Bilateral ovarian metastases: An uncommon manifestation of pancreatic cancer

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ABSTRACT

Ovarian cancer is the second most common cancer in women and up to a fifth of all ovarian tumours are metastatic in origin. Among these metastatic tumors, the most common primaries are the gastrointestinal tract and breast. We report the case of a 66-year-old lady who presented with recent onset vague lower abdominal pain and distension who on evaluation was diagnosed to have bilateral ovarian metastases from a pancreatic primary. This case highlights the importance of considering metastasis and to include a pancreatic primary in the differential diagnosis of patients with bilateral ovarian tumours.

Keywords: Pancreatic adenocarcinoma, ovarian tumours, Krukenberg tumours

INTRODUCTION

Ovarian cancer is the second most common cancer in women after breast cancer. Up to a fifth of all ovarian tumours have been reported to be metastatic in origin. Excluding other gynaecologic cancers, gastrointestinal tract and breast are the most common primary sites for metastatic ovarian tumours. [3, 4] Such tumours are commonly referred to as Krukenberg tumours. [2] Ovarian metastases from a pancreatic primary are uncommon. It is important to differentiate between ovarian and pancreatic cancers as the treatments are different. We report a patient with bilateral ovarian tumours presenting as the predominant features secondary to a pancreatic primary.

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CASE REPORT

A 66-year-old lady was admitted with a week's history of anorexia, vague lower abdominal pain and distension. Her past medical history was relevant for hypertension, diabetes mellitus, dyslipidemia and thalassaemia trait. There was no family history of any gastrointestinal or gynaecological malignancy.

Clinical examination only revealed mild icterus and lower abdominal distension. There was no organomegaly and breast ex-

amination was normal.

Laboratory investigations revealed mild renal impairment and a cholestatic liver profile. An ultrasound scan of the abdomen and pelvis showed bilateral mixed echogenic cystic masses in the pelvis, consistent with bilateral ovarian tumours. There was also a small amount of free fluid in the abdomen. A computed tomography (CT) scan confirmed that the cystic masses were ovarian in origin (Figure 1a). Other abnormalities detected included a small amount of ascites, a dilated distal pancreatic duct and a distorted coeliac artery (Figures 1b and c). Detailed review of the reconstructed imaging showed that there was a mass in the body of the pancreas suspicious of a pancreatic tumour. The scan also incidentally showed a pulmonary embolism for which the patient was started on low molecular weight heparin. Careful evaluation of the CT scan did not show any abnormalities in the stomach, colon and biliary tree. Fine needle aspiration biopsies of the ovarian cystic tumours showed malignant adenocarcinomatous cells with no intra-cytoplasmic mucin on cytology and cell block examinations. The tumour cells stained strongly positive for cytokeratin (CK) 7, carcinoembryogenic antigen (CEA) and carbohydrate antigen (CA) 19-9. The tumour cells stained negative for CA-125 and CK-20, which excluding the possibility of either an ovarian or a colonic origin.

Repeated aspirations and analysis carried out several days later revealed the same findings. The serum tumour markers were elevated: serum CA-125 689.50 U/mL (range 1 to 35.0), CEA 196.51 ug/L, (0.5 to 5.0) and especially CA 19-9 >25,200 U/mL (0 to 37). The diagnosis of a pancreatic primary with ovarian metastases was made. Unfortunately, the patient declined further evaluation that included an upper gastrointestinal endoscopy or endoscopic ultrasound assessment of the pancreas. Her condition deteriorated rapidly and she died 22 days after admission. No autopsy was done for personal religious reasons.

DISCUSSION

Pancreatic cancer is the tenth most common cancer, and the fourth leading cause of cancer related death in both men and women. [1] Un-

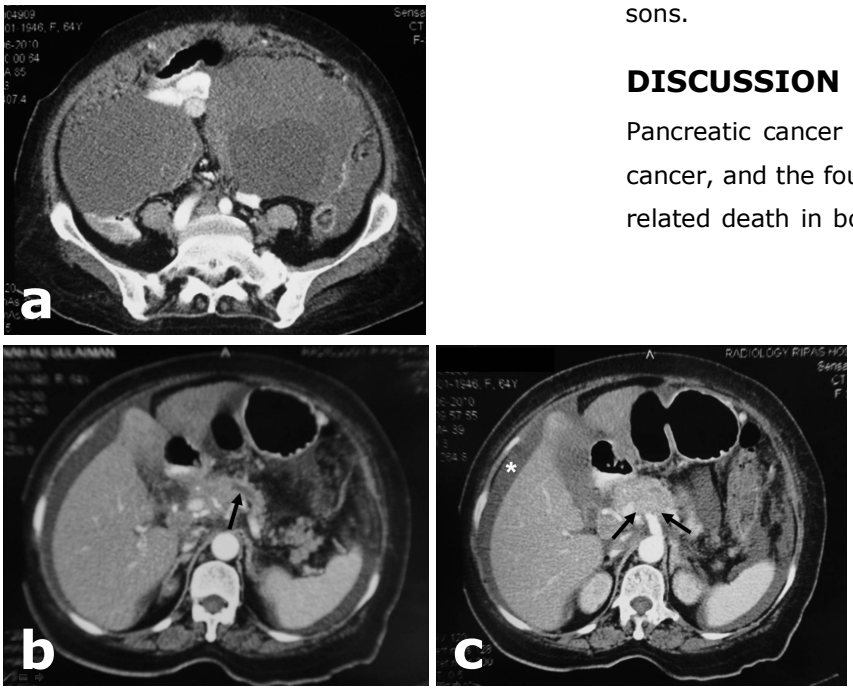

Figure 1: a) Axial computed tomography (CT) scan showing bilateral cystic ovarian mass and ascites, b) CT image showing a dilated distal pancreatic duct (black arrow) with abnormalities of the coeliac axis and, c) A CT image showing a pancreatic mass at the coeliac axis (black arrows) and ascites (white asterisk).

Unfortunately, most are still diagnosed at advanced stages with resultant poor five year survival rate of around 5%. [1, 2] The clinical manifestations can be varied and are dependent on the tumour types and locations. Obstructive jaundice, abdominal pain and pruritus are common in tumours located in the pancreatic head or neck regions, and presentations tend to be earlier. On the other hand, tumours located in the body or tail regions tend to present late and are usually advanced at diagnosis.

The presentations of the less common endocrine tumours are dependent on their functionality; early with symptoms of hormones excess in functional tumours and late with mass effect or metastases in non-functional tumours. [5]

Like any other cancers, the manifestations can be atypical, and this may contribute to the delay in diagnosis. Of these atypical manifestations, dermatological manifestations (Trousseau's syndrome or thrombophlebitis migran, Leser-Trélat syndrome or seborrhoeic dermatitis, and panniculitis) are the most common. [6-8]

Presentation with ovarian metastases as the initial manifestation is uncommon. Among all ovarian metastatic tumours, pancreatic primaries have been found in only up to 5.1% of cases. [2, 9-12] The stomach, colon and breast are the most common sites of the primary tumour, accounting for up to 79% and 35% respectively. [10-12] The variations in the reported rates can be explained by the differences in the incidence of primaries in different countries.

In general, ovarian metastatic tumours have been loosely referred to as the Kurkenberg tumour. However, based on the original description of the Kurkenberg tumour, the metastatic tumour is a signet ring cell adeno-carcinoma, hence more commonly associated with the gastrointestinal tract. [2] In our case, the histological examination did not show any evidence of intra-cytoplasmic mucin. However, it has been shown that examination of a larger section, or even the entire ovarian tumour may be required as signet cells may be patchy and may only be seen in part of the tumours. [2]

Traditionally, tumour dissemination resulting in ovarian metastasis or Krukenberg tumour is believed to be through intraperitoneal or transcoelomic spread. However, it has been shown that spread can be hematological based on findings of metastatic tumour located inside the ovary rather than on the surface. [2] The presence of ascites in our case may also favours transcoelomic spread.

The overall prognosis of metastatic pancreatic cancer is generally poor with a median survival of only a few months. Our patient only had symptoms for a week before presentation, and deteriorated rapidly resulting in her demise. Despite this, it is very important to differentiate the site of the primaries as treatments are different, especially for patients who are still eligible for treatment.

Treatment includes cyto-reductive surgeries followed by chemotherapy targeting the primary tumour. Survival rates have been shown to be significantly better for gynaecologic compared to non-gynaecologic (47% vs. 19%) primaries. [3] For non-gynaecologic pri-

maries, the five-year survival rates were also dependent on the primary tumour: lymphoma (181 mths), breast (54 mths), colorectal (48 mths), ileum (40 mths), stomach (18 mths), appendix (18 mths), unknown primary (16 mths), gallbladder (8 mths) and pancreas (3 mths). [11] Despite the overall poor prognosis, surgical resection of ovarian metastases may still play an important palliative role in the treatment of symptomatic patients with good performance status and may lead to longer survival.

In conclusion, our case highlighted that pancreatic carcinoma can manifest as bilateral ovarian metastases which can be the predominant feature. This may lead to diagnostic confusion and delay. Given that ovarian cancer is the second leading cancer in women and that up to a fifth of ovarian tumours are metastatic in origin, it is important to differentiate and locate the primary as treatment modalities and prognosis are different.

NOTE: Pei Yee ONN is a fourth year medical student with the Medical School of University of Otago, New Zealand. This work was done during her attachment

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