EMPHYEMA GALL BLADDER – FORGOTTEN OR AN UNDER-REPORTED ENTITY

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ABSTRACT: SUMMARY: Twelve patients with empyema of the gall bladder were diagnosed among 325 cases of gall-bladder disease presenting to our department of surgery in three years period (March 2010 to March 2013). Abdominal pain was present for average of eight days in four cases and in four cases, for between one and four months. In some cases, the disease was painless and was found unexpectedly at operation for chronic cholecystitis disease. The severity of the problem was subdued by the often scanty physical signs. Less than 50% the patients had pyrexia of more than 38.5°C and the presence of sepsis was rarely suspected clinically. None of the patients died. This 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.

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 chronic^{2,3}. It could be due to the wider use of antibiotics, along with the increasingly followed policy of early cholecystectomy for acute gall-bladder disease⁴⁻⁶. We have recently treated several elderly patients in whom the disease was markedly milder event. As the number of old people in the population is rising, it seemed important to determine whether this neglected disease is still an important problem 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 three years.

METHODS: Empyema was defined as an inflamed gall bladder which contained pus (figure 1, 2, 3). 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 325 sets of case notes, 12 patients (3.69%) 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.

RESULTS: The 12 patients were mostly elderly, their average age being 60 years (range 40-80 years). There were nine women and three men, giving a female preponderance of three to one. Six patients had no abdominal pain and the empyema were found unexpectedly, two at ultrasonography and in a further four patients, empyema was found at routine cholecystectomy, after a long history of apparently mild pain. The remaining six patients (50%) presented with abdominal pain of sufficient

severity to merit emergency admission. The pain had been present, however, to some degree, for average of four days and in four patients (33.33%), the pain had been present for between one and four months. Most (83.33%) 10 out of 12 patients were tender in the right hypochondrium. Other signs were less constant. Guarding was noted in only 6 of the 12 patients (50%) and a palpable mass was present in only 5 (41.66%). There was clinically recognizable jaundice in 3 patients (25%). Despite the presence of intra-abdominal pus, only 5 patients (41.66%) had pyrexia of more than 38.5°C at any time preoperatively. A white cell count of more than 11000 mm³, however, was found in all cases. Liver function tests were performed in all the patients and showed one or more abnormalities in 10/12 (83.33%) but there was no consistent pattern of derangement. The preoperative, differential diagnosis as written in the case notes included empyema of the gall bladder in only five cases (41.66%). In all 12 patients who were subjected to laparotomy, the procedure performed was cholecystectomy. At laparotomy all the patients had a gall bladder obstructed by stones. In three cases (25%) the gall bladder was perforated. A swab of the gall-bladder contents, which was available in six of the patients, revealed the presence of white cells in all. Aerobic culture of gall-bladder contents was positive in four of these cases: the remaining two patients had all 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 six patients (50%) and were positive in two cases: yielding the same organism as grown from the gall bladder.

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 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^{1,3} but seems largely forgotten today. The serious nature of the disease is often obscured by the scanty physical signs. In particular, less than 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. Unfortunately, these three abnormalities are also common in cholecystitis without sepsis. Both of these conditions share the common initiating event of gall-bladder obstruction by stones. Our data suggest that it is difficult or impossible to distinguish empyema from 'chemical' cholecystitis or the transition from one to the other, either clinically or biochemically. As empyema is such a dangerous condition this is, perhaps, an argument in favor of 'early' cholecystectomy in cases of acute gall-bladder disease⁵⁻⁷. 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 325 patients, only 3.69% 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.

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Fig. 1: Excised specimen of empyema gall bladder.

Fig. 2: Showing thick pus and calculus.

Fig. 3: Showing gall bladder, large number of calculi and thick pus.

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