Radiculopathy Caused by Internal Iliac Artery Pseudoaneurysm Managed with Endovascular Embolization

The authors describe a case of pseudoaneurysm arising from internal iliac artery presented with radiculopathy mimicking the symptoms of lumbar disc disease or spinal cord tumor. Among the several preoperative evaluation including CT, MRI, electrophysiologic study and ultrasonography, important diagnostic clue was obtained by ultrasonographic findings of turbulence flow at the core of partially enhanced mass in the pelvic cavity. The patient was managed with endovascular coil embolization successfully. The current case makes us remind that assessment of neurological symptoms on lower extremity should include consideration of extraspinal cause in pelvis.

KEY WORDS: Pseudoaneurysm • Internal iliac artery • Radiculopathy • Endovascular embolization.

INTRODUCTION

The most common cause of the neurological symptoms on the lower extremities comes from the area around the spinal canal or spinal root. When the clinicians examine such patients, the lumbar disc herniation or spinal cord tumor are initially considered. However, a lesion on extraspinal area could be a cause of the neurological presentation on lower extremity. The authors describe a case of pseudoaneurysm in the pelvic cavity presenting radiating pain and motor weakness on lower extremity like symptoms of lumbar disc herniation or spinal cord tumor.

CASE REPORT

A 58-year-old woman presented with radiating pain on L5 and S1 dermatomes and weakness of right lower extremity, especially the ankle dorsiflexion grade II. The symptom had started one year before and aggravated gradually. On lumbar and thoracic spine magnetic resonance image (MRI), however we could not find any lesion which could explain her neurological symptoms (Fig. 1). The electrophysiologic examination showed multiple lumbosacral radiculopathy such as cauda equina syndrome mainly on the right side. She had a history of high-dose pelvic irradiation for the cervical cancer of uterus 10 years ago. Pelvis MRI, checked at gynecology department, showed a 5.5 × 7 cm sized heterogeneously enhancing mass on the left presacral area. The mass eroded the sacral bone, resulting

![Fig. 1. Lumbar and thoracic spine T2-weighted magnetic resonance image showing no abnormality on thoracolumbar area.](image-url)
pseudoaneurysm was embolized with 8 coils of 10 mm and 12 mm rolling diameter delivered from the 5 F DAV’s catheter (Fig. 4). After embolization, the radiating pain was improved immediately and the motor weakness on the right lower extremity recovered gradually during 3 months except weakness of ankle dorsiflexion. The weakness of ankle dorsiflexion was not improved significantly until one year follow up. The follow-up computed tomography, obtained 2 months and 1 year after embolization, showed significant decrease in the size of pseudoaneurysm (Fig. 5).

**DISCUSSION**

Although radiculopathy is usually attributed to degenerative disc disease such as a herniated intervertebral disc in the lower lumbar spine, it may be related by other less common causes. The reported cases of extraspinal cause of lumbosacral radiculopathy were sporadic and overall incidence was seldom reported. Kleiner et al. reported that the incidence of extraspinal cause of lumbosacral radiculopathy was about 0.09% from the reviewing study of 12,125 patients who had spinal disorder.

Recently reported extraspinal causes include tumor of bone or soft tissue, pseudoaneurysm or aneurysm of the internal iliac artery, inferior gluteal artery, abdominal aorta or other pelvic artery, and compartment syndrome or entrapment neuropathy. The various iatrogenic causes of pseudoaneurysm or arteriovenous fistulas in the pelvis were also reported, such as transvaginal needle biopsy, renal transplantation, lumbar disc surgery, and radiation therapy like current case.

The vascular lesion in the deep pelvic cavity could present radiating pain and motor weakness mimicking symptoms of herniation of lumbar disc or spinal cord tumor. The importance of clinical history and examination in the diagnosis of these lesions cannot be overemphasized. The current case makes us remind that assessment of neurological symptoms on lower extremity include consideration of
extraspinal cause though it is rare.

Reviewing the previous lumbar spine MRI retrospectively, we could find out the mass at the extreme parasagittal section. However, it was difficult to distinguish partially sectioned mass from the pelvic organ or bowel signal. Moreover, the routine axial section didn’t cover to the bottom of sacrum (Fig. 6).

MR imaging with CT or MR angiography may not provide a valuable data for diagnosis in chronic contained pseudoaneurysm filled with blood products. For evaluation of mass or vascular lesion in the deep pelvic structure, the role of ultrasonography should be emphasized. In this case, the ultrasonography provided crucial clue in the diagnosis and the decision for the treatment plan. Treatment strategies for the pseudoaneurysm in the deep pelvis could be either surgical excision or endovascular technique. In some of surgery cases, however, because of incorrect preoperative diagnosis, the surgeons may be confronted with severe and unexpected hemorrhage and the surgery can be aborted without effective treatment.2,4,10

Also, ligation of proximal artery during surgery may cause ischemic necrosis of leg.4,10 Many of successful endovascular treatments for internal iliac artery pseudoaneurysm have been reported.4,5,9,16,17 Based on ultrasonographic findings, we changed treatment plan from surgical excision to endovascular embolization that could avoid potentially lethal situation.

CONCLUSION

The vascular lesion in the deep pelvic cavity could present radiating pain and motor weakness mimicking herniation of lumbar disc or spinal cord tumor. The ultrasonographic evaluation and endovascular embolization are considered as valuable tools for diagnosis and management for the vascular lesion for the deep pelvic area.

References


