INTRODUCTION

Courvoisier's (koor-vwah-zee-ayz) law states that in the presence of a non-tender palpable gallbladder, painless jaundice is unlikely to be caused by gallstones. It is generally implicated to be caused by malignancy, as the gallbladder obstruction caused by stones is intermittent, and the gallbladder is chronically shrivelled and fibrosed, and therefore, it is incapable of enlargement. On the contrary, pathologies like pancreatic or periampullary malignancy being of relatively shorter duration, cause distention by backpressure. But, Courvoisier's law does not absolutely rule out the possibility of gallbladder distension associated with stone disease particularly common bile duct stones. A few rare case reports of causes other than malignancy like oriental cholangitis, cystic duct strictures, Ascarisiasis infestation, or gallstones simultaneously in the gallbladder and cystic duct are also reported in the literature. Here, we report a case of a non-tender palpable gallbladder caused by multiple stones in the gallbladder and a large stone in CBD causing obstruction at its ostium.

CASE REPORT

A 65 years old woman presented with one year history of recurrent mild to moderate pain in right upper quadrant of abdomen, and relative constipation, as well as 2 days history of severe pain, and few episodes of vomiting. Though she had noted that her urine was somewhat darker than usual, she was quite unaware of the mild yellow tinge in her eyes and skin, and attributed it to weakness and recent weight loss of few stones. The patient denied any history of blood transfusions, pruritis, jaundice or hepatitis and was not using any medications. On examination she was afebrile, anaemic with mild jaundice. The patient's abdomen was slightly distended with a visible bulge in RHC. A mildly tender, ill-defined lump was palpable in RHC, and no visceromegaly was evident. She had no lymphadenopathy, skin rash, peripheral oedema or focal neurological findings. Although her CBC, serum electrolytes and renal profile were normal, except for mild anaemia, her ESR was 52 mm/h, as were her serum bilirubin 2.5 mg/dl, AST 42 U/L and alkaline phosphate 165 U/L. An abdominal ultrasound scan showed an enlarged gallbladder, with cholelithiasis. Suspecting malignant obstruction (according to Courvoisier's law), patient was operated. Her gallbladder was found to be hugely distended, and partially bifid (Figure 1 and 2). The CBD was also dilated with palpable stones. However, no mass was palpable in the periampullary region and the pancreas. Cholecystectomy was performed, and CBD was explored. A huge multifaceted stone with an end projecting into the ostium of CBD into duodenum was found completely obstructing it (Figure 3). The stone was removed, CBD and CHD were washed with saline, distal patency confirmed and T-tube left in place. Postoperatively, the gallbladder was bisected and found to contain about 90 stones (Figure 4). The patient had an uneventful postoperative recovery. Gallbladder histopathology report revealed chronic cholecystitis.

DISCUSSION

In his book “Casuistisch-statistische Beiträge zur Pathologie und Chirurgie der Gallenwege”, the pathology and surgery of the gallbladder" published in Leipzig in 1890, Ludwig Courvoisier - a swiss surgeon
stated that "with obstruction of the common duct by a stone, dilatation is rare. The organ is usually well shrunken. With obstruction from other kinds, on the contrary, distension is the rule. Shrinking occurs in only one twelfth of cases."³,⁴ Since, then this statement is famously known as the Courvoisier's law, Courvoisier syndrome, or Courvoisier's sign or Courvoisier-Terrier's sign (koor-vwah-zee-aye), has been subjected to changes in wording, phrasing and grammar from time to time, and these changes have redefined the definition originally put forward by the “safe surgeon”, and it is now frequently interpreted rather misinterpreted as "a palpable gallbladder is a sign of malignancy, in a jaundiced patient".⁵

Originally in his 187 study subjects of bile duct obstruction, Courvoisier⁶ observed that gallbladder dilatation “rarely” occurred with stone obstructing the CBD, and shrinkage rarely occurred with other pathologies. He never mentioned malignancy, and he never stated his observations as a “law”. It is however, unclear that at what point in time his observations came to be known as a law, but it was acclaimed as early as 1905.⁷ Despite the lack of accurate mention of “other kinds of pathologies”, the exact site of obstruction of CBD, or measure of dispensability of gallbladder in his pathological explanation of the condition, his theory remained unchallenged and frequently quoted since its publication in 1890,⁶ though many apparent exceptions to this law have been observed in clinical practice, and a few reported in literature.

Nandkarni et al. stated that 6 out of 36 cases of obstructive jaundice were an exception to this law, of which 4 patients had palpable gallbladder due to cholelithiasis, and 2 had malignant obstruction of lower CBD without a palpable gallbladder.⁸ Kaiser et al. supported his findings and concluded that absence of palpable gallbladder by no means, excludes the diagnosis of neoplastic obstacles.⁹ Similarly Knight³ found palpable gallbladder in one-third and one-half, of their patients with malignant obstruction; respectively. Similarly, in 1992, Fournier reported 2 newly described conditions - AIDS-associated cholangiopathy and diet-induced cholecystitis as cause of palpable gallbladder.²
These reports and few others\(^3\) carried out to check the validity of Courvoisier's law have been quite successful in breaking the myth wrongly associated to Courvoisier's law that palpable gallbladder is a sign of malignancy. Furthermore, Nandkarni\(^8\) and Chung\(^10\) have clearly demonstrated cholelithiasis as cause of distended gallbladder. Chung also explained that the gallbladder is equally pliable in patients with gallstones and malignant obstruction, unlike the classic explanation of fibrosis in chronic calculous cholecystitis. These reports have been quite successful in establishing association between causation, pathogenesis, and clinical implications of Courvoisier's gallbladder. However, the rarity of this report of a patient with palpable gallbladder due to ampullary obstruction caused by stone and chronic cholecystitis, prompted a review of literature, but an extensive search bore few reports. Nonetheless, it came clear that unlike other laws, Courvoisier's law is not uninfringeable and it is not a law, but a sign, and can be subjected to human error and misinterpretation.

The gallbladder can enlarge and become palpable with a complete mechanical obstruction of CBD, caused by extrinsic compression of the CBD by cancer of head of pancreas, enlarged lymph nodes, or intrinsic obstruction by stones, parasites like ascaris, or by non-mechanical causes like AIDS-associated cholangiopathy and diet-induced cholecystitis. It may enlarge but may not become palpable clinically, only to be detected on surgery. In either states, or due to any pathology referred to as "other kinds" by Courvoisier, it can be well detected by modern imaging modalities not available in Courvoisier's time, but foreseen and stated in his book as "if further evidence of this can be found, this would be an important marker for differential diagnosis".\(^7\)

We do not intend to reject this sign but to remind the surgeons of the actual observations of Courvoisier, in order to re-establish the fact that this eponymous sign need to be used with factual clarity and scientific accuracy, in the way Courvoisier intended, and not to be subjected to misconceptions, but taken as a base to investigate further into this context.

REFERENCES