Case Report

Squamous Cell Carcinoma of Gallbladder Masquerading as Ruptured Gallbladder Mucocele

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Abstract

Squamous cell carcinoma of the gallbladder is rare diagnosis. We report a case of squamous cell carcinoma of the gallbladder diagnosed post cholecystectomy. The patient had presented with symptoms of acute cholecystitis and radiological imaging did not suggest presence of gallbladder malignancy. Emergency laparotomy was performed on clinical diagnosis of a ruptured gallbladder. The diagnosis of gallbladder squamous cell carcinoma was made later from histopathological examination. In this case report, we highlight the limitations of diagnosing gallbladder carcinoma on radiology and the management of gallbladder carcinoma diagnosed intra-operatively. The role of extended radical resection is discussed. In conclusion, squamous cell carcinoma of gallbladder is very rare and has a more aggressive course and poorer prognosis than adenocarcinoma. Aggressive radical surgical approach to achieve R0 curative resection is shown to have improved outcome and better overall 5-year survival for patients with gallbladder cancer.

ABBREVIATION

CT: Computed Tomography

INTRODUCTION

Primary carcinoma of the gallbladder is an uncommon disease, accounting for 3% of all malignant tumors and is the fifth most common malignancy of the digestive tract [1]. Majority of them are adenocarcinomas. Primary squamous cell carcinoma of the gallbladder is very rare and represents 0-3.3% of all gallbladder cancers, occurring mainly in women aged between 40 to 60 years [2,3]. The incidence of gallbladder cancer diagnosed in patients after cholecystectomy for presumed gallbladder stone disease is 0.5%-1.5% [4]. We report here a case of squamous cell carcinoma diagnosed after cholecystectomy performed for ruptured gallbladder mucocele in a 50-year-old lady.

CASE PRESENTATION

A 50-year-old Chinese lady was admitted to the hospital with one week history of right hypochondrial pain and fever. She was not known to have cholelithiasis in the past. On examination she was febrile. There was tenderness on abdominal palpation and Murphy’s sign was positive. No mass or organomegaly were detectable. Haematological and biochemical parameters were normal except for leucocytosis. Transabdominal ultrasonography revealed presence of gallstones, and the gallbladder was distended with an appearance suggestive of gallbladder empyema. Computed tomography (CT) scan of the abdomen revealed a markedly distended gallbladder and thickened gallbladder wall with surrounding pericholecystic fluid suggestive of cholecystitis with no evidence of mass or suggestion of duct obstruction (Figure 1). She was treated with intravenous antibiotics and responded well clinically and biochemically. The patient was discharged with a plan for elective open cholecystectomy. However, she returned with an acute abdominal pain and an emergency laparotomy was performed on a diagnosis of ruptured gallbladder a day before the scheduled operation date. At laparotomy, a ruptured...
gallbladder mucocele with impacted stones in the Hartmann's pouch was found. Partial cholecystectomy was performed as there were severe dense adhesions between gallbladder to liver bed, stomach, duodenum and colon. Histopathological examination revealed well-to-moderately differentiated squamous cell carcinoma of gallbladder. No lymphovascular permeation was seen (Figure 2). The immediate post-operative course was uneventful and she was discharged home after four days. She presented again a month later with right hypochondrial pain associated with fever, chills and rigors. CT abdomen showed possible residual tumor with fluid accumulation around the gallbladder remnant, along with multiple cystic liver lesions (Figure 3). The patient was then referred to a tertiary hepatobiliary unit where an ultrasound guided percutaneous drainage of the fluid collection was performed. The fluid cytology was positive for malignancy. A repeat CT scan of abdomen 3 days after the drainage revealed resolution of the fluid in the gallbladder fossa but there were multiple enhancing lesions in Segments II, III, VI and VII 2,3,6 of liver, which were likely to represent metastatic lesions. She was then subjected to radical cholecystectomy and liver resection. Intra-operatively, it was noted that the partially excised gallbladder had exposed tumor which had been cut through, and tumor tissue was found adhered to the duodenum (Figure 4). There were liver metastases in Segments II, V and VIII. Hepatoduodenal lymph nodes were enlarged. Radical cholecystectomy with resection of Segments IVB, V and VI was performed and the Segment II and VIII lesions were ablated with diathermy. Histopathological examination of the resected liver segments and remnant gallbladder revealed moderately differentiated squamous cell carcinoma. Tumor was seen at the resected margin. The hepatoduodenal lymph nodes were negative for malignancy. There was no complication post-operatively and patient was discharged 4 days after surgery.

DISCUSSION

Carcinoma of the gallbladder is a lethal disease with an overall 5-year survival of less than 5% [4,5]. Death due to gallbladder carcinoma commonly occurs due to aggressive local disease, long before distant metastases emerge [6]. The well-recognized risk factors for gallbladder carcinoma are gallstones and cholecystitis. Gallstones are present in 74% - 92% of patients with gallbladder carcinoma [7]. In this case, gallstones were detected by ultrasonography and stones were noted intra-operatively in the Hartman's pouch.

The clinical presentation of gallbladder cancer is often similar to biliary colic or chronic cholecystitis. Persistent right upper quadrant or epigastric pain is the most common symptom. Other symptoms include jaundice, nausea, vomiting, anorexia, weight loss and a palpable mass [4]. Since the symptoms and signs of gallbladder carcinoma are vague and non-specific, it is difficult to diagnose clinically. Even with the numerous diagnostic tests available, gallbladder cancer is frequently first diagnosed during laparotomy or laparoscopy which are performed for benign gallbladder disease [8]. Our patient presented with symptoms mimicking acute cholecystitis and pre-operative imaging was unable to detect gallbladder carcinoma. Ultrasonography in patients with gallbladder carcinoma has certain limitations such as interference from air-filled bowel shadows, limited depth resolution and inadequate visualization of parts of the gallbladder in areas of posterior acoustic shadowing due to the presence of calculi [9]. CT scan has the potential to overcome these drawbacks. However, the CT scan of our patient showed only a thickened gallbladder wall, which is usually a less common presentation of gallbladder carcinoma and is often difficult to diagnose as gallbladder wall thickening is seen in a wide range of clinical settings such as chronic cholecystitis [10,11]. George et al. reported that 56% of gallbladder carcinomas presented with a mass in gallbladder fossa, and localized or polypoidal growth within the gallbladder was appreciated in 20% of cases. Wall thickening of varying degrees, either focal or diffuse, was detected in 24% in that study [9]. The differentiation from chronic cholecystitis is difficult and the presence of a highly enhancing thick inner wall layer is considered more indicative of carcinoma whereas an iso-attenuating thin inner wall layer is indicative of chronic cholecystitis [12].
Our patient underwent emergency laparotomy for a diagnosis of a ruptured gallbladder. Intra-operatively, the surgeons failed to diagnose gallbladder carcinoma based on the macroscopic appearance, which is often difficult to distinguish from ruptured empyema or mucocele of gallbladder. Diagnosis is made intra-operatively in only 1 quarter of cases [13]. The gallbladder should be routinely examined by the surgeon after resection, and this should include both inspection and palpation of the gallbladder wall in search of a tumor mass, a large polyp, or abnormal wall thickening. If gallbladder carcinoma is diagnosed intra-operatively, the ideal procedure is an extended cholecystectomy with lymphadenopathy in a single intervention. However, Isambert et al., recommended two-stage resection with a minimal period of delay to allow staging, resolution of inflammation, and re-operation under good conditions, whence extended resection is not immediately possible due to patients poor general condition or the available technical capabilities, especially in emergency operations [13]. It is also suggested that the gallbladder not be removed in the absence of sepsis, in order to minimize gallbladder manipulation, avoid gallbladder injury or bile spillage, and in anticipation of a possible transfer of the patient to an expert center for definitive surgery.

Six weeks after the first operation, our patient underwent re-intervention with extended resection. No study has defined an ideal time interval for re-operation as the impact of delay on survival is unknown. In practice, the average interval seems to be two weeks. The German recommendations are for re-operation within six weeks [14]. The goal of the re-operation is to achieve an R0 resection. Patients with pT1a incidental gallbladder carcinoma with clear margins including the cystic duct margin need no further surgery. In patients with pT1b, positive surgical margins and/or positive cystic node involvement, completion of surgery is warranted. In patient with pT2 or pT3 incidental carcinoma, Yildirim et al. found that extended cholecystectomy was associated with a reduced hazard of death by 90% in the follow-up period [15]. The re-operation fundamentals include extended cholecystectomy combining liver resection plus a formal lymphadenopathy, resection of the cystic duct with negative frozen margins or resection of the common bile duct if the tumor involves the gallbladder neck or cystic duct, and resection of any trocar sites from an initial laparoscopy [13]. Others authors favor more aggressive surgery, such as hepatopancreatic duodenedectomy [3]. However in view of the presence of liver metastases and locally advanced disease, we only performed completion of cholecystectomy with Segment IVB, V and VI resection. The incomplete excision of the gallbladder during the initial surgery leads to a worsened prognosis in a disease with an already poor prognosis. There is still no effective adjuvant therapy for gallbladder cancer [4].

In conclusion, squamous cell carcinoma of gallbladder is rare, and the tumor is more aggressive and has an even poorer prognosis than gallbladder adenocarcinoma. As with any gallbladder cancer, the clinical signs and symptoms are non-specific. Hence, the diagnosis is often made following cholecystectomy for benign disease. The macroscopic appearance of the gallbladder and surrounding tissues during cholecystectomy should alert the surgeon to the diagnosis intra-operatively. An aggressive radical surgical approach to achieve R0 curative resection leads to improved outcome and overall 5-year survival in patients with gallbladder cancer.

**REFERENCES**