A CASE OF EMPYEMA OF THE GALL BLADDER

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Fistulae originating in the biliary tree are now rare\textsuperscript{1,2,3,4,5}. This has only occurred since cholecystectomy, with or without exploration of the common bile duct, came to replace non-intervention or simple cholecystostomy. Even rarer are spontaneous external biliary fistulae \textsuperscript{1,2}. These arise in the biliary tract and, by devious routes, emerge at various sites on the body surface. Before they rupture through the epidermis they are referred to as empyma necessitatis of the gall bladder. About half present in the right hypochondrium as would be expected, with some appearing through previous cholecystostomy wounds. The remainder recorded in the English language literature have appeared at the left costal margin, the umbilicus (via the falciform ligament), the right flank, the right iliac fossa, the right groin and the right thigh\textsuperscript{1,2,3,4,5}.

The present case adds another site to this list.

CASE REPORT

A 33 year-old married woman was referred with a 12-month history of a small, painful, soft abdominal swelling. She had no history of dyspepsia. She had gross enlargement of both kidneys due to congenital polycystic disease, and had had a vaginal hysterectomy and left ovarian cystectomy two years previously. The swelling had already been opened once, as it was thought to be a haemotoma related to her previous surgery. A cavity containing mucous fluid and grey calculi had been found. Unfortunately the calculi were mislaid, and so were not sent for analysis. The wound was closed and healed satisfactorily, however the swelling recurred about one month later, and it was at this stage that she presented to the Waveney Hospital.

On examination, there was a 4cm. diameter, tender swelling, situated in the mid-line, equidistant from the umbilicus and the symphysis pubis. Due to the site of the swelling, what was known of its previous contents, and the fact that it had recurred, it was thought to be a urachal cyst. Consequently, the patient was admitted for formal excision of the “cyst”.

On admission the haemoglobin was 10.9g/dl, the white cell count 6.0X10\textsuperscript{9}/L and the ESR was 50mm/hour.

At operation the “cyst” was found to be the termination of a fistula which had passed along the deep surface of the anterior abdominal wall from the right hypochondrium. The fistula was covered by the parietal peritoneum and was found to originate in the gall bladder, which contained a single large calculus in Hartmann’s pouch. The fistula was excised and cholecystectomy performed. The common bile duct was not judged to contain any calculi, and so was not explored.

The patient made an uneventful recovery, and was fit for discharge 12 days post-operatively. At review 10 months later she was well.
DISCUSSION

This condition has been referred to variously as spontaneous external biliary fistula, cutaneous biliary fistula and empyema necessitatis of the gall bladder \(1,2,3,4\). Empyema necessitatis is probably the most appropriate term here since the fistula had not actually penetrated the epidermis at the time of presentation.

The first case to be described was in 1670 by Thilesus \(1,2,3,5\). In the last century individual series contained 100-200 cases each. Due to the routine surgical treatment of gall bladder and biliary calculous disease, the incidence had fallen dramatically. In fact, the case here described is only the thirty-second to appear in the English language literature since 1900 \(1,2,5\). A little over twice this number have appeared in the total world literature in this time.

As with gall bladder disease in general, this condition tends to occur in females, the female: male ratio being approximately 3:1 \(4\). It is rare before the age of fifty \(1,5\). In this case the age at diagnosis was 33.

Various authors \(1,2,3,4,5\) have suggested that the commonest mechanism of formation is as follows. The inflamed and distended gall bladder becomes adherent, usually via its fundus, to the parietal peritoneum of the anterior abdominal wall. Increasing distension gives rise to impairment of the blood supply to the gall bladder wall, which then perforates. Due to the occurrence of previous episodes of inflammation it is already surrounded by dense adhesions, and these prevent a free intra-peritoneal perforation. Consequently, rupture occurs through the point of adherence to the parietal peritoneum and into the anterior abdominal wall. The fistula has now been started and, over a period of time, burrows its way along tissue planes and through the layers of the abdominal wall, to emerge at one of the previously mentioned sites. It may remain quiescent for a while, but will eventually rupture, discharging mucus, bile and pus. This settles to a continuous or intermittent discharge of mucus and bile in various proportions, depending on whether any biliary tract obstruction exists, and if so, its site.

Consensus opinion suggests that in the acute phase treatment should consist of antibiotics and supportive measures as for simple acute cholecystitis \(1\). Often the patient is elderly, and occasionally is very ill. In this case, treatment should remain conservative, unless the discharge consists of large amounts of bile. In any patient where this is so, surgical correction becomes urgent, to prevent the loss of large amounts of fluid and electrolytes.

In the majority of cases, once the acute phase has settled, a fistulogram should be obtained, followed by excision of the fistula and cholecystectomy \(1,4,5\). An intra-operative cholangiogram should be performed if any doubt exists as to the patency of the common hepatic and bile ducts.

These comments with regard to treatment are only appropriate if the diagnosis is appreciated pre-operatively. To increase the likelihood of this all fluid and calculi obtained from swellings of uncertain origin should be sent for analysis. Even so, it is likely that a number of cases of empyema necessitatis of the gall bladder will present at unusual sites before rupturing, and so without presenting pre-operative evidence as to their identity.
SUMMARY

A case of the rare condition of empyema necessitatis of the gall bladder is presented and discussed.

The site of the empyema in this case was unusual, in that it did not appear in the right hypochondrium or at any of the other less common sites previously recorded in the English language literature, but at a point in the mid-line, equidistant from the umbilicus and the symphysis pubis. The condition rarely occurs before the age of 50, but this patient was 33 years old.

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