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REVIEW ARTICLE

Gallbladder Cancer, Treatment Failure and Relapses: the Peritoneum in Gallbladder Cancer

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Abstract
Purpose This study aims to review gallbladder cancer (GBC) and present current management strategies, factors influencing prognosis, recurrence and areas of consideration.
Methodology Literature search in PubMed was made and restricted to articles published from 2002 to 2013 using the following keywords: (GBC+peritoneum and GBC+surgery+metastasis/recurrence); abstract evaluation narrowed results to 53 articles. Twenty-six single-institution reports with 2,097 patients among 36 large-scale retrospective studies were obtained and focused on surgical outcomes.
Results GBC presents late and recurs early with a poor prognosis. There is no definitive time for curative re-resection following incidental diagnosis. Effective surgical strategies for each disease stage remain unclear. Management guidelines are not universally standardised, most institutions utilise protocols based on individual experiences and limitations. Early-stage GBC is curable with complete resection but invisible metastases at unobvious sites remain problematic. In this study, at least 450 patients relapsed, most had peritoneal metastasis. The peritoneum is a common metastatic site, its microenvironment is intrinsically hypoxic, well vascularized and lined with mesothelium overlaying immune aggregates, which express pro-angiogenic and adhesion molecules that are highly selective for tumour growth and evolution. There are no medical/molecular antagonists to inhibit peritoneal carcinomatosis. Peritonectomies have been successfully undertaken; furthermore, GBC responds to some chemotherapy combinations.
Conclusion This review focused on GBC surgery. Peritoneal carcinomatosis is common. In carefully selected patients, the incorporation of peritoneal disease in cytoreductive surgery and intraperitoneal chemotherapy will inhibit a vehicle for dissemination, eliminate future relapse sites and improve survival. Areas for consideration include universally standardised protocols, clear management guidelines for each stage, effective re-resection timings with guidance on where or how to identify additional disease.

Keywords Gallbladder cancer treatment and recurrence · Peritoneum · Gallbladder cancer surgery

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Introduction

Gallbladder cancer (GBC) is a biliary tract cancer with a multifactorial aetiology. The majority of GBC are adenocarcinomas [1]. Gallbladder tumours are very aggressive and remain asymptomatic in the early stages; consequently, this cancer has a dismal prognosis [2]. Classically, the late-stage presentation is non-specific and includes abdominal pain and discomfort, abdominal mass, jaundice, vomiting and ascites [1,3,4], particularly in cases where there is obstruction from peritoneal involvement. A diagnosis of GBC is usually incidental, either intra-operatively or histopathologically, post-cholecystectomy [5,6] in patients investigated or treated for suspected cholelithiasis and cholecystitis, which are more common [2,7]. While there is a diagnostic role for endoscopic ultrasonography with fine needle aspiration, the limitations of first-line diagnostic tools such as ultrasonography include inability to differentiate between early GBC and chronic cholecystitis [1]. Although establishments such as the National Comprehensive Cancer Network (NCCN) publish guidance on the management of GBC [8], a recent study found that at present, GBC management strategies are generally