Metastatic cervical adenocarcinoma mimicking retroperitoneal sarcoma of the psoas muscle on imaging

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Summary

Background: The incidence of bone metastasis is low in metastatic cervical cancer, especially in the case of adenocarcinoma. Incidental finding of a mass located in an unusual metastatic site in the absence of identifiable primary tumor often results in a difficult diagnostic problem. *Case report:* We report the case of a 59-year-old woman presenting left-sided foot drop as her initial symptom. At first, after performing lumbar spine magnetic resonance imaging (MRI), a huge paravertebral mass with ipsilateral psoas muscle involvement suggesting retroperitoneal sarcoma was identified. However, cervical punch biopsy and sono-guided paravertebral mass biopsy revealed cervical adenocarcinoma with lumbar spinal metastasis. *Conclusion:* Although rare, a neurological symptom such as foot drop, not vaginal symptoms, in a woman may be a first manifestation of metastatic cervical cancer, especially in spinal metastasis. Furthermore, any abnormal lesion should not be ignored because of the possibility of metastasis from the primary malignancy, especially in the current case of cervical adenocarcinoma, so a complete evaluation is always mandatory.

Key words: Cervical cancer; Adenocarcinoma; Retroperitoneal sarcoma; Spinal metastasis.

Introduction

Cervical cancer is the second most common malignancy in women worldwide [1]. Metastases from cervical cancer usually originate in the pelvic cavity for more distant sites. However, bone metastases are relatively infrequent, occurring in 3% to 4% of patients [2, 3]. Tumor spread to bone generally occurs by direct invasion or through lymphatic or venous channels of the pelvis, particularly those conduits that communicate with the paravertebral venous plexus [4]. Herein, we report the case of a patient who presented with a paravertebral soft tissue mass, suggesting retroperitoneal sarcoma originating from the psoas muscle, but was finally proven to be cervical adenocarcinoma with lumbar spinal metastasis.

Case Report

A 59-year-old woman, who was gravid 6, para 2, presented to the Emergency Department at Guro Hospital, College of Medicine of Korea University with complaints of left-sided foot drop. The patient had suffered from low back pain radiating to the left leg for two months, but her symptoms did not improve after conservative management. MRI scan of the lumbar spine at a local clinic revealed a large paravertebral mass at the L4-5 region. When the patient presented to our hospital, a neurologic examination was performed and revealed no other abnormalities. She then proceeded to a MRI scan of the lumbar spine and a 8 x 7 cm paravertebral mass abutting the L4-5 vertebrae with direct extension to the L4-5 body and left transverse process, suggesting retroperitoneal sarcoma such as leiomyosarcoma or dedifferentiated liposarcoma (Figure 1). Left L4-5 nerve root involvement was suspected, with left psoas and iliacus muscular involvement. In addition, a large heterogenous mass with enhancement at the uterus with a 2.5 cm-sized, enlarged right iliac lymph node was also observed. She was, then, referred to the Department of Obstetrics and Gynecology for evaluation of a possible uterine malignancy.

The patient's menses had ceased at 55 years of age. She had no complaints of vaginal bleeding or low abdominal discomfort. She had never had a Pap smear. On pelvic examination, the cervix was small and no specific abnormalities were observed. A Pap smear and Hybrid Capture 2 test were performed, which revealed adenocarcinoma (endocervical type) and high-risk human papillomavirus (HPV), respectively. A colposcopic-guided biopsy was performed and confirmed adenocarcinoma (endocervical type; Figure 2). Serum CA-125 and CA 19-9 were elevated (2330 U/ml and 304.95 U/ml, respectively), whereas the squamous cell carcinoma (SCC) antigen was in the normal range. An endoscopic examination of the stomach and colon showed no evidence of metastasis and the chest X-ray was normal. Mammography and breast sonography were within normal limits.

Pelvic MRI showed an approximately 13 cm uterine mass, suggestive of a uterine myoma with an enhancing solid lesion in the uterine cervix (Figure 3A). In addition, there was an approximately 7 cm-sized mass in the paravertebral area with direct extension to the L4-5 vertebrae, which was previously shown by lumbar spine MRI, and enlarged lymph nodes in the right obturator fossa and the left paraaortic area suspicious of multiple lymph node metastases. On whole body PET-CT scan, a huge hypermetabolic mass-like lesion was seen adjacent to the left psoas muscle, suggesting metastasis (Figure 3B). Intravenous pyelography showed multiple renal stones in the left kidney, but there was no evidence of hydronephrosis. Finally, a sonographic-guided biopsy of the left paravertebral mass was performed and the mass was proven to be metastatic carcinoma.

The final pathologic diagnosis was eventually proven to be a cervical adenocarcinoma with L4-5 spinal metastasis. After radiation treatment, low back pain and foot drop were improved.

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Fig. 1

Fig. 2

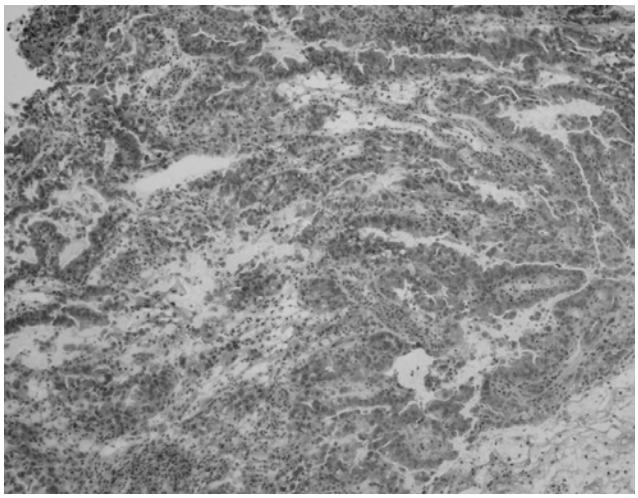

Fig. 3

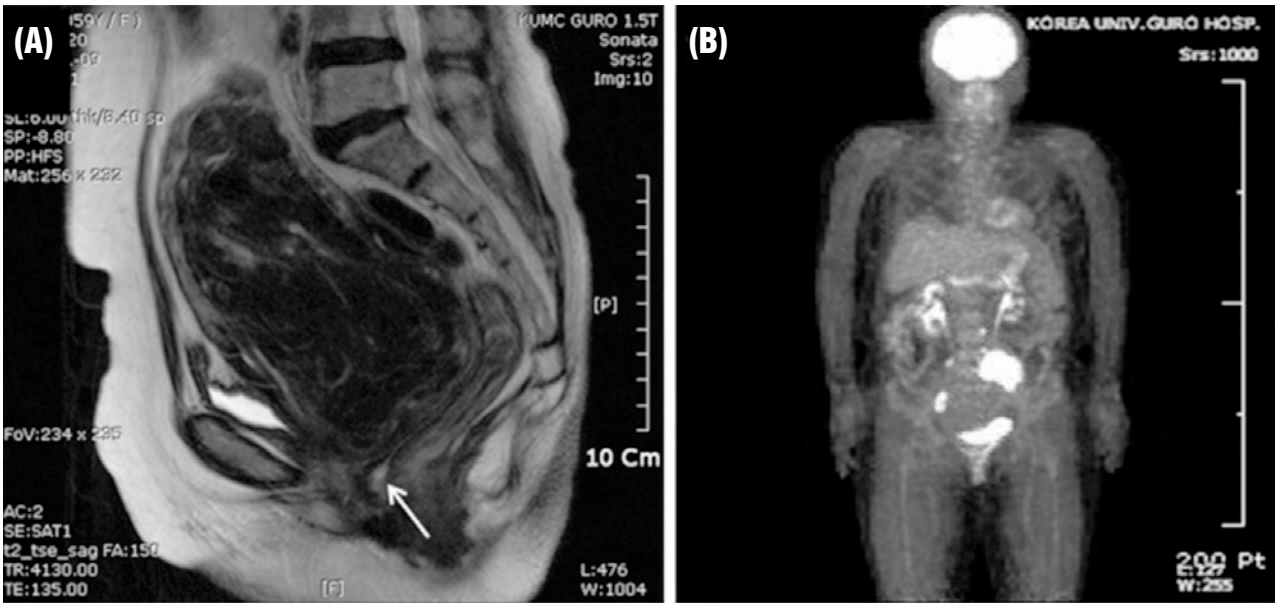

Figure 1. — Lumbar spine MRI showing a 8 x 7 cm sized left paravertebral mass abutting the L4-5 vertebrae (arrow) with direct extension to the L4-5 body and left transverse process.
Figure 2. — Punch biopsy of the uterine cervix exhibiting adenocarcinoma, endocervical type (H&E x 200).
Figure 3. — (A) Pelvic MRI shows a poorly defined cervix with enhancing solid lesion (arrow). The upper portion of the cervix reveals a huge uterine mass, suggesting uterine myoma. (B) Hypermetabolic lesions were seen in the left paravertebral area and right obturator fossa by whole body PET-CT scan.

Discussion

Bone metastases occur in 1.8% to 6.6% (mean 4.6%) of patients with cervical carcinoma [2, 3, 5-7]. The spine is the most common site, with a reported incidence of 54.2% [2]. In another report, 50% of all vertebral metastases were to the lumbar spine, followed by the thoracic (41%) and sacral spine (9%) [3]. However, the relationship between the original histologic type of cervical cancer and bone metastasis revealed that 88% of cervical cancers with bone metastasis are squamous cell carcinomas, whereas adenocarcinomas consisted of a much smaller proportion (7.7%) [8]. In the current case, the histologic type was adenocarcinoma (endocervical type).

Spinal involvement usually occurs by direct extension of the tumor from a paraaortic lymph node mass, or hematogenously via the paravertebral venous plexus [2]. Metastasis to the thoracic and lumbar spine occurs through direct extension and lymphatic spread, whereas metastasis to more distant areas, including the cervical spine, is probably due to hematogenous spread [9].

In the current case, the patient's initial complaint was not vaginal bleeding, which is the most common symptom of cervical cancer, but left-sided foot drop. The colposcopic examination also failed to reveal any abnormal finding. For this reason, we initially could not come up with an idea that the paravertebral mass originated from the uterine cervix. Instead, retroperitoneal sarcoma such

as leiomyosarcoma or liposarcoma originating from the psoas muscle was strongly suspected. It may cause a variety of neurologic symptoms and is often clinically undetectable [10]. The foot drop may be attributed to the involvement of the L4-5 spinal nerve root, which is the origin of the sciatic nerve that divides into the deep peroneal nerve leading to foot drop. Examples of neurologic symptoms related to spinal involvement in retroperitoneal sarcoma include paraplegia, numbness, loss of sensation, and motor disturbances depending on the specific sites of involvement [11]. Similarly, these neurologic symptoms may appear at a time subsequent to the diagnosis and primary treatment of cervical cancer. In contrast, the patient described herein presented with foot drop as the initial symptom of cervical cancer, making the diagnosis somewhat confusing.

Another reason for the delay in the diagnosis of metastatic cervical cancer may be attributed to the histologic type of the cancer. In the current case, the histologic type was adenocarcinoma and there was no exophytic mass visible on the cervix, which may account for the absence of abnormal vaginal bleeding.

We reported a case of cervical cancer with spinal metastasis incidentally diagnosed by virtue of sudden foot drop as an initial symptom of the disease. This case also highlights the fact that metastasis from cervical carcinoma can present as a retroperitoneal sarcoma. Therefore, it should be kept in mind that a symptom rarely seen in the gynecologic field, such as foot drop, can be the clue to find out the hidden gynecologic malignancy. Furthermore, any abnormal mass should not be ignored because of the possibility of metastasis from the primary malignancy, so a complete evaluation is always mandatory.

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