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Case Report
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Case Report: An Unusual Case of Primary Peritoneal Adenocarcinoma

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Abstract

Background: Primary peritoneal adenocarcinoma is sporadic with few cases cited in pre-existing literature. This cancer arises from the peritoneal epithelium lining of the abdomen, which is derived from extra ovarian mesothelium. It generally carries a poor prognosis. The treatment strategies are similar to ovarian serous papillary carcinoma. We report an incidental finding of primary peritoneal adenocarcinoma in 39-year-old female army personnel, currently undergoing her chemotherapy and thriving.

Results: Exploratory laparotomy was done given the incidental finding of a mass on the contrast-enhanced CT scan. The mass was attached to the greater omentum, however, did not invade the mucosa of the transverse colon. Given this, part of greater omentum was removed. The findings of the immunohistochemical studies of the tumour are described within our report. The diagnosis of a primary peritoneal adenocarcinoma, stage II was established as no other primary site was found upon further investigation. The patient was treated with chemotherapy (carboplatin/paclitaxel) which was planned for 6 cycles. Otherwise, the patient had an uneventful postoperative course, is underway her chemotherapy regime and is planned for interim CT study to assess chemotherapy response.

Conclusion: To conclude, isolated solitary primary peritoneal adenocarcinoma without peritoneal carcinomatosis, gastrointestinal manifestations and ascites are rare. This case, however, demonstrates the importance of its diagnosis, accurate evaluation and management.

Keywords: Peritoneal carcinoma; Adenocarcinoma; Omental tumor

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Introduction

Primary peritoneal adenocarcinoma is sporadic with only a few cases cited in pre-existing literature [1]. This type of cancer arises from the peritoneal epithelium lining of the abdominal and pelvic cavities, which is characterized by intraperitoneal carcinomatosis involving the peritoneum and omentum. For the most part, it occurs in menopausal or post-menopausal women. The incidence rate of primary peritoneal carcinoma was reported at 6.78 per 1000,000 individuals in the United States [2]. It carries a poor prognosis with a mean survival rate of 5 years at 40% of the recorded cases. Histologically it is similar to an ovarian tumour due to the embryonic origin of the peritoneum [3]. This tumour typically presents with abdominal discomfort, distension, other gastrointestinal complaints and less commonly a discernible mass. We present a unique case of a 39-year-old patient, who initially presented with symptoms mimicking pulmonary tuberculosis with the absence of gastrointestinal manifestations. She was later diagnosed with primary peritoneal adenocarcinoma.

Case Presentation

A 39-year-old woman presented to her city health services in February 2020 with a history of dry cough, unintentional weight loss of 14 kg over two months, loss of appetite and occasional fever. Subsequently, she was referred to our centre for further evaluation. Upon additional history taking, she denied any altered bowel habits, acid reflux, hematemesis, nausea, nor vomiting. Physical examination on admission was unremarkable. The patient was then worked up for tuberculosis due to the suggestive history. Mantoux test showed 15 mm induration however other laboratory investigations such as sputum acid-fast bacilli, Erythrocyte Sedimentation Rate (ESR), MTB PCR and bronchoalveolar lavage yielded negative results. Carcinoembryonic antigen, cancer antigen 125 and cancer antigen 19 to 9 studies were within the normal range. On day 2 of admission, the patient developed a high-grade temperature, and she was thereafter started on intravenous Tazobactam and

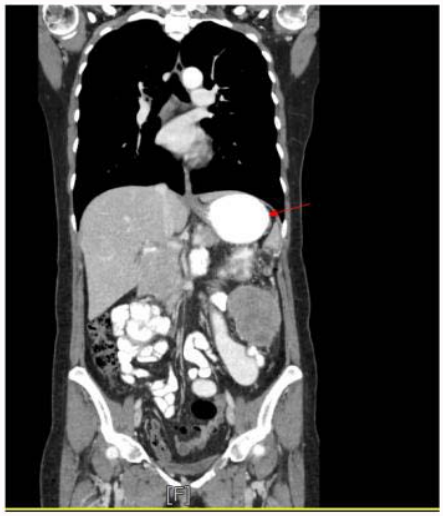

Figure 1: Contrast enhanced CT abdomen coronal view. Left-sided broad soft tissue mass measuring approximately 6.4 cm × 5.5 cm × 6.3 cm.

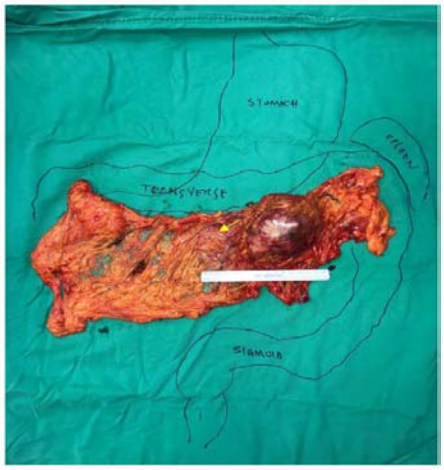

Figure 2: Omental mass at greater omentum.

Ceftriaxone. Due to inadequate response to the antibiotic regime, a contrast enhanced CT Thorax, Abdomen and Pelvis was done in hopes to locate the foci of infection. The CT study revealed a broad left-sided soft tissue mass measuring approximately 6.4 cm × 5.5 cm × 6.3 cm with tortuous surrounding vessels (Figure 1). The aforementioned lesion was in close contact with the bowel displacing it medially. Based on these findings, an exploratory laparotomy was done for the patient and revealed a large mass attached to the greater omentum that did not invade the mucosa of the transverse colon. Subsequently, part of greater omentum was removed. Histopathological examination of this mass revealed poorly differentiated adenocarcinoma of the omentum. Immunoprofiling suggested either primary peritoneal carcinoma or metastasis from the following primary areas, i.e., thyroid, salivary glands, breast, lung and ovary. This patient was then sent for a PET CT which confirmed the diagnosis of primary peritoneal adenocarcinoma, stage II [4]. The PET CT (Figure 2 and 3) had no significant finding, no hypermetabolic activity at the previous surgical site likely keeping with complete excision of tumour. Thereafter, the patient was treated with chemotherapy (carboplatin/paclitaxel) which was initiated in May 2020 planned for 6 cycles the patient otherwise has had an uneventful postoperative course and is

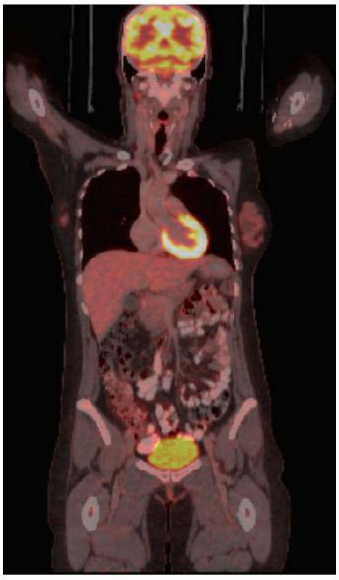

Figure 3: PET scan shows no evidence of an FDG avid lesion to suggest a primary site of disease. No hypermetabolic activity at the previous surgical site likely keeping with complete excision of tumour.

underway her chemotherapy regime.

Discussion

Primary peritoneal adenocarcinoma tumour is a rare malignancy which arises from extra ovarian mesothelial cells with Mullerian potential. Different nomenclatures have been used including serous surface papillary carcinoma [5], primary peritoneal papillary serous adenocarcinoma [6], and serous surface carcinoma of the peritoneum [7], extra ovarian peritoneal serous papillary carcinoma [8], papillary serous carcinoma of the peritoneum and peritoneal papillary carcinoma [9]. This malignancy was first reported in 1959 by Swerdlow et al. [10]. The most common presenting symptoms of PPAC are abdominal distension, abdominal pain and reduced appetite; however, in our case, this particular patient lacked gastrointestinal related symptoms. It occurs almost exclusively to menopausal and post-menopausal women; however, a case of primary peritoneal adenocarcinoma in a male was reported by Shmeuli et al. [11]. Our case is unique in its presentation of atypical clinical features, an isolated omental mass without a peritoneal spread and not being within the usually reported age group. Radiological imaging has proven to be a valuable tool in diagnosing and guiding surgical management. In our patient, the contrast-enhanced CT was the primary modality that aided us in diagnosing this patient, whereas the PET CT played a vital role in defining the extent of the underlying malignancy and its ability to detect distant metastasis. In postoperative immunohistological examinations, PPAC is typically positive for cytokeratin-7, CA-125 estrogen receptor and Wilms Tumour -1 (WT-1). In the current case, only cytokeratin-7 was positive. However, it was not tested for Wilm's tumour. Patients with primary peritoneal adenocarcinoma ideally should be treated with cytoreductive surgery followed by chemo regimen similar to Ovarian Serous Peritoneal Carcinoma (OSPC). Platinum-based combination chemotherapy identical to ovarian cancer is widely recommended Ayhan et al. [12]. Reported 32 PSPC and 43 OSPC patients who received adjuvant chemotherapy, carboplatin and paclitaxel after cytoreductive surgery [12]. No significant difference was noted

concerning clinical or surgical response. Another clinical trial of platin based chemotherapy for 33 patients by David et al. [13] noted the median survival time for all patients was 17 months, and three patients were a live 6 to 7 years after diagnosis was established. The patient was treated with chemotherapy (carboplatin/paclitaxel) which was planned for 6 cycles. Otherwise, the patient had an uneventful postoperative course, is underway her chemotherapy regime and is planned for interim CT study to assess chemotherapy response.

Conclusion

An isolated solitary primary peritoneal adenocarcinoma without peritoneal carcinomatosis, ascites and gastrointestinal symptoms are extremely rare. This case demonstrates the importance of its diagnosis, accurate evaluation and management for a favourable outcome.

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