Oncology

Isolated Non-ascitic Peritoneal Carcinomatosis from Metastatic Prostate Cancer

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ABSTRACT

Prostate cancer most commonly metastasizes to bone, lung and liver. Omental metastasis of prostate cancer is extremely rare, with only a few cases reported in the literature, many of which have associated ascites. We present a case of non-ascitic omental metastasis of prostate cancer without any bone metastases. Furthermore, this patient has had two negative measurements of circulating tumor cells (CTCs) in the blood, suggesting a non-hematogenous route of metastasis to the omentum.

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Introduction

Peritoneal carcinomatosis secondary to prostate cancer (pCa) with no further metastases is very rare, with only four reported cases in the available literature, all presenting with ascites. Port-site metastasis after minimally invasive urological surgery is similarly rare despite the widespread use of laparoscopic techniques in the management of urological malignancies. We report a case of possible port-site metastasis and subsequent peritoneal carcinomatosis following robot-assisted radical prostatectomy.

Case report

A 60-year-old man presented with an elevated prostate-specific antigen (PSA) of 9.5 ng/mL in 2010. Transrectal biopsy of the prostate revealed Gleason 3 + 4 prostatic adenocarcinoma. Robotic prostatectomy was performed at an outside hospital in October 2010 and after surgery, the PSA never became undetectable. The patient subsequently received adjuvant hormone therapy and salvage radiation therapy in April 2011. A bone scan performed in October 2011 was negative for metastatic disease. In March 2012, the PSA nadir was 0.02; rising with a doubling time of 3.4 months to reach 5.6 before starting ADT.

Baseline scans in September 2013 were a bone scan negative for metastatic disease and a CT chest/abdomen/pelvis scan showing a 0.9 × 1.1 cm indeterminate omental nodule, located on the right side just proximal to the prostatectomy exit port above the umbilicus. In February 2014 he reached a new PSA nadir of 0.4. A repeat CT scan then showed that the soft tissue nodule in the omentum had decreased in size from 1.1 cm to 0.8 cm with the onset of ADT. In February 2015, PSA was 4.1, bone scan again was without evidence of metastatic disease, and CT scan showed the omental nodule increased to 1.4 cm with a new adjacent subcentimeter nodule. PSA continued to increase with a 2.2 month doubling time, reaching 11.4 on 5/21/15.

Patient underwent CT-guided omental biopsy in April 2015, which stained positive for racemase and PSA, consistent with metastatic poorly differentiated carcinoma of prostatic origin. The same month a circulating tumor cell (CTC) assay, involving immunomagnetic sample enrichment with fluorescent antibody staining, showed zero tumor cells in the blood. Repeat bone scan in May 2015 showed no evidence of metastatic disease to bone and CT chest/abdomen/pelvis showed the omental nodule that now measured 1.7 × 1.4 cm in size (Fig. 1).

Patient subsequently underwent a total omentectomy in May 2015. Pathology of the resected omentum showed a 2.5 cm, firm...
metastasis. Reported cases in the literature of pCa with omentum as its only site of metastasis to the peritoneum is extremely rare, even more so in the absence of any bony involvement. The possibility of discovering whether or not seeding from a port-site metastasis occurred is and will likely remain unclear. The positive margin after laparoscopic prostatectomy also suggests that the cancer could have metastasized shortly after the prostate removal before pelvic radiation 6 months later.

Our patient's PSA substantial decrease following omentectomy suggests that omentum was the first site of metastasis. Whether or not this is a port-site metastasis will likely remain unclear, but what is definitive is the fact that we have a case of isolated peritoneal carcinomatosis without ascites unlikely to have resulted from hematogenous spread.

Conflict of interest
None.

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