

## Porcelain gallbladder

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Gallbladder showing rigid, thickened chronically inflamed wall with transmural calcification. The mucosa is granular and easily cracked. In this case, there were no discrete gallstones but fibrocalcific excrescences were present. Courtesy Dr. Geller's personal archive.

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Also known as calcified gallbladder, calcifying cholecystitis, or *cholecystopathia chronica calcarea*, 'porcelain gallbladder' (PGB) is the term used to denote the end-stage of chronic cholecystitis in which there is gallbladder wall calcification, emphasizing the bluish discoloration and the brittle consistency of the gallbladder on the gross examination. The reported incidence ranges between 0.06 and 0.08% at autopsy,<sup>1</sup> while this incidence reaches up to 1,1% in studies of 8 series of consecutive cholecystectomies.<sup>2</sup> The mean age at diagnosis varies from 32 to 70 years and a marked predominance among females is observed (female: male 5:1).<sup>2,3</sup>

In 1951, Kazmierski<sup>4</sup> first reported the concordance of PGB and gallbladder cancer (GBC). Since then, this significant association emphasizes the importance of diagnosing PGB. Indeed, the diagnosis of PGB has been considered a mandatory indication for cholecystectomy, irrespective to clinical complaints, because of high incidence of this association although some authors emphasize that even if gallbladder carcinoma is not that frequent, cholecystectomy should be performed because of the difficulty of evaluating the calcified gallbladder by imaging methods.<sup>3,5</sup> In essence, there have been sufficiently variable results in different studies to question the association with malignancy,<sup>2,3,5-8</sup> although a few recent studies have highlighted the potential risk for GBC development, suggesting that incomplete or GB mucosal calcification is itself associated with higher incidence of GBC<sup>6-9</sup> compared with transmural calcification of the GB.<sup>2</sup>

GB wall chronic irritation by gallstones (present in up to 95% of the cases) and cystic duct obstruction with bile stagnation facilitating mucosal calcium carbonate precipitation represent the most likely etiopathogenic mechanism in PG.<sup>3,5</sup> Other possibilities includes dystrophic calcification, errors of calcium metabolism, inflammation and ischemia. Although unproven, bile stasis, chronic degeneration and regeneration with mucosal dysplasia likely contribute to carcinogenesis. PGB can also be seen, as in this case, in patients who have acalculous cholecystitis.

Some patients present with biliary pain or even a firm mass palpable in the right hypochondriac region.<sup>2</sup>

Often, however, patients are asymptomatic and the diagnosis is frequently done when the calcification is detected on an abdominal image performed for some other reason.

Given the uncertainty of the potential higher risk of GBC in patients with PGB, it is appropriate to assess the risk of cholecystectomy against the possibility/probability of malignant transformation.

**Keywords:** Cholecystitis; Gallbladder Neoplasms; Cholecystectomy.

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**Conflict of interest:** None

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