culture in cases of cholecystitis and by greater awareness that empyema of the gall bladder is sometimes chronic, painless, and afebrile.

Key words: Empyema, Gall bladder, Cholecystitis, Blood culture, Diabetes

INTRODUCTION

Empyema of the gall bladder was described extensively in surgical texts of the early years of this century¹–³ but now rarely mentioned⁴. In addition, it appears to have been largely forgotten that its course can be chronic⁵, especially in older age group which may be due to the wider use of antibiotics, along with the increasingly followed policy of early cholecystectomy for acute gall-bladder disease⁶. It seemed important to determine whether this neglected disease is still an important problem especially in older patient and to redefine its natural history. We decided, therefore, to review all cases of empyema of the gall bladder which had presented to our hospital over a period of two years.

MATERIALS AND METHODS

The present study was conducted in Department of Surgery at Smt. SCL Municipal General Hospital, Ahmedabad from August 2013 to August 2015. Empyema was defined as an inflamed, thickened and edematous gall bladder which contained pus (Figure 1 and 2).

Figure 1:

The presence of inflammation and pus were established from the operation record, the gall-
bladder swab report, and the histology report on the resected gall bladder, cases of generalized infection of the biliary tree were designated as cholangitis and excluded from the study. From the 300 sets of case notes, 10 patients (3.33%) were identified who fulfilled these criteria and, on stringent review by all the authors, were agreed to be true examples of this disease. These cases were analyzed to determine their age and sex distribution, and their clinical and pathological features. Variables were evaluated and analyzed statistically. Z test for proportion was used to compare variables and tests were considered significant when P-Value < 0.05.

**RESULTS**

The 10 patients were mostly elderly, their average age being 60 years (range 40-80 years). There were 8 women and 2 men, giving a female preponderance of four to one (Figure 3). Percentage of female was significantly higher than percentage of male (p < 0.0001).

On clinical examination, the signs were as per Table 1.

**Table 1: Clinical Signs**

<table>
<thead>
<tr>
<th>Signs</th>
<th>No of Patients</th>
<th>% of Patients</th>
</tr>
</thead>
<tbody>
<tr>
<td>Right Hypochondriac Tenderness</td>
<td>6</td>
<td>60%</td>
</tr>
<tr>
<td>Guarding</td>
<td>2</td>
<td>20%</td>
</tr>
<tr>
<td>Palpable</td>
<td>2</td>
<td>20%</td>
</tr>
<tr>
<td>Pyrexia &gt; 38.5°C</td>
<td>5</td>
<td>50%</td>
</tr>
</tbody>
</table>

Lab and Per-operative findings were as per Table 2.

**Table 2: Lab & Per-Operative**

<table>
<thead>
<tr>
<th>Findings</th>
<th>No of Patients</th>
<th>% of Patients</th>
</tr>
</thead>
<tbody>
<tr>
<td>WBS &gt; 10,000</td>
<td>10</td>
<td>100%</td>
</tr>
<tr>
<td>LFT altered in one or more parameters</td>
<td>3</td>
<td>30%</td>
</tr>
<tr>
<td>Per-Op GB perforation</td>
<td>2</td>
<td>20%</td>
</tr>
<tr>
<td>Impacted stone at GB neck</td>
<td>10</td>
<td>100%</td>
</tr>
</tbody>
</table>

Four patients had no abdominal pain and the empyema were found unexpectedly, in these four patients empyema was found in 2 per operatively and ultrasonographically in other 2, in a further four patients, that had mild abdominal pain, empyema was found at routine cholecystectomy. The remaining 2 patients (20%) presented with abdominal pain of severe intensity to merit emergency admission. The pain had been present for average of four days in 2 patients and in four patients (40%), the pain had been present for one to four months.

In all 10 patients who were subjected to laparotomy, the procedure performed was cholecystectomy. A swab of the gall-bladder contents, which was available in six of the patients, revealed the presence of white cells in all six samples. Aerobic culture of gall-bladder contents was positive in four of these cases(Figure 4 & 5), the remaining two patients had been treated with antibiotics preoperatively.

The most common organisms isolated were coliforms but the range of bacteria was wide, and in four cases there was a mixed growth of two or three bacterial species. Blood cultures were taken preoperatively in only five patients (50%) and were positive in two cases yielding the same organism as grown from the gall bladder. In all 10 cholecystectomies that were performed, impacted stone at gall bladder neck was found in all 10 cases. Post operatively wound infections were found in 3 of the 10 patients and all 3 of them were diabetics.
DISCUSSION

The literature shows that empyema mainly affects older patients and has a high morbidity. While it usually presents with abdominal pain, the disease is sometimes painless. When pain is present, it may be tolerated for a surprisingly long time before admission is sought. Our patients had pain for an average of eight days before hospital admission and, in four cases; pain was present for between one and four months. This milder presentation was familiar to surgeons of the earlier part of this century but seems largely forgotten today. The serious nature of the disease is often obscured by the scanty physical signs especially in diabetics.

In cases of severe eight hypochondriac pains, localized guarding and palpable mass high suspicion for empyema of gall bladder should be kept. In particular, half the patients had a temperature of more than 38.5°C. This subdued response to infection, which is perhaps related to the often older age of the patients, makes it difficult for the physician to know whether to refer the patient to hospital and for the surgeon to recognize the need for emergent operation.

The great majority of patients had abdominal tenderness, a raised white cell count and non-specific derangement of the standard liver function tests. As empyema is such a dangerous condition this is, perhaps, an argument in favor of 'early' cholecystectomy in cases of acute gall-bladder disease. When antibiotics had not been administered preoperatively, culture of gall-bladder pus always grew one or more species of aerobic organisms. This finding shows that empyema of the gall bladder is rarely caused by anaerobic bacteria alone.

The true frequency of septicemia complicating empyema is uncertain, as a blood culture was taken in six patients only. This illustrates that the presence of infection was often unsuspected. We suggest the wider use of blood culture in cases of apparent 'cholecystitis' so as to detect possible complicating septicemia. This is of particular importance in the elderly in whom septicemia is commonly occult, and who may be less able than younger patients to resist the infection. Of the total group of 300 patients, only 3.33% developed an empyema. Why sepsis supervened in these few cases remains uncertain. Of possible importance may be the age of the patients (average: 60 years) and the length of time the gall bladder had probably been obstructed, pain having been present for average of eight days. Some patients, however, were both relatively young and had pain for only a day or two, so these cannot be the only predisposing factors.

Gall stones become more prevalent with increasing age and with the rising number of old people in the population, empyema of the gall bladder is likely to become a more common problem. None of our patients died but some mortality may be inevitable in this disease because of the advanced age of the patients. Some deaths, however, might be avoided if blood cultures are taken in more cases of apparent 'cholecystitis' and if doctors are more aware that empyema of the gall bladder is sometimes chronic, painless, and afebrile.

CONCLUSION

The considerable morbidity could be reduced by the wider use of blood culture in cases of cholecystitis and by greater awareness that empyema of the gallbladder is sometimes chronic, painless, and afebrile.

REFERENCES