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Title

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Permalink

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Journal

Proceedings of UCLA Health, 22(1)

Authors

Hu, Eddie

Keung, Yi-Kong

Publication Date

2018-02-03

CLINICAL VIGNETTE

Solitary Spinal Epidural Metastasis from Ovarian Cancer

Eddie Hu, MD and Yi-Kong Keung, MD

Introduction

Most cases of metastatic epidural tumor arise from tumor expansion of vertebral metastasis that grows into the spinal canal. We present a case with a solitary metastatic epidural tumor from ovarian cancer but with no vertebral metastasis. We believe this is the first reported case of solitary epidural metastasis from ovarian cancer.

Case Report

The patient is a 49-year-old female who presented with left lower abdominal pain in early 2016. Ultrasound and subsequent CT scan showed a large ovarian mass. She underwent exploratory laparotomy, total abdominal hysterectomy, bilateral salpingo-oophorectomy, bilateral pelvic and periaortic nodal dissection, omentectomy and tumor debulking surgery. Pathology revealed a high grade serous carcinoma of the left ovary, 11.8x 9.6 x 3.3 cm in size with 1/14 periaortic nodal involvement, T2b, N1, stage IIIA1.

Postop the patient received adjuvant chemotherapy, 6 cycles of carboplatin and taxol, completed 5 months after surgery from her local gynecologic oncologist. CA 125 normalized from over 1,000 preoperatively to 17-19 range. BRCA testing was negative for deleterious mutations. One year after surgery, she noted onset of left shoulder and arm pain. She was evaluated with negative plain radiographs of her neck and shoulder and repeated CA 125 remained normal at 18.

Six months later, her CA 125 level rose to 33 and patient's gynecologist referred her to medical further evaluation. Repeat CT scan of her abdomen and pelvis was unremarkable, but subsequent PET scan noted hypermetabolic lesion at C7 only. MRI cervical spine revealed an intradural, extramedullary lesion at C7, felt by the neuro-radiologist to most consistent with nerve sheath tumor.

With positive PET scan and rise in CA 125 level, as well as by now worsening symptoms of left neck and arm pain, she was referred to neurosurgery and underwent resection of an epidural tumor. Pathology showed metastatic serous carcinoma consistent with ovarian primary. Her post op CA 125 level decreased to 18. She received post-op consolidative radiation to this area. Although the role of additional chemotherapy is undefined in this situation, this option was also discussed with the patient, who declined further chemotherapy.

Discussion

Metastatic epidural spinal cord compression is a common neurological complication of cancer. The most common way metastatic cancer reaches the epidural is by hematogenous metastasis to the vertebral body with subsequent growth from the bone to the epidural space. This occurs in 85% of the cases.¹ Less common is from invasion by a paravertebral tumor directly into the spinal canal through the intervertebral foramen in 15% of the cases.¹ This is generally seen in patients with lymphomas, Ewing's sarcoma or neuroblastomas. The least common way, less than 1%, is by direct hematogenous spread to the epidural space.¹

Batson² proposed that an epidural internal vertebral venous plexus and the vertebral venous plexus communicate closely and slow blood flow allowing cancer cells to implant in the spine, resulting in metastasis to the epidural space via the Batson venous plexus.

Solitary epidural metastasis without initial bone involvement, has been reported rarely in patients with lung, gastric and small cell prostatic cancers.^{3,4} No previous cases of solitary epidural metastasis from ovarian cancer has been found in PubMed.

The sensitivity and specificity for metastatic bone involvement with tumor is high for MRI, 91%/ 95% and PET 90%/97%.⁵ Both modalities failed to show any evidence for underlying bone involvement in our case.

Although the rise in CA 125 level in our patient was small, and despite normal CT scans of the chest, abdomen and pelvis, PET scanning fortuitously noted a solitary hypermetabolic epidural lesion, which lead to further testing and treatment. Post-surgery, our patient's CA 125 level dropped to normal, confirming that the epidural metastasis was the cause for the rise in CA 125 level.

Our patient was also initially evaluated by neurologists and orthopedic surgery and both felt that her epidural lesion was benign. The rise in CA 125 level and PET positivity pushed us to proceed with resection of the epidural lesion. Increased clinical awareness of this usual site of solitary metastasis for ovarian cancer, would alert physicians to pursue symptoms for solitary epidural lesions earlier and more aggressively.

The mainstay of treatment in such cases is surgery that serves to remove the tumor and confirms diagnosis. This is normally

followed by post op radiation therapy with IMRT or stereotactic radiation. The role for adjuvant chemotherapy in this case is undefined.

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Submitted February 3, 2018