

## Case Report

# Case of Primary Carcinosarcoma as an Extremely Rare Cancer of Gallbladder

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### Abstract

**Introduction:** Gallbladder carcinosarcomas (GBCS) are a rare type of gallbladder malignancies. These tumors are characterized by interlaced epithelial and mesenchymal components.

**Presentation of Case:** The experience with diagnosis and follow-up of these cancers is limited because of the number of patients diagnosed with this tumor is so small and the tumor has a poor prognosis. Therefore, we present the following case report to share our experience with a 13-month survival of a 55-year-old woman presenting with right flank pain and jaundice who underwent laparoscopic cholecystectomy with an initial diagnosis of chronic cholecystitis and later diagnosed with GBCS.

**Conclusion:** GBCS have poor survival rate even with successful surgical therapy due to unclear etiopathogenesis, extremely very low incidence, and lack of consensus regarding its follow-up and treatment.

**Keywords:** Carcinosarcoma; gallbladder; treatment; prognosis

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**Competing Interests:** The authors have declared that no competing interests exist.

**Consent:** We confirm that family members of the patients have given their informed consents for the case report to be published.

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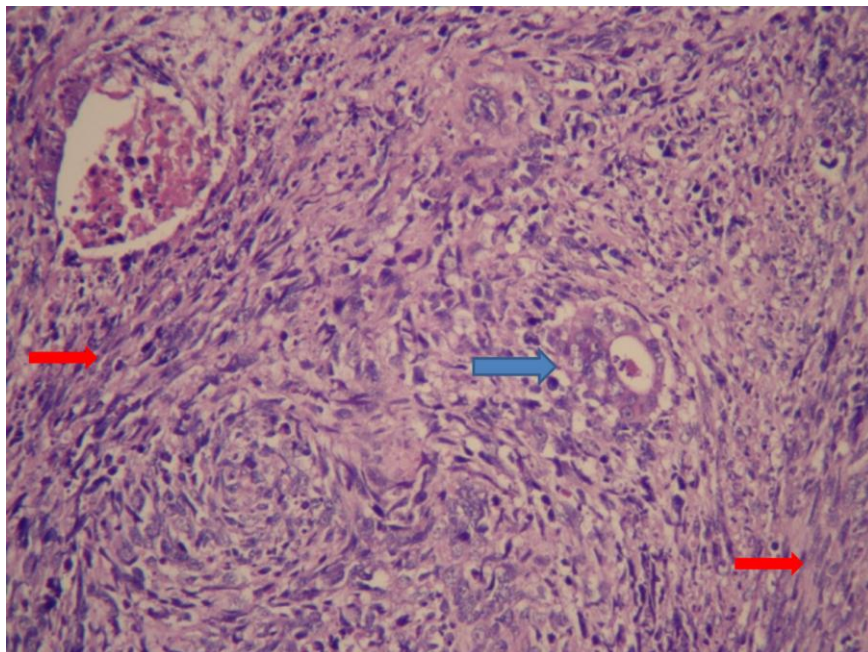
## Introduction

Gallbladder carcinosarcomas (GBCS) are a rare type of gallbladder malignancies. So far, less than 100 cases have been reported worldwide. Therefore, experience and knowledge with this disease are limited. GBCS are characterized by interlaced epithelial and mesenchymal components. This aggressive nature of GBCSs adequately explains the limited number of resectable cases [1-5].

## Case report

A 55-year-old woman with right flank pain and jaundice underwent stone extraction via endoscopic retrograde cholangiopancreatography (ERCP) at an outside center after detection of choledocolithiasis in abdominal ultrasonography (USG). Magnetic resonance cholangiopancreatography (MRCP) performed revealed mural thickening in gallbladder, multiple bile stones with a diameter of 1 cm, and a normal common bile duct.

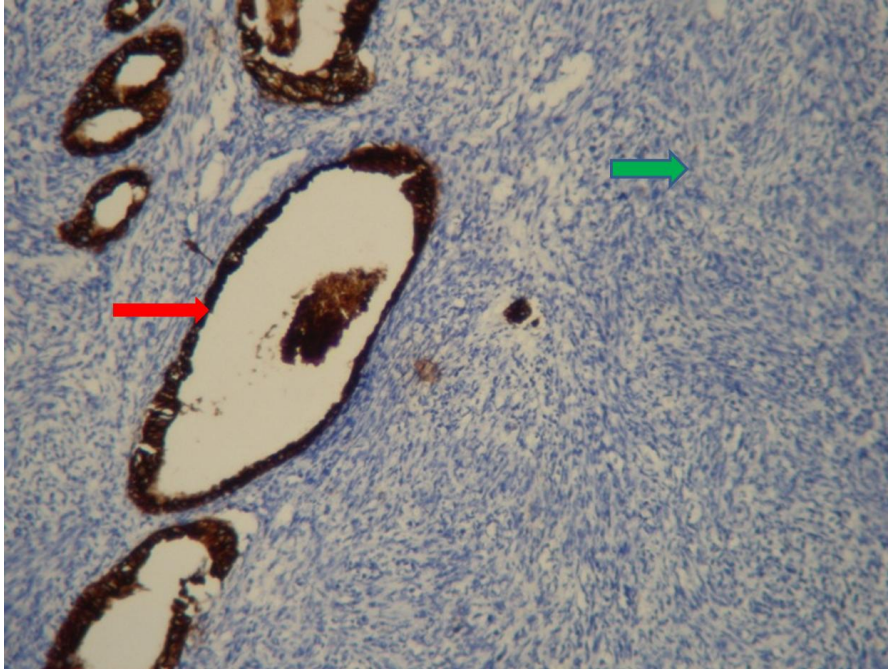
One month after the first attack this presentation she admitted to our hospital with similar complaints. Ultrasound examination showed multiple stones with a mean diameter of 11 mm in gallbladder as well as mild thickening in gallbladder wall. A normal common bile duct was visualized. A complete blood count and liver function tests were in normal limits. An elective laparoscopic cholecystectomy was performed. Peroperative laparoscopic exploration revealed a thickened gallbladder wall in addition to multiple stones in gallbladder lumen. As it was difficult to catch gallbladder, its content was aspirated and a huge amount of infected material was evacuated. A laparoscopic cholecystectomy procedure was applied without any complication with an initial diagnosis of chronic cholecystitis. The gallbladder was externalized from the subxiphoid trocar site. Macroscopically, the gallbladder wall was characterized by a thickening that was more marked in fundus. In addition, a mucosal irregularity was noted in fundus.



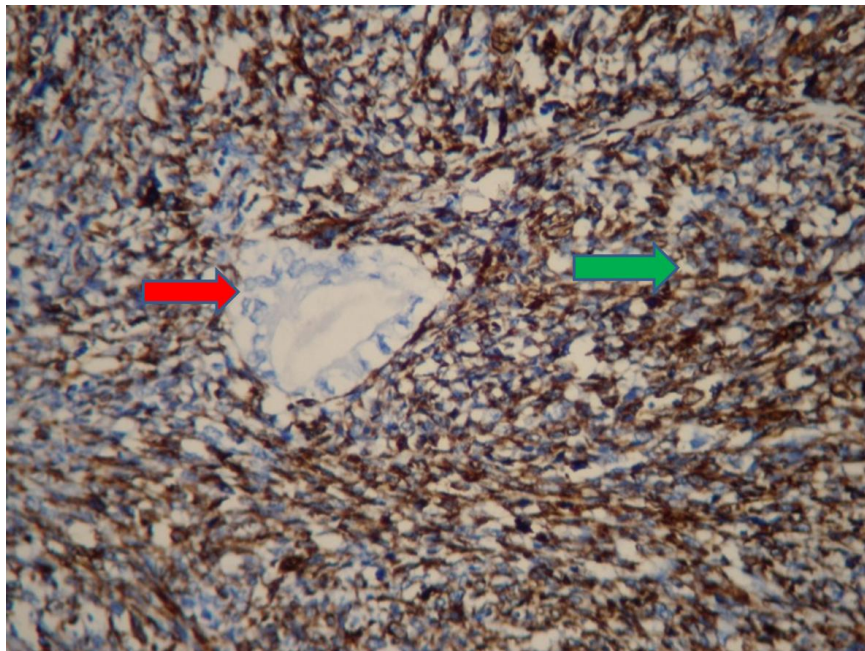
**Figure 1** The tumor contains a well to moderately differentiated adenocarcinoma and sarcomatous areas (H&E x 200).

Pathological examination of the postoperative material revealed a 3cm tumor in fundus,

extending beyond serosa. Tumor contained epithelial and sarcomatous patterns (Figure 1) and on immunohistochemical examination it was pancytokeratin (+), P-CEA (+), and P53 (+) in epithelial areas (Figure 2) and vimentin (+) and P53(+) in areas with a sarcomatous appearance (Figure 3). Desmin, smooth muscle actin, S-100, CD34, and CD31 were negative. In the light of the data gathered, she was diagnosed with “gallbladder carcinosarcoma”.



**Figure 2** Immunohistochemistry pancytokeratine staining mainly in the adenocarcinomatous components (DAP x 200).



**Figure 3** Immunohistochemistry vimentin staining mainly in the sarcomatous components and negative adenocarcinomatous components (DAP x 200).



The Positron Emission Tomography – Computed Tomography (PET-CT) examination was performed since both the surgical border was positive and the patient had possible metastases. PET-CT did not detect any residual tumor, metastasis, and another primary focus. Nevertheless, as the patient had surgical border positivity, was taken to explorative laparotomy at first month. Exploration of the abdomen revealed diffuse tumor deposits in gallbladder site, omentum, subxiphoid trocar site, and parietal peritoneum of upper abdomen. A frozen examination was performed from these deposits. Frozen sections revealed malignant and the patient was accepted as peritonitis carcinomatosa. She was discharged on postoperative 3<sup>rd</sup> day.

The patient's clinical condition was discussed at oncology council and adjuvant chemotherapy was recommended. PET-CT examination 6 months after the operation showed a recurrent tumor in the operation site. The patient died after twenty months of first surgery.

## Discussion

Adenocarcinomas constitute more than 80% of gallbladder malignancies. The rate of carcinosarcomas is less than 1%. Carcinosarcomas have been generally reported in uterus, lung, esophagus, kidney, pancreas, thyroid, and breast [2, 3]. The first case of GBCS was reported by Landsteiner in 1907 [10, 11]. Carcinosarcomas are tumors in which mesenchymal and epithelial components are found together. Interlaced carcinomatous and sarcomatous areas are noted in this malignant tumor. The predominant appearance in epithelial areas is the adenoid formations. Chords and layering may also be observed. The sarcomatous component is composed of heterologous elements. These areas may have chondrosarcoma, osteosarcoma, and rhabdomyosarcoma features. Immunohistochemically, negativity of sarcomatous areas for cytokeratin and carcinoembryonic antigen allows differential diagnosis from spindle and giant cell carcinoma [1-5, 8].

In our case, cytokeratin was positive in epithelial areas while it was negative in sarcomatous areas. A focal staining was evident with smooth muscle actin in sarcomatous areas. In the light of these data, our case was considered a carcinosarcoma.

A previous review has reported a female-to-male ratio of 3.25/1 and the mean age of diagnosis of 68.8 years. Two thirds of cases had bile stones [1]. Although our patient was younger than the mean age of diagnosis, her features were consistent with the demographic data provided above.

Less than 100 cases have been reported in literature so far. Therefore, no staging system has been developed and no consensus has been established for its treatment and management [1-3]. On the other hand, some authors use AJCCSS (American Joint Committee Cancer Classification System). Our patient was staged as Stage 4A (T<sub>4</sub>N<sub>0</sub>M<sub>0</sub>) according to TNM staging [8,9]. The preferred treatment option for successful outcomes is usually surgical treatment in limited tumors. No successful results have been reported so far with radiotherapy and chemotherapy in more advanced tumors [1, 5].

The prognosis is usually poor despite aggressive surgical resection. Although hepatic and peritoneal involvements are frequent, other abdominal organs and regional lymph nodes were detected to be involved in many cases. Many patients have been lost within a couple of months due to recurrences and metastases despite successful surgical intervention. A case with no liver invasion and lymph node metastasis has been reported to live for 54 months following radical cholecystectomy [9]. Curative surgical resection appears to be the only chance for long survival in cases with such carcinosarcomas. However, even with radical surgical resection in more widespread tumors 3-year survival and median survival have been reported to be only 31.0%, and 7.0 months,

respectively [5]. Majority of recurrences develop within the first 6 months after the surgery and the mean recurrence time has been reported as 50 days [5, 9-11].

Although the majority of the recent literature data suggest that post-surgical chemo-radiotherapy has no survival advantage, our patient was begun on chemotherapy in line with the oncology council recommendations. Despite this, she was diagnosed with local recurrences at the 6th month of follow-up and chemotherapy was continued. She died after twenty months of first surgery.

As the prognosis of carcinosarcoma is worse than adenocarcinoma, novel adjuvant chemotherapy and/or radiotherapy protocol options should be developed [11].

In conclusion, gallbladder carcinosarcomas have very poor survival rate even with successful surgical therapy due to unclear ethiopathogenesis, extremely low incidence, and lack of consensus regarding its follow-up and treatment. It is important to establish new surgical and adjuvant treatment protocols with increasing knowledge and experience as our case added to literature.

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