Coll. Antropol. 40 (2016) 1: 55–57
Case report

Giant Spinal Schwannoma in a 76-year-old Woman – A Case Report

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ABSTRACT

A schwannoma is a benign nerve sheath tumor composed of Schwann cells. Spinal schwannoma originates from dorsal roots of the spinal cord, causing symptoms due to the compression of neighboring structures. We present a patient with a low back pain and left L2 and L3 radiculopathy. Neuroimaging techniques (CT, MRI) showed a large expansive mass in the left lumbar paraspinal area. The tumor was removed totally by the posterior approach and was verified to originate from the left L2 spinal nerve root. The histopathological examination revealed typical findings of a schwannoma. The pain was resolved promptly after the surgery, however the patient's neurological condition wasn't improved. Surgical treatment was a final treatment, and no additonal therapy was necessary.

Key words: *low back pain, radiculopathy, giant spinal schwannoma*

Introduction

A schwannoma (neurinoma, neurilemmoma, neurolemmoma, Schwann cell tumor) is a benign, homogeneous, slow-growing nerve sheath tumor composed of Schwann cells[1,2]. Spinal schwannomas arise from the dorsal spinal nerve root sheaths[3,4]. They are most commonly seen in the lumbar region[3,5] and comprise more than 20% of all primary tumors of the spinal cord[6,7]. They occur in persons of any age but are most common around the 5th decade[5,6] and without significant prevalence difference between males and females[7].

Spinal schwannomas are most often single, small lesions but sometimes extend along the nerve root to the paraspinal area[3,8]. The term giant spinal schwannoma refers only to lumbosacral and sacral tumors that extend over more than two vertebral levels or those that have an extraspinal extension of more than 2.5 cm[9].

At the early stage, the most common are asymptomatic types. Symptoms develop when compression increases to spinal nerve root and the surrounding structures[10]. The initial symptoms are the pain localized in the tumor place, the root pain and sensory deficit[11]. Later on when spinal nerve root gets damaged, the pain often decreases but motor deficit develops[5,12].

The diagnosis is based on the data of medical history, clinical examination and neuroimaging techniques[13,14] and is verified after the histopathologic examination of a tumor tissue[1,4].

The treatment of choice is a total resection of the tumor and it usually results in good postoperative functional

Received for publication February 2, 2016

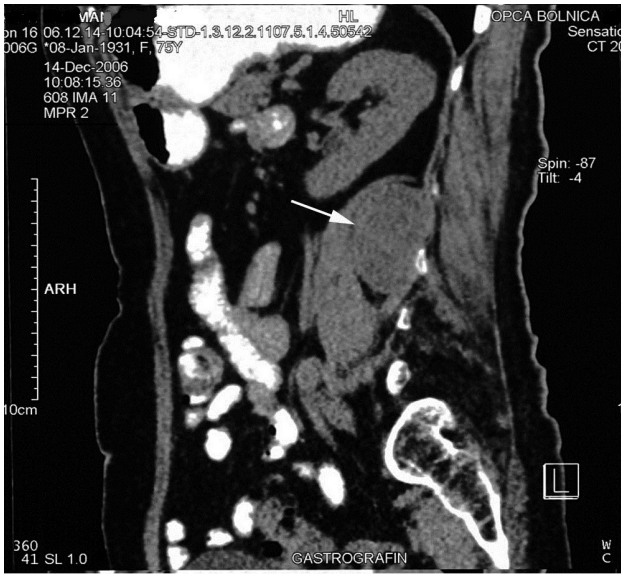

Fig. 1. Computed tomography (CT) of a large expansive mass in the left lumbar paraspinal area.

outcomes[3,5,15]. The complete removal with the maximum preservation of parent nerves can as well prevent local recurrence[3,5,16,17].

Case Report

We present a case of a 76-year-old woman with no previous significant medical history. She come because of nonspecific intensive lower back pain in the past few months located more to the left side. The pain radiated to the front side of the left leg and to the left ankle, and was associated with paresthesias. She denied any trauma to her body.

Upon the neurological examination, there was a monoparesis of the left leg especially due to weakness of the quadriceps femoris muscle, diminished left patellar reflex, absent left Achilles reflex, hypoesthesia on left L2 and L3 dermatomes, negative Lasègue's sign and no urinary and anal sphincter disturbances.

Computed tomography (CT) revealed a large expansive mass in the left lumbar paraspinal area, 42x37x60 mm in size that extends in left psoas muscle to the left hemibody of the L4 vertebra and widens left L2-3 intervertebral foramina (Figure 1). It didn't seem invasive. There was no intra abdominal abnormality.

Magnetic resonance imaging (MRI) showed a paravertebral expansive mass in the left lumbar region, partially cystic, with intense contrast enhancement (Figure 2), hypointense signal on T1-weighted images (Figure 2), hyperintense signal on T2-weighted images (Figure 3).

Based on the medical history, the neurologic examination and neuroimaging techniques, we opted for a surgical treatment. The posterior approach was chosen and the tumor was removed completely after the left L2-L3 and L3-L4 interlaminectomies, left L2 and L3 foraminotomies and left L2 and L3 transverse processes resections. The tumor was well-bordered and well-vascularized, and encompassed left L2 and L3 spinal nerve roots. The caudal section of the dorsal root of the left L2 spinal nerve that the tumor had developed on was destroyed. The intraoperative and postoperative histopathological examinations showed typical characteristics of a schwannoma.

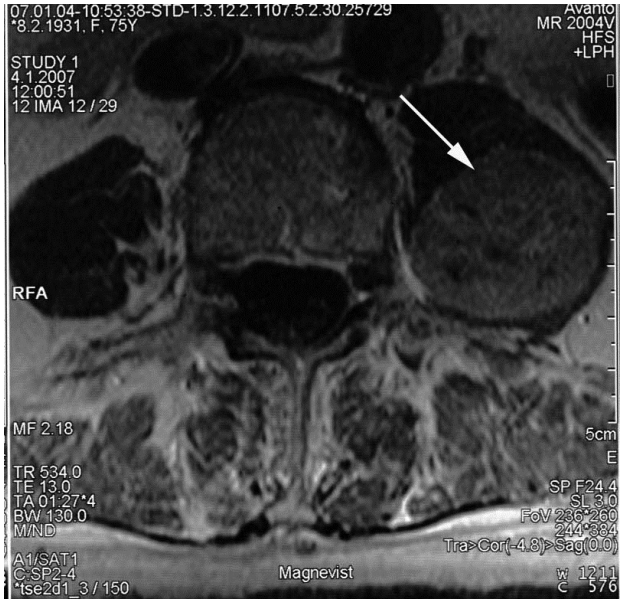

Fig. 2. Magnetic resonance imaging (MRI) of a large expansive mass in the left lumbar paraspinal area.

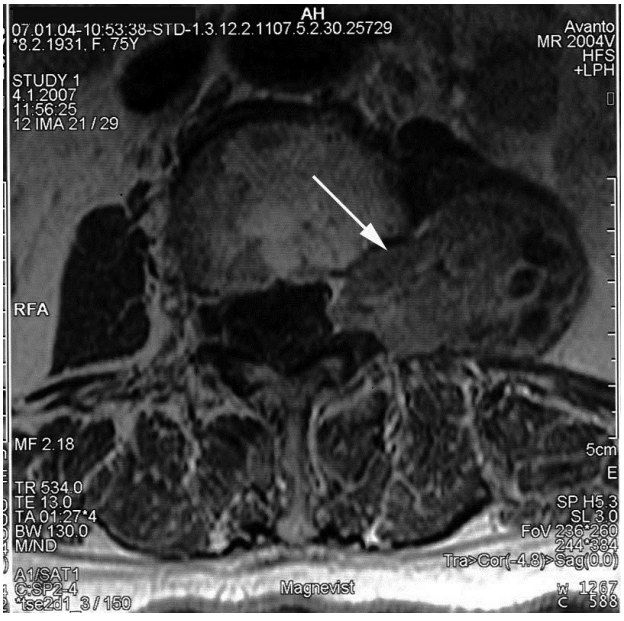

Fig. 3. Magnetic resonance imaging (MRI) of a large expansive mass in the left lumbar paraspinal area with hyperintense signal on T2-weighted images.

The postoperative course was normal and eight days after the surgery the patient was released in normal general and local condition. Our patient was well recovering after the procedure, the pain was resolved but neurological condition hasn't improved.

Discussion and Conclusion

In rare cases, the symptoms of low back pain and radiculopathy of the lumbar spinal nerve can be caused by spinal schwannoma[10,11]. In our case, one special form, a giant spinal schwannoma[9], arose from the dorsal left L2 spinal nerve root sheaths and compressed left L2 and L3 spinal nerve roots and other neighboring structures. Neuroimaging techniques (CT, MRI) were crucial in the diagnostic procedure. The tumor was totally removed by posterior approach, the pain was resolved, but neurological condition hasn't improved. So, our case confirms that the result of a surgery often closely correlates to preoperative neurological condition[5]. However, the importance of timely operative treatment is necessry in order to prevent further damage[18].

REFERENCES

1.COULON A, MILIN S, LABAN E, DEBIAIS C, JAMET C, GOUJON JM, Neurochirurgie, 55 (2009.) 454. DOI: 10.1016/j.neuchi.2009.07.001. — 2. SCHINDLER OS, DIXON JH, CASE P, J Orthop Surg (Hong Kong), 10 (2002.) 77. — 3. CONTI P, PANSINI G, MOUCHATY H, CAPUANO C, CONTI R, Surg Neurol, 61 (2004) 34. DOI: 10.1016/S0090-3019(03)00537-8. — 4. DORSI MJ, BELZBERG AJ, Neurosurg Clin N Am, 15 (2004) 217. DOI: 10.1016/j.nec.2004.02.007. — 5. JEON JH, HWANG HS, JEONG JH, PARK SH, MOON JG, KIM CH, J Korean Neurosurg Soc, 43 (2008) 135. DOI: 10.3340/jkns.2008.43.3.135. — 6. ENGELHARD HH, VILLANO JL, PORTER KR, STEWART AK, BARUA M, BARKER FG, NEWTON HB, J Neurosurg Spine, 13 (2010) 67. — 7. SCHELLINGER KA, PROPP JM, VILLANO JL, MCCARTHY BJ, J Neurooncol, 87 (2008) 173. DOI: 10.1007/s11060-007-9507-z. — 8. CELLI P, TRILLÒ G, FERRANTE L, J Neurosurg Spine, 2 (2005) 447. DOI: 10.3171/spi.2005.2.4.0447. — 9. SRIDHAR K, RAMAMURTHI R, VASUDEVAN MC, RAMAMURTHI B, J Neurosurg, 94 (2001) 210. DOI: 10.3171/spi.2001.94.2.0210. — 10. JAISWAL A, SHETTY AP, RAJASEKARAN S, J Orthop Surg (Hong Kong), 16 (2008) 102. — 11. SUBACIŪTE J, Medicina (Kaunas), 38 (2002) 1086. — 12. HORI T, TAKAKURA K, SANO K, Med Chir (Tokyo), 24 (1984) 471. DOI: 10.2176/nmc.24.471. — 13. DE VERDELHAN O, HAEGELEN C, CARSIN-NICOL B, RIFFAUD L, AMLASHI SF, BRASSIER G, CARSIN M, MORANDI X, J Neuroradiol, 32 (2005) 42. DOI: 10.1016/S0150-9861(05)83021-4. — 14. LIU WC, CHOI G, LEE SH, HAN H, LEE JY, JEON YH, PARK HS, PARK JY, PAENG SS, Eur Radiol, 19 (2009) 2707. DOI: 10.1007/s00330-009-1466-7. — 15. KIM P, EBERSOLD MJ, ONOFRIO BM, QUAST LM, J Neurosurg, 71 (1989) 810. DOI: 10.3171/jns.1989.71.6.0810. — 16. SCHICK U, MARQUARDT G, LORENZ R, Neurosurg Rev, 24 (2001) 20. DOI: 10.1007/PL00011961. — 17. DORSI MJ, BELZBERG AJ, Neurosurg Clin N Am, 15 (2004) 217. DOI: 10.1016/j.nec.2004.02.007. — 18. KARAGÖZ GÜZEY F, BAŞ NS, EMEL E, ÖZKAN N, GÜZEY D, SEL B, ALATAŞ İ, Turk Neurosurg, 16 (2006) 139.

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VELIKI SPINALNI ŠVANOM KOD 76-GODIŠNJE ŽENE – PRIKAZ SLUČAJA

SAŽETAK

Švanom je benigni tumor živčane ovojnice, koji se sastoji od Schwannovih stanica. U kralježničnom području polazi od stražnjeg korijena moždinskog živca, uzrokujući simptome uslijed kompresije okolnih struktura. Prikazujemo pacijenta koji se javlja s bolovima u donjem dijelu leđa i sa simptomima L2 i L3 radikulopatije lijevo. Neuroradiološka obrada (CT, MRI) pokaže veliku ekspanzivnu tvorbu u lijevom lumbalnom paraspinalnom području. Tumor se u potpunosti odstrani stražnjim pristupom, te se verificira da potječe od korijena lijevog L2 moždinskog živca. Patohistološka pretraga pokaže tipičan nalaz švanoma. Ubrzo nakon operativnog zahvata bol je prestala, međutim neurološko stanje nije se poboljšalo. Kirurški tretman je bio konačan, te nije bila potrebno nikakve adjuvantne terapije.