Angiolipoma on the Lumbar Spine

Angiolipomas are composed of mature adipose tissue and blood vessels. Spinal angiolipomas are rare benign tumors with a good prognosis, and most symptoms are due to progressive compression of the spinal cord and root. The treatment of choice is total resection without any additional therapy. We report a case of an epidural angiolipoma on the lumbar spine in a 69-year-old man with weakness of the lower extremities. Lumbar magnetic resonance images revealed a well-enhanced epidural mass. He underwent laminectomy, and the tumor was completely removed. Pathologic examination confirmed the tumor was an angiolipoma. The patient's symptoms gradually improved postoperatively.

Key Words: Angiolipoma, Spine, General surgery

INTRODUCTION

Angiolipomas are benign tumors that usually occur in the subcutaneous layer of the trunk and extremities. They rarely occur on the spine. Spinal angiolipomas commonly occur on the midthoracic spine and are located on the dorsolateral aspect of the cord. The symptoms of spinal angiolipomas usually appear gradually because of the progressive compression of the cord. However, sometimes, symptoms can arise rapidly because of intratumoral hemorrhage and venous thrombosis. Most spinal angiolipomas have a good prognosis following surgical resection, and noninfiltrating tumors are relatively easily dissected from the dura and adjacent structures because of the good encapsulation of the mass. In contrast, infiltrating tumors are entirely or partially unencapsulated.

We report a rare case of a spinal angiolipoma on the lumbar spine, in which treatment using surgical removal resulted in a good outcome.

CASE REPORT

A 69-year-old man was admitted to our department with long-lasting numbness and subacute-onset weakness of both lower extremities. His weakness developed 1 week prior to presentation, and was especially evident in his hip joint. Lumbar computed tomography revealed a prominent epidural mass with dural compression at the level of L2–3 and severe canal stenosis at L4–5. Magnetic resonance imaging (MRI) revealed a well-defined mass with strong enhancement. The mass was hyperintense on T2-weighted imaging (WI) and isointense to slightly hyperintense on T1-WI (Fig. 1). We pre-
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Fig. 2. The photographs show a 4×1.5-cm-sized reddish, friable epidural mass (A, C), which is easily dissected from the dura (B).

Fig. 3. Histological examination reveals mature adipocytes and thin-walled capillary-sized vessels (H&E staining: A, ×40; B, ×200).

Fig. 4. Postoperative lumbar magnetic resonance image showing total resection of the tumor.

We assumed the weakness developed because of the mass lesion. We performed a total laminectomy of L2 with removal of the mass, and used a unilateral approach for bilateral decompression at L4–5. The mass was reddish and friable and was easily dissected from the dura (Fig. 2). It was surrounded by a blood clot, suggesting the possible occurrence of intratumoral bleeding. The mass was confirmed as an angiolipoma on pathologic examination, which showed mature adipocytes and thin-walled capillary-sized vessels (Fig. 3). Follow-up MRI showed total removal of the mass (Fig. 4). After the surgery, his weakness gradually improved, and he was discharged without additional treatment. His weakness fully recovered 3 months later.

DISCUSSION

Angiolipomas are usually composed of mature lipomatous tissue and proliferating vessels and rarely occur on the spine. Most angiolipomas are slow-growing and present with gradually progressing radicular symptoms. In patients with intratumoral hemorrhage, the symptoms can include acute-onset myelopathy2). Our patient had bleeding around the mass, and the development of lower extremity weakness was relatively subacute. Increased venous pressure, obstructed venous drainage, increased adiposity, and hormonal changes may influence the size of the mass3). Pregnancy may be an aggravating factor3).

On computed tomography, angiolipomas appear hypointense relative to the spinal cord13). Most angiolipomas appear iso-intense or hyperintense on T1-WI and hyperintense on T2-WI, with good enhancement14). The same pattern was also observed in our patient. A mass appearing hypointense on T1-WI may suggest that a vascular lesion is more likely than is an adipose lesion1,4), despite the absence of signal voids. Angiolipomas composed of more lipomatous tissue (>50%) have a trabeculated or mottled appearance. However, those composed of more vascular components show large foci in the mass on magnetic resonance images3).

Angiolipomas are composed of mature adipose tissue and blood vessels and are differentiated from capillary angiomas and cavernous angiomas3). Immunohistochemical studies on angiolipomas show positive findings for CD34 and smooth muscle actin7,15). Angiolipomas are classified as either noninfiltrating or infiltrating. Noninfiltrating angiolipomas are more common6,10), and are relatively easily dissected from the dura. However, if MRI suggests a highly vascular lesion, preoperative angiography and embolization can be performed9). Noninfiltrating tumors are usually located in the posterior epidural space, and infiltrating tumors are generally located in the anterior epidural space4). Infiltrating angiolipomas can also invade the vertebral body and paraspinal area9). Sometimes, infiltrating angiolipomas may be mistaken for malignant tumors because of the invasion of surrounding tissue10,16).

Total surgical resection is the treatment of choice, but total removal of the mass is difficult in cases of infiltrating angiolipomas. Noninfiltrating angiolipomas have a good prognosis after total surgical resection, and infiltrating angiolipomas have a good
prognosis after incomplete resection\textsuperscript{6,12). Previously, wider resec-
tion including the surrounding tissue was recommended for infil-
trating angiolipomas\textsuperscript{11). However, there is no difference in the
outcomes between both types of angiolipomas\textsuperscript{6,15). Recurrence
is rare after surgical resection, even in cases of subtotal resection\textsuperscript{9})
and absence of malignant transformation\textsuperscript{13).}

CONCLUSION

We report a rare case of noninfiltrating spinal angiolipoma,
in which treatment using total surgical resection resulted in a
good outcome. Follow-up evaluation is required to identify rare
cases of recurrence.

CONFLICT OF INTEREST

No potential conflict of interest relevant to this article was
reported.

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