

QUESTION

A 65-year-old man with a 20-year history of hypertension and a 10-year history of type 2 diabetes mellitus presents to the emergency department with a 2-day history of severe, constant, dull pain in the lower back and right leg, radiating down to the ankle. The pain is worse at night and is relieved by walking. He has no numbness or weakness in the leg. He has no history of trauma, falls, or recent weight loss. He is on lisinopril, metoprolol, and metformin.

On physical examination, he has a normal neurologic examination with normal reflexes and normal sensation. There is tenderness to palpation over the right L5/S1 area. There is no swelling, redness, or warmth over the area. The remainder of the physical examination is unremarkable. Laboratory studies are within normal limits. An MRI of the lumbar spine shows a large, well-circumscribed, enhancing soft tissue mass at the L5/S1 level, compressing the thecal sac and the right L5 nerve root. The mass is isointense to muscle on T1-weighted images and hyperintense on T2-weighted images. There is no evidence of metastatic disease.

ANSWER

The most likely diagnosis is a schwannoma. Schwannomas are benign, slow-growing tumors that arise from Schwann cells, which are responsible for the myelination of peripheral nerves. They typically present as a painless, enlarging mass, but can also cause pain, numbness, or weakness. In this case, the patient's symptoms of severe, constant pain in the lower back and right leg, radiating down to the ankle, are consistent with a schwannoma compressing the right L5 nerve root. The MRI findings of a large, well-circumscribed, enhancing soft tissue mass at the L5/S1 level, compressing the thecal sac and the right L5 nerve root, are also consistent with a schwannoma.

Other differential diagnoses include a meningioma, a neurofibroma, and a metastatic tumor. Meningiomas are benign, slow-growing tumors that arise from the meninges, the protective layers of the brain and spinal cord. They typically present as a painless, enlarging mass, but can also cause pain, numbness, or weakness. In this case, the patient's symptoms and MRI findings are not consistent with a meningioma.

Neurofibromas are benign, slow-growing tumors that arise from Schwann cells, similar to schwannomas. They typically present as a painless, enlarging mass, but can also cause pain, numbness, or weakness. In this case, the patient's symptoms and MRI findings are not consistent with a neurofibroma.

Metastatic tumors are malignant tumors that have spread from a primary site to other parts of the body. They typically present as a painless, enlarging mass, but can also cause pain, numbness, or weakness. In this case, the patient's symptoms and MRI findings are not consistent with a metastatic tumor.

DISCUSSION



The diagram shows a cross-section of the lumbar spine at the L5/S1 level. The vertebrae are labeled L5 and S1. The intervertebral disc is shown between them. A large, dark, enhancing soft tissue mass is shown compressing the thecal sac and the right L5 nerve root. The mass is labeled 'Schwannoma'. The thecal sac is labeled 'Thecal sac' and the right L5 nerve root is labeled 'Right L5 nerve root'. The diagram is labeled 'L5/S1' and 'Schwannoma'.