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Case Report

Recurrent Gallbladder Cancer Presenting as Ovarian Neoplasm: A Case Report

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Introduction

Gallbladder carcinoma is reported to be incidentally diagnosed during approximately 1% of all cholecystectomies. Only 30% of gallbladder carcinomas are recognized intra-operatively, the remaining 70% are identified with final pathologic confirmation. Unfortunately, the prognosis for these malignancies is poor and the overall 5-year survival rate is reported to be less than 5%. Risk factors for the development of gallbladder carcinoma include chronic inflammation and gallstones with a direct correlation between the size of the stones and the risk of cancer. Chronic inflammation may come in the form of chronic cholecystitis, porcelain gallbladder, chronic bacterial infection and primary sclerosing cholangitis. Inflammation of tissues is thought to exacerbate DNA damage, increasing the risk of oncogenic transformation [1].

As it stands, there are few cases in literature of gallbladder carcinoma presenting as ovarian metastasis. To our knowledge, all other reports of ovarian metastasis have been in the primary setting [2,3]. As such, we present a case report of a woman with oligometastatic recurrence of gallbladder carcinoma in the ovary.

Case Presentation

A 67-year-old female with past medical history significant for diabetes mellitus type 2, idiopathic thrombocytopenia purpura, hypertension, bilateral foot drop and cauda equina syndrome status post spinal fusion presented to the hospital for acute cholecystitis. The patient underwent a laparoscopic cholecystectomy and final pathology revealed adenocarcinoma of the gallbladder with infiltration to the soft tissues near the cystic duct. She then underwent an open cystic duct resection, portal lymphadenectomy, and 4b5 liver resection with the final pathology revealing no metastasis to the liver at the time. Following her surgical recovery, she began adjuvant therapy with Gemcitabine, Cisplatin, and Xeloda.

Post treatment positron emission tomography and computed tomography scan (PET/CT), however, revealed a new pelvic mass arising from the left ovary and patient was referred to Gynecology Oncology for surgical management. The patient obtained pre-operative tumor markers and her CEA was found to be elevated at 14.2, while CA-125 and CA19-9 were within normal limits. She subsequently underwent a laparoscopic bilateral salpingooophorectomy. Intraoperatively, the patient was found to have a 5cm solid firm mass arising from the left ovary and no other evidence of intra-abdominal disease. The left fallopian tube, right fallopian tube and right ovary were found to be grossly normal appearing. Intraoperative frozen pathology demonstrated adenocarcinoma likely metastatic in origin. Final pathology confirmed adenocarcinoma in bilateral ovaries, favoring metastasis from gallbladder. Immunohistochemistry was positive for CA 19.9 and CDX2, and negative for PAX8 stains, supporting metastasis of gallbladder adenocarcinoma as opposed to an ovarian primary malignancy. Recommendations were made to the patient to obtain systemic adjuvant chemotherapy.

Discussion

Many gallbladder adenocarcinomas are incidental findings, most commonly identified during cholecystectomy for seemingly benign conditions, such as cholecystitis. Early identification is confounded by the fact that symptoms can mimic, or occur concurrently with, much more common benign diseases such as cholecystitis or cholelithiasis. Metastatic spread commonly involves nearby organs such as the liver (76-86%), lymph nodes (60%), spleen, and kidney [4]. Other reported sites of metastasis include the brain, breast, and thyroid [4,5]. Unless treated promptly, this malignancy remains a major source of mortality worldwide [1].

Classically, Krukenburg tumor refers to an ovarian tumor with a gastrointestinal primary site. Most commonly, this refers to gastric adenocarcinoma [5]. In our presented case, the primary location was the gallbladder, which was suspected prior to the laparoscopic bilateral salpingo-oophorectomy. Several case reports have focused on gallbladder cancer metastasis to the ovary in primary setting [2,3]. To our knowledge this is the first reported case of gallbladder cancer metastasizing to the ovary in a metasynchronous fashion.

The optimal therapeutic options for these patients depend on a variety of factors, including location of primary tumor, and presence of additional metastasis. Due to the rarity of diagnosis, there are no studies which have looked solely at the treatment and prognosis of ovarian metastasis from biliary origin. Several studies have suggested Hyperthermic Intraperitoneal Chemotherapy (HIPEC)

may be beneficial in Krukenberg tumors with a gastric or colorectal primary [3,6].

One retrospective study reviewed prognosis of 147 patients with metastasis to the ovary from extragenital primary sites and reported the overall survival of approximately 6 months. The negative prognostic indicators included spread beyond the ovaries, local invasion, massive ascites, and bilateral ovarian metastasis [7]. However, it should be noted that only 2 patients presented with metastasis from a primary biliary carcinoma suggesting more research is needed for this subsect of patients [7].

Ovarian metastasis from a primary gallbladder cancer is a rare entity. It should be suspected in any patient with a history of biliary cancer presenting with a new-onset ovarian mass.

Consent

Informed consent was obtained from the patient for the publication of this case report.

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