

Ovarian metastasis of primary biliary and gallbladder carcinomas

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Summary

The ovary is a frequent site of metastasis from a wide variety of malignant neoplasias, with the majority originating in the GI tract. The best known tumor of this type is signet ring cell adenocarcinoma (Krukenberg tumor). The gallbladder and bile ducts are rare sources of these metastases. We are reporting two such cases in which the patients presented with no hepatic symptoms and vague gastrointestinal complaints. The gallbladder and bile duct carcinomas were incidental findings during exploratory laparotomy for an ovarian mass.

Key words: Gallbladder carcinoma; Biliary carcinoma; Ovarian metastasis.

Introduction

Ten percent of all ovarian malignant lesions are metastatic [1]. Of these 30-50% are Krukenberg tumors [2]. Krukenberg tumor is mostly of gastric origin [3]. Metastases from colorectal carcinoma and the pancreas are important since they cause difficulties in the pathological diagnosis because of their simulation of endometrioid and mucinous carcinomas [4, 5].

The gallbladder and bile duct are rare sources of ovarian metastases. Primary gallbladder tumors may be completely asymptomatic [6] or present with hepatic symptoms [7] and may even be associated with hormone production [8].

In this report, examples of ovarian metastases from gallbladder and bile duct carcinomas are described.

Case Reports

Case I

A 33-year-old female presented with abdominal pain and distension. She was found to have minimal ascites upon physical examination. Pelvic ultrasonographic examination revealed ascites and a 3 cm in diameter, thick-walled, septated, cystic mass of the left ovary. Doppler studies showed a flow pattern consistent with a malignant mass. Ca 125, Ca 19.9 and Ca 15.3 assays were all normal. Liver enzymes were slightly elevated (ALT = 54 u/l and AST = 40 u/l), but both direct and indirect bilirubin levels were noted to be normal upon routine blood biochemistry test.

Laparotomy was performed with frozen section from the left ovary showing adenocarcinoma. Exploration of the abdomen showed thickening of the gall bladder wall. Biopsy of this lesion revealed poorly differentiated adenocarcinoma infiltrating the pancreas and duodenum. Total abdominal hysterectomy, bilateral oophorectomy, omentectomy, appendectomy, bilateral pelvic-paraortic lymph node dissection and cholecy-

stectomy were performed. All lymph nodes and the other abdominal viscera were free of malignancy.

Adjuvant chemotherapy with 5-FU (fluorouracil) 425 mg per square meter for four days and mitomycin 10 mg per square meter for one day was added. She is doing well in her post-operative sixth month.

Case II

A 73-year-old menopausal female presented with constipation and distension. Both abdominal computerized tomography and magnetic resonance imaging studies revealed a right adnexal solid mass 4 x 6 cm in diameter and massive ascites with multiple peritoneal implants. Ca 125 assay was 354.8 with normal less than 35. Ca 19.9 assay was 457.6 with normal less than 37. CEA and CA 15.3 levels were normal. Her pap smear revealed atrophic cells. Exploratory laparotomy was performed and it was noted that there was massive ascites and peritoneal surfaces including intestinal serosa, uterine serosa, tubal serosa and the pelvic walls were covered grossly by tumoral tissue. The right ovary contained a 4 x 6 cm solid mass. Total abdominal hysterectomy, bilateral oophorectomy, omentectomy, appendectomy and bilateral pelvic lymph node dissection were performed. The gallbladder was observed to be hydropic and invaded by tumoral tissue therefore, cholecystectomy was also added to the procedure.

Biopsy of the gallbladder revealed moderately differentiated adenocarcinoma infiltrating the serosa and adjacent hepatic tissues.

The omentum, bilateral ovaries, bilateral tubal serosa, appendices epiploica, uterine serosa and peritoneal fluid were all invaded by tumoral cells. Bilateral pelvic lymph nodes were free from malignancy.

Adjuvant chemotherapy using 5-FU and mitomycin with the same protocol as case I was carried out and she was dismissed from the hospital uneventfully.

Discussion

Review of the literature revealed 68 cases of gallbladder carcinoma and nine cases of cystic duct carcinoma metastasizing to the ovaries. Albores-Saavedra and

Henson [9] found ovarian metastases in 6% of their total series of patients with gallbladder cancer.

Patients with gallbladder or cystic duct carcinoma generally present with symptoms referable to the biliary tract. But when they metastasize to the ovaries, symptoms of primary tumor may be masked by ascites or ovarian tumoral mass.

When the primary tumor is located in the gallbladder and clinical and imaging studies suggest a primary ovarian carcinoma, only careful surgical exploration of the upper abdomen and biopsy of suspicious lesions may demonstrate the primary tumor. Even after biopsy, there may still be problems in determining the origin of the tumor histopathologically. There are reported cases in the literature in which the metastatic ovarian neoplasm was interpreted as primary ovarian tumor during histological examination [10, 11]. This is most likely to occur when the ovarian lesion is discovered before the primary tumor is detected.

Determination of the origin of the ovarian mass is of serious therapeutic and prognostic importance. Therefore with all ovarian mass surgeries, careful exploration of the upper abdomen must be routinely performed and the possibility of gallbladder origin should always be considered both by the surgeon and pathologist, after exclusion of other common sites of gastrointestinal tract origin. Santesson and Kottmeier [12] reported that exploration for an ovarian mass will show metastatic tumor in 6% of the cases. After thorough exploration of the abdomen, debulking surgery must be performed since patients benefit from debulking just as in primary ovarian carcinoma.

In the two cases of this report, patients presented with only vague gastrointestinal tract complaints such as constipation or abdominal pain. Imaging studies strongly suggested a primary ovarian neoplasm. Findings of ascites and elevated CA 125 levels in the second case supported this view. Gallbladder and bile duct carcinomas were incidental findings during exploratory laparotomy for an ovarian mass.

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