

Large Sized Common Iliac Artery Aneurysm with Thrombus Developing a Diagnostic Confusion in a Patient with Sciatica

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The causes of sciatica are variable and include musculoskeletal, dermatologic, infectious, neoplastic, and vascular disorders. In many cases, the symptom is usually caused by degenerative disease in the spine with the compression or irritation of spinal nerve. On the other hands, there are also several announced extra-spinal causes including aneurysm, diabetes, and radiation for sciatica in a low rate. Among the extra-spinal cases, aneurysms arising from iliac vessels are sometimes developing a diagnostic confusion with the spinal causes, and delayed diagnosis can lead to poor prognosis. It is very important to pay attention whether the aneurysmal cause is involved in the symptom of sciatica. (Korean J Pain 2014; 27: 360-364)

Key Words:

iliac aneurysm, lumbar spine, sciatica.

An aneurysm of the common iliac artery is very rare, with an estimated prevalence of 0.008–0.03% in the general population [1]. A sciatic nerve lesion caused by an aneurysm in the pelvic cavity is also rare, hence, it may cause diagnostic confusion in patients presenting with radiculopathy. When a patient has sciatica or radicular symptoms, the clinician usually looks to the spine first for the origin of the symptoms, while extra-spinal causes such as an aneurysm are less commonly considered during the differential diagnosis [2,3].

A lesion on the extra-spinal area, such as those caused by iliac vessel aneurysms, although much less common, could be a cause of neurological presentations such as sciatica, and a delayed diagnosis may lead to a poor pro-

gnosis. Below, we report on a rare case of a patient with sciatica that was caused by a growing iliac artery aneurysm with a thrombus inside in it.

CASE REPORT

An 80-year-old female patient who has a history of taking agents for hypertension and diabetes mellitus (The patient personally discontinued the medications two weeks ago) for more than 20 years was transferred to our emergency room from another medical center with sudden developed dyspnea and drowsy consciousness. She presented abdominal distension and hypovolemic status with 85 mmHg systolic blood pressure. The patient had visited two

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other hospitals and magnetic resonance imaging (MRI) for lower back pain and left sciatica which were developed three months ago had been performed respectively. The leg symptom was dominant on L4 and 5 dermatomes, but specific and definite dermatome was not noted. The straight leg raise test and the sign of myelopathy showed negative results. In each hospital, she received several times of epidural block under the impression of left neural foraminal and subarticular stenosis on L4-5 (Fig. 1A). The

symptom was sustained by a shortening of interval and an increasing of intensity, although there were some alleviations of the symptom immediately after the procedures. She developed sudden and severe abdominal pain while staying in a rest room after a left L4 and 5 selective transforaminal epidural block using triamcinolone and bupivacaine at the second-visit hospital. There were no abnormal signs related with procedure and chemical laboratory studies except mild elevation of serum creatinine

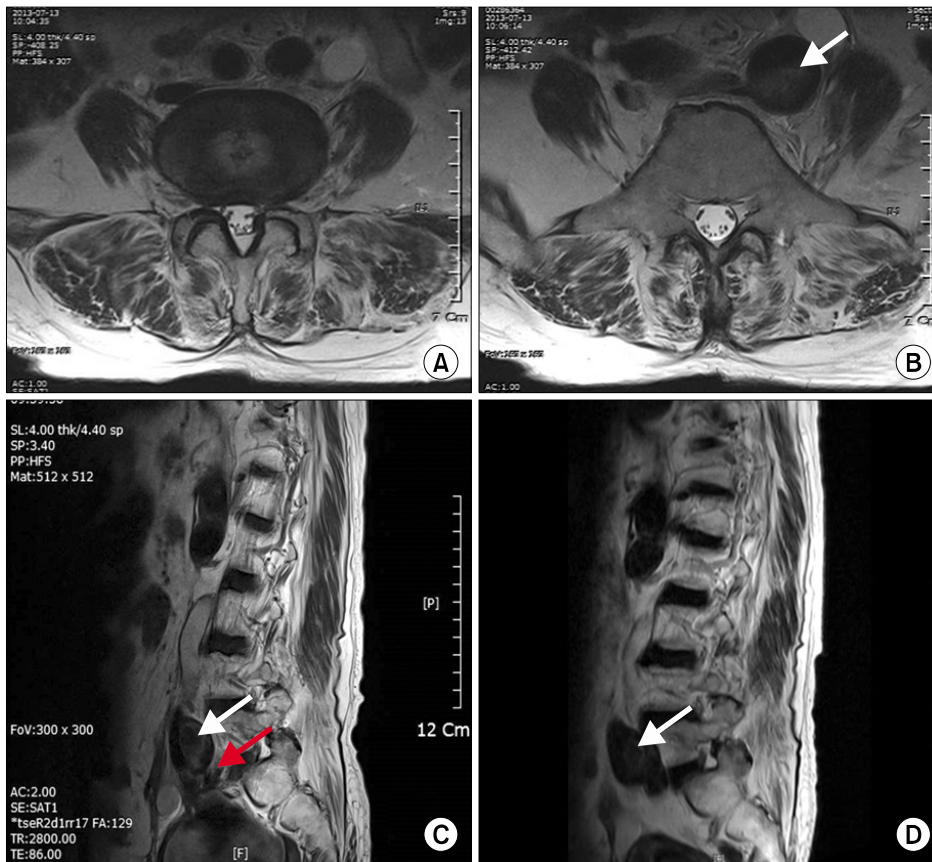


Fig. 1. Non-contrast magnetic resonance imaging (MRI) of the lumbar spine. Axial T2-weighted images (A) show disc bulging and left foraminal and subarticular stenosis of L4-5. There is a large sized aneurysm with thrombus (white arrow) arising from left common iliac artery of L5 body level with irritating the surrounding lumbosacral plexus (red arrow) on axial (B) and sagittal (C) images. Thrombus inside of the aneurysm shows a tendency to grow compare to previous MRI (D) at the first-visit hospital.

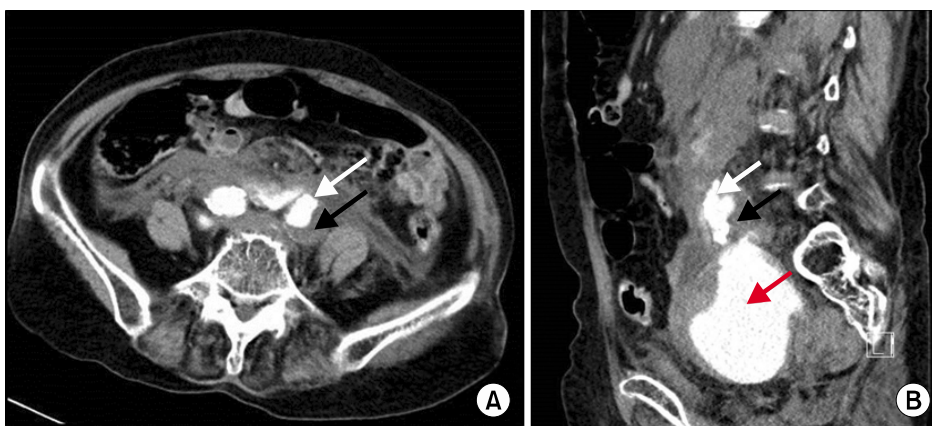


Fig. 2. Enhanced whole abdominal computed tomography (CT). CT shows huge hematoma presenting as a leakage of dye (red arrow) on retroperitoneal space and a calcified large sized fusiform aneurysm containing thrombus and arising from left common iliac artery. There are true (white arrow) lumen filled with dye and false lumen (black arrow) occupied with thrombus inside of the vessel.

(1.46 mg/dl). The abdominal pain was aggravated without any alleviation under painkillers and she was transferred to our emergency room. Whole abdominal computed tomography (CT) was performed for evaluating abdominal symptom and it revealed a huge hematoma presenting as a leakage of dye on the retroperitoneal space with calcified large sized fusiform aneurysm containing thrombus and arising from the left common iliac artery (Fig. 2).

In a retrospective review of MRIs performed in other hospitals, it was noted that there was a large aneurysm originating from the left common iliac artery with irritating the surrounding lumbosacral plexus, and thrombus was slowly growing inside of the aneurysm, (Fig. 1B, C, D). The patient was not able to undergo an operation for the ruptured aneurysm of the common iliac artery due to severe hypovolemic condition and expired in the end.

DISCUSSION

The causes of acute lower extremity symptoms are variable and include musculoskeletal, dermatologic, infectious, neoplastic, and vascular disorders [4]. Although radiculopathy is usually caused by degenerative disc disease in the lumbar spine, it may be related with other less common causes [5]. Reported cases of lumbosacral radiculopathy due to extra-spinal causes have been sporadic and overall incidence has seldom been reported [5]. Kleiner et al. [6] reported that the incidence of extra-spinal cause of lumbosacral radiculopathy was about 0.09% from the review of 12,125 patients. Diabetes and local compression/invasion by malignancy are common extra-spinal causes. On the other hand, radiotherapy, renal transplant, and aneurysm are rare [7–9].

Iliac artery aneurysm has a close anatomical relationship to the ureter, bladder, colon, pelvic vessels, and femoral or sciatic nerve. The neurological symptoms are usually due to the compression of the nerves of segments L5 and S1, which are located directly posterior to the internal iliac artery [3,10]. Hypertension and arteriosclerosis are the most important etiological factors in the formation of aneurysm, but connective tissue disorders such as the Marfan and Ehler–Danlos syndrome, luetic, traumatic, and post-partum aneurysms have also been reported [3]. In addition, such as transvaginal needle biopsy, renal transplantation, lumbar disc surgery, and radiation therapy could be an iatrogenic cause of pseudoaneurysm or arte-

riovenous fistula in the pelvis [5,11–14]. The importance of clinical history and examination in the diagnosis of these lesions cannot be overemphasized [5].

The aneurysm may remain clinically silent, but when it ruptures, the consequences can be disastrous [10]. The patient may present with slowly progressive sciatic-type symptoms or pain in the lower back, buttock, and thigh in many cases [2]. In one series [15], isolated iliac aneurysms caused gastrointestinal tract signs, genito-urinary tract symptoms, lumbosacral plexopathy symptoms, and a palpable mass in 22, 15, 13, and 17% of patients, respectively. Compression of pelvic organs, such as urinary tract, recto-sigmoid, and venous trunks can be the cause of urinary retention and hydronephrosis, lower abdominal and perineal pain, constipation, edema of the leg, and thrombosis.

Small or asymptomatic aneurysms may be observed with serial images. Larger aneurysms and those that are symptomatic should be treated with either surgical excision or endovascular techniques [4]. Many successful endovascular treatments for internal iliac artery pseudo-aneurysms have recently been reported [5,16]. An increase in size may enhance the risk of aneurysmal rupture, and the rupture of a large artery such as the common iliac artery can be fatal. Aneurysms of the iliac artery are relatively difficult to identify, as up to 40% may present with rupture [17]. The operative mortality for ruptured aneurysms is reported as high as 50%, so the early diagnosis of a symptomatic aneurysm is crucial [18].

In this case, although the doctors had prescribed a spine MRI in order to evaluate the likelihood of a herniated intervertebral disc or spinal stenosis, the important additional discovery of an aneurysm in the left common iliac artery was not appreciated even though there was a sustained symptom compare to the severity of the lesion on MRI. The aneurysm consisted of a portion with low-signal intensity (signal voids), which meant that the blood flow in the lumen, and periphery showed a high-signal intensity compare to the thrombus. These findings suggested that the lesion was an out-pouching aneurysm with a thrombus that was arising from the left common iliac artery, which was noticed in the parasagittal image section upon retrospective reviewing of the previous lumbar spine MRIs. As time went by, the aneurysmal size increased and there was pronounced irritation in the surrounding nerve plexus. We think that the increase of direct compression and chemical

irritation associated with the increasing aneurysmal size caused by the growing thrombus inside the aneurysm caused the sciatica. Sciatica emerged as a kind of warning sign for the aneurysmal rupture as the thrombus grew inside it, and abruptly developed into abdominal pain and distension, which were a result of the intra-abdominal hemorrhage from the aneurysmal rupture. We guess that self-discontinuation of the anti-hypertensive agents recently might have an influence with an aneurysmal rupture.

Impending ruptures are difficult to anticipate. A peripheral crescent-shaped area of hyper-attenuation in the mural thrombus of an aneurysm may represent an impending rupture [19]. There is usually a delay between the initial intramural hemorrhage and frank extravasation. Moreover, we assumed it was possible that some blood leakage from the aneurysm ahead of the active extravasation of hemorrhage had caused the aggravation of leg symptoms. However, there was no definitive evidence of hemorrhage on the latest lumbar spine MRI whether it was resolved before performing MRI at the second-visit hospital.

This case indicates the process of a growing thrombus inside an aneurysm that seems to rupture imminently, while most other previous similar cases have focused on the presence and treatment of the aneurysm. There are some changes in the morphology of the lesion and the pain nature. This case serves as a reminder for the assessment of neurological symptoms associated with the lower extremities, extra-spinal causes in the pelvis should be considered with high suspicion. It is sometimes not easy to distinguish the partially-sectioned aneurysm from the pelvic organ or bowel signal, because the routine axial and sagittal sections of an MRI scan generally do not extend to either the bottom of the sacrum or the more lateral portion of the neural foramen.

In conclusion, sciatica caused by extra-spinal causes is a very rare condition and it is easy to neglect the problems. When we evaluate the patient with lower extremity symptoms which does not meet the result of imaging studies or physical examination fully and past medical history such as hypertension, extra-spinal problems including vessel problem should be also considered as a cause of the symptom.

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