MULTIPLE SPINAL CORD MENINGIOMAS

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SUMMARY :

Multiple spinal cord meningiomas are extremely rare and we describe a case in which there was an extradural meningioma in the cervical region and an intradural meningioma in the lumbar region. The tumor was pathologically identified as meningothelial meningioma in the cervical region but in the lumbar region, as a fibroblastic meningioma.

KEY WORDS :

Multiple meningiomas, Spinal cord

INTRODUCTION :

Although the frequency of meningioma among primary spinal cord tumors is 25 %, multiple spinal cord meningiomas are extremely rare. Multiple spinal cord meningiomas have not been reported in the spinal cord meningioma series of A. Davis (45 patients), K.Katz (44 patients), Lombardi and Pasarini (71 patients), Haft and Shenkin (367 patients). (3,5,7,9) Walter J.Levy and his colleagues have reported two multiple spinal cord meningiomas among 97 patients who had spinal cord meningiomas.(8) F. Carta et al. have also reported two multiple spinal cord meningiomas.(2) Single cases of multiple spinal meningiomas have been described by Rand,Rath et al. and DiRocco et al. (4,9,10) Only Rath and his colleagues reported multiple meningiomas which were intradural thoracic and extradural cervical.(11)

We are reporting a case in which there was an extradural meningioma in the cervical region and an intradural meningioma in the lumbar region. This will be the second such case reported and the first that was pathologically identified as meningothelial meningioma in the cervical region and fibroblastic meningioma in the lumbar region.

CASE REPORT :

A 46-year-old woman was admitted to the Neurosurgery Department of the University of Ankara on May 21,1984,with the chief complaint of hypoesthesia in the arms and legs for 4 years and paresis for 1 month. For 15 days she had difficulty in walking and urinary retention.

Examination: T.A.:110/70 mm Hg. Pulse rate: 80/min. Positive findings in the neurological examination were:spastic tetraparesis, hypoesthesia below C4 which was increasing below L1, absent abdominal reflexes in all quadrants,exaggerated tendon reflexes in the legs positive Hoffmann sign was in the right,bilateral Babinski sign and ankle clonus,loss of vibration and position sense in both legs.There were no clinical features of Von Recklinghausen Neurofibromatosis disease or other meningiomas in the skull.

X-Ray studies of the cervical and lumbar spine were normal.Lumbar and suboccipital myelography both demonstrated complete block at C4 (Fig.1) and L2 (Fig.2) respectively.

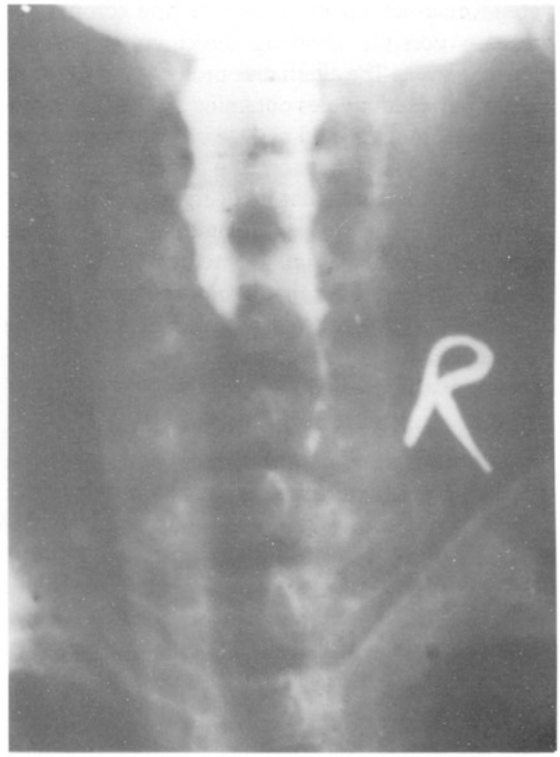

Fig 1 : Suboccipital myelography reveals complete block at C4

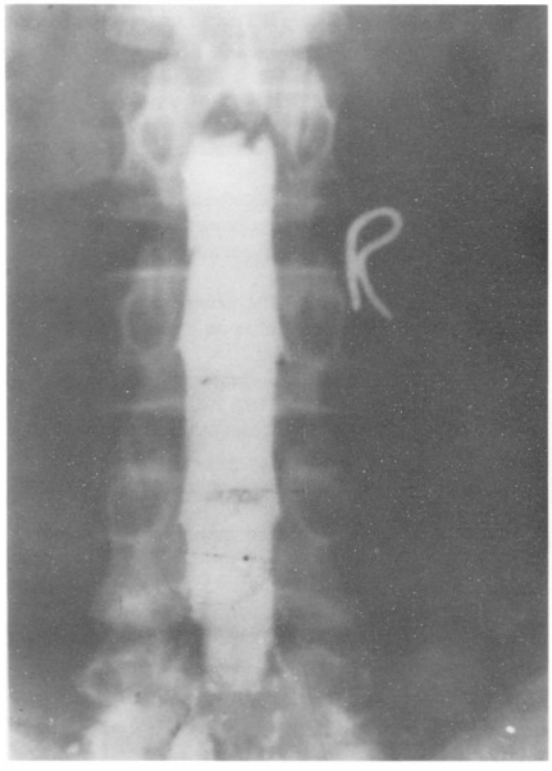

Fig 2 : Lumbar myelography reveals complete block at L2

FIRST OPERATION :

On May 29 1984, a cervical total laminectomy was done from C3 to C7.The tumor was evident in the extradural region at C2-C3-C4 level. It was hard and no bleeding was seen.It was removed totally and was pathologically identified as a meningothelial meningioma (Fig.3).Postoperatively the patient showed increased strength in the arms.

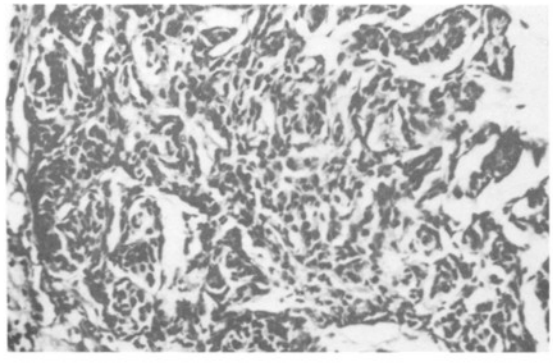

Fig 3 : Microphotograph of the surgical specimen from the first operation showing a meningothelial meningioma. (H&E.×200)

SECOND OPERATION:

On June 12, 1984 the lumbar lesion was exposed by a total laminectomy of the L2-L3-L4 vertebrae. Extradural space was normal. At the level of L2 the dura mater was firm and bulging. An intradural tumor was found at the L2 level, originating from the dura mater and located at the left side of the vertebral column. The tumor measuring 2×2×2 cm was removed totally. It was pathologically identified as a fibroblastic meningioma (Fig.4).

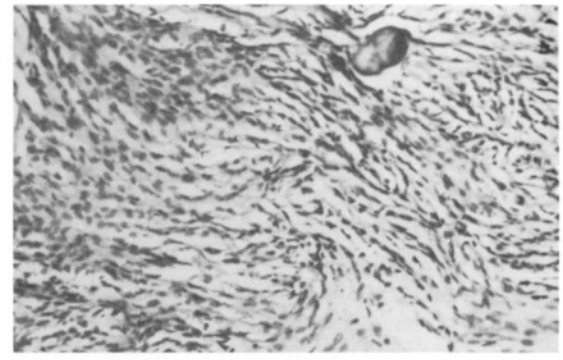

Fig 4 : Microphotograph of the surgical specimen from the second operation showing a fibroblastic meningioma. (H&E.×200)

Postoperatively tetraparesis subsided and within 2 weeks the patient could walk with help.There was reduction of the spasticity in all limbs. After 3 months there was still slight tetraparesis, more recognizable on the right side, but the patient could walk without help.

After six years the patient was free of complaints and was walking without help. There was slight hemiparesis on the right side. There was no sensorial disturbance. Tendon reflexes were hyperactive, bilateral Hoffmann sign was positive.Abdominal reflexes were normal in the left quadrant but reduced in the right quadrant. Urinary and faecal control was complete.

DISCUSSION :

The term 'Multiple Meningioma' was first used by Cushing. Multiple spinal meningiomas are rather rare compared with intracranial meningiomas.We have found one multiple spinal cord meningioma among 90 spinal cord meningiomas.

The most unusual feature of our case is that multiple spinal cord meningiomas involved the cervical region extradurally and the lumbar region intradurally. Only Rath has reported a patient with identical findings.(11)

Multiple spinal cord meningiomas are frequently associated with von Recklinghausen's disease (2,10), but in our patient we couldn't find signs of that disease.

As multiple meningiomas can be found in one or more neuroaxial compartments (supratentorial,spinal) as in Harris's patients and they may also be found

in three neuroaxial compartments (supratentorial,posterior fossa and spinal) as in Zerva's patients. Arseni reported cases where the multiple meningiomas were present in orbital,sphenoid ridge areas and spinal compartments.(1,6,12)

In the literature there are several suggested mechanisms for the pathogenesis of multiple meningioma; these include multicentricity of origin, spread by CSF, venous spread, hereditary factors and tumor-stimulating factors. For these reasons it is not easy to explain the pathogenesis of multiple meningiomas with CSF or venous spread that exist in both the cranial and spinal compartments at the same time. As Z.Harris et al. reported, the histology of the tumors can be different.(6) In our case the extradural tumor in the cervical region was meningothelial meningioma, and the intradural in the lumbar region was fibroblastic meningioma. Multiple meningiomas in children have been reported only by DiRocco et al.(4)

We can conclude that if a total block has been detected by myelography in patients with spinal meningioma and if the neurological signs can not be explained by the level of the block, multiple meningiomas should be suspected and myelography of the whole spinal cord or spinal CT and MRI should be performed.

REFERENCES:

1. Arseni C,Dumitrescu JL,Carp N. Orbital, sphenoidal ridge and spinal meningiomas occurring in one patient. Neurochirurgia 27:86-88, 1984
2. Carta F,Silvestro C,Borzone M,Capuzzo T,Gentile S. Multiple spinal meningiomas. Zbl. Neurochirurgie 44:3-6, 1983
3. Davis RA, Walsburn PL: Spinal cord meningiomas. Surg Gynecol Obstet 131:15-21, 1970
4. DiRocco C,Caldarelli M,Puca A,Colossimo C. Multiple Spinal Meningiomas in children.Neurochirurgia 27:25-27, 1984
5. Half H,Shenkin HA. Spinal epidural meningioma. J Neurosurg 20: 801-804, 1963
6. Harish Z,Schiffer J,Rapp A,Reif RM. Intracranial and spinal multiple meningioma appearing after an interval of 22 years. Neurochirurgia 28:25-27, 1985
7. Katz K,Reichenthal E,Israeli J. Surgical treatment of spinal meningiomas. Neurochirurgia: 24,21-22, 1981
8. Lewy WJ,Bay J,Dohn D: Spinal cord meningioma. J Neurosurg 57:804-812, 1982
9. Lombardi G,Passerini A. Spinal cord tumors. Radiology 76:381-391, 1961
10. Rand RW. Multiple spinal cord meningiomas. J Neurosurg 9:310-313, 1952
11. Rath S,Mathai KV,Chandy J. Multiple meningiomas of the spinal canal. J Neurosurg 26:639-640, 1967
12. Zervas NT, Shintani A,Kallar B,Berry RG. Multiple meningiomas occupying separate neuraxial compartments. J Neurosurg 33:216-220, 1970