Metastatic Ovarian Cancer to the Common Bile Duct:

A Case Report

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Abstract:

This case report details the clinical course of an 81-year-old female with a history of ovarian cancer treated with chemotherapy, who subsequently developed metastatic disease involving the pancreatic head and distal common bile duct (CBD), leading to malignant biliary obstruction. Despite initial intervention with endoscopic retrograde cholangiopancreatography (ERCP) and stent placement, the patient experienced disease progression, presenting with symptoms indicative of advanced disease and systemic involvement. This report underscores the challenges in managing metastatic ovarian cancer with atypical metastatic patterns and highlights the importance of a multidisciplinary approach in palliative care.

Introduction:

Ovarian cancer is known for its tendency to spread within the peritoneal cavity, leading to a range of complications. However, distant metastases, such as those involving the pancreas and bile ducts, remain rare. When malignant biliary obstruction arises in the context of ovarian cancer, it presents unique diagnostic and treatment challenges. This case underscores the complexity involved in managing such conditions and highlights the importance of personalized patient care strategies.

Clinical Course:

An 81-year-old female with a history of ovarian cancer treated with chemotherapy, presented one An 81-year-old female with a history of ovarian cancer treated with chemotherapy presented one month following her last chemotherapy dose with painless jaundice and weight loss. Laboratory tests revealed hyponatremia (129 mmol/L), hypokalemia (3.1 mmol/L), alkaline phosphatase (737 U/L), AST (83 U/L), ALT (90 U/L), and bilirubin (14.2 mg/dL). CT chest was notable for worsening bilateral pleural effusion, multiple lung nodules, and an ill-defined lesion in the pancreatic head and distal CBD. Dilated GB wall thickening without obvious cholelithiasis, pericholecystic fluid, and dilated intra/extrahepatic ducts were also reported. ERCP was performed with CBD and pancreatic duct stent placement. Biopsy of these lesions confirmed metastatic adenocarcinoma in the periampullary region, consistent with ovarian cancer.

Subsequently, the patient presented back to the hospital with 15lb weight gain, upper extremity edema, abdominal distension, and worsening dyspnea. Laboratory values showed worsening leukocytosis (15 cells/μL), hyponatremia (127mmol/L), and further elevation of liver enzymes. Repeat CT imaging confirmed peri-splenic ascites, anasarca, patent stents, and resolution of previous biliary dilation. A multidisciplinary discussion was had with the patient and family regarding possible interventions/treatment, along with the risks/benefits of each; a collaborative decision was made at that time to pursue hospice care.

Discussion:

Ovarian Cancer Overview:

Ovarian cancer originates in the ovaries, fallopian tubes, or peritoneum and is often asymptomatic in early stages. Common symptoms include abdominal distension, pain, bloating, early satiety, urinary urgency, vaginal bleeding, etc [1]. Metastatic ovarian cancer typically spreads via peritoneal dissemination, lymphatics, or hematogenous routes, with common sites including the peritoneum, liver, lungs, and bowel [2]. Bile duct involvement, however, is exceedingly rare, with only a few reported cases in the literature [3].

Mechanisms of Metastasis to the Biliary System:

Metastatic spread to the biliary system is uncommon but can occur through direct invasion, lymphatic spread, or hematogenous dissemination [4]. In this case, the presence of a pancreatic head lesion and distal CBD involvement suggests lymphatic or hematogenous spread. Malignant biliary obstruction typically presents with painless jaundice, pruritus, dark urine, pale stools, and abnormal liver function tests, symptoms of which were noted in our patient [5].

Imaging and Diagnosis:

CT, MRI, and MRCP are essential for characterizing biliary obstruction and detecting metastatic lesions [6]. In this patient, CT findings demonstrated an ill-defined pancreatic head lesion, biliary dilation, GB wall thickening, and ascites, supporting a diagnosis of malignant biliary obstruction secondary to metastatic ovarian cancer. ERCP is an advanced endoscopic intervention with the capability of addressing malignant and benign biliary obstructions. [7]

Management Challenges and Prognosis:

Biliary stenting via ERCP is a standard palliative intervention for malignant biliary obstruction. Advancement of disease, however, often necessitates further interventions such as percutaneous transhepatic biliary drainage (PTBD) or permanent metal stenting [8]. Prognosis for metastatic ovarian cancer is poor, especially if there is biliary involvement, with an estimated 30% 5-year survival [3]

Conclusion:

This case report highlights a rare presentation of metastatic ovarian cancer involving the pancreatic head and distal CBD. Although ERCP provided initial symptom relief, disease progression underscored the challenges of managing metastatic biliary obstruction. Early recognition, personalized treatment plans, and comprehensive palliative care remain critical in improving patient outcomes. Future research should further investigate the mechanisms of biliary metastasis and novel therapeutic strategies for this rare manifestation of ovarian cancer.

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