

OSSIFIED THORACIC SPINAL MENINGIOMA: A CASE REPORT

OSSİFİYE TORASİK SPİNAL MENENJİOMA: OLGU SUNUMU

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SUMMARY:

Objective: To present a new case of an ossified spinal meningioma which is extremely uncommon pathology, gives a sense of a real cancellous bone in surgery and to emphasize the importance of the physical shape of the tumor during the surgery.

Clinical presentation: A 63-years-old woman was complaining about progressive symmetrical weakness and numbness of lower extremities for about three years and had urinary incontinence over two months. Neurological examination revealed an incomplete paraplegia. Both patella and Achilles reflexes were hyperactive, a positive Babinski's sign and Achilles clonus were also present. The muscle tone of lower extremities was increased. The cervicodorsal MRI showed a hypo intense mass lesion both on T1 and T2-weighted images between the spinal levels of T1 and T4. This lesion had the maximal thickness at the level of T2 and T3 and caused a thin myelopathic signal. The dorsal CT scan with sagittal reconstruction revealed that the lesion had the same density with the bone.

Method: Total laminectomies were performed at the first four dorsal vertebrae. The

dura overlying the tumor was very hard and invaded by it. The sense of dura was like leaves of bamboo which are hard and longitudinally oriented. Although not easy, the dura could be detached from the tumor by a micro dissector. It was relatively easy to dissect the tumor from the spinal cord because; it was not so adherent unlike its dural attachment. The tumor was totally removed with the invaded parts of the dura which then was closed by an allograft. Postoperatively, the patient was complete paraplegic. Pathologic examination of the tumor revealed psammomatous meningioma with osseous metaplasia.

Conclusion: Ossified meningiomas are very rare tumors. This metaplasia can complicate the surgery and affect the surgical outcome. If predicted preoperatively, the CT scan, especially with reconstruction can show the exact shape of the tumor. This knowledge can be very useful during surgery, especially providing information about the counteracting moves remote from the microscopic field.

Key Words: Thoracic meningioma, osseous metaplasia, surgical treatment.

Level of evidence: Level IV, case report

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ÖZET:

Amaç: Oldukça nadir olan ve cerrahi sırasında kansellöz kemik hissi veren bir ossifiye menenjiom vakasını takdim etmek ve cerrahi sırasında tümörün fiziksel şeklinin önemini vurgulamak.

Klinik Sunum: Olgu 3 yıldır alt ekstremitelerinde ilerleyici güçsüzlük ve 2 aydır idrar inkontinansından şikâyet etmekte olan 63 yaşında kadın hasta idi. Nörolojik muayenesinde inkomplet parapleji vardı, patella ve aşil refleksleri hiperaktif idi ve aynı zamanda aşil klonusu mevcut idi. Servikodorsal MRG'sinde T1 seviyesinden T4 seviyesine uzanan T1 veT2 ağırlıklı sekanslarda hipointens görünümlü miyelopatik sinyale sebep olmuş kitle lezyonu tespit edildi. Yapılan BT görüntülemesinde lezyon etraf kemik ile aynı dansitede idi.

Metot: İlk dört dorsal omurgaya tam laminektomi yapıldı. Tümörün üstündeki dura çok sert ve tümör tarafından invaze edilmişti. Yapışık

ve sertleşmiş olan dura açılıp tümörden ayrıldı. Omuriliğe çok fazla yapışık olmadığından omurilikten disseke etmek daha kolaylıkla yapıldı. Tümör ve invaze olmuş dura tamamen çıkartılıp allogreft ile dura tamiri yapıldı. Operasyon sonrasında hasta tam paraplejik olarak uyandı. Tümörün patolojisi osseöz metaplazi gösteren psammomatöz menenjiom olarak geldi.

Sonuç: Ossifiye menenjiyomlar oldukça nadir tümörlerdir. Bu metaplazi cerrahiye zorlaştırır ve klinik sunucu etkiler. Eğer preoperatif olarak tahmin edilirse özellikle rekonstrüksiyon yapılmış BT ile tam şekli görülebilir. Bu bilgi cerrahi sırasında yapılacak manipülasyonların özellikle mikroskobik alan dışındaki etkileri hakkında bilgi verir.

Anahtar Kelimeler: Dorsal menenjiyom, osseöz metaplazi, cerrahi tedavi.

Kanıt Düzeyi: Düzey IV, olgu sunumu.

INTRODUCTION:

Meningiomas, together with schwannomas, represent the majority of intradural extramedullary spinal tumours ⁽²⁾. The presence of microscopic psammoma bodies, gritty foci of calcification are frequently found in spinal meningiomas ⁽¹⁾. However, entire ossification of a spinal meningioma is extremely uncommon, and when encountered complicates the surgery, thus the postoperative course and prognosis ⁽⁵⁾. To our knowledge, there are less than 20 reported cases of ossified spinal meningiomas in the english literature ⁽¹⁻⁶⁾. So, the aim of this article is to present a new case of an ossified spinal meningioma which gives a sense of a real cancellous bone in surgery.

CASE REPORT:

A 63-years-old woman was admitted to our clinic complaining about progressive symmetrical weakness and numbness of lower extremities for about three years and had urinary incontinence over two months. Neurological examination revealed an incomplete paraplegia with a muscle strength of 2/5 and hypoesthesia below the level of T6. Both patella and Achilles reflexes were hyperactive, a positive Babinski's sign and Achilles clonuses were also present. The muscle tone of lower extremities was increased. The cervicodorsal MRI showed a hypo intense mass lesion both on T1 and T2-weighted images between the spinal levels of T1 and T4. This lesion had the maximal thickness at the level of T2 and T3 and caused a thin myelopathic signal (fig.1). The dorsal CT scan with sagittal reconstruction revealed that the lesion had the same density with the bone (fig.2).



Figure-1. Sagittal T2-weighted MR image of the patient who shows a hypo intense lesion at the posterior of the spinal cord causing compression and myelopathic signal.



Figure-2. CT image with sagittal reconstruction, lesion is seen to have the same density with the bone.

Total laminectomies were performed at the first four dorsal vertebrae. There was no extradural pathology seen, but the dura overlying the tumor was very hard and invaded by it. The sense of dura was like leaves of bamboo which are hard and longitudinally oriented. Although not easy, the dura could be detached from the tumor by a micro dissector. It was relatively easy to dissect the tumor from the spinal cord because; it was not so adherent unlike its

dural attachment. The tumor was totally removed with the invaded parts of the dura which then was closed by an allograft. Postoperatively, the patient was complete paraplegic. Pathologic examination of the tumor revealed psammomatous meningioma with osseous metaplasia with no atypical nucleus and mitotic figures (Fig. 3a and 3b). Immunohistochemically, Ki 67 antibody was applied but no positive stain was obtained.

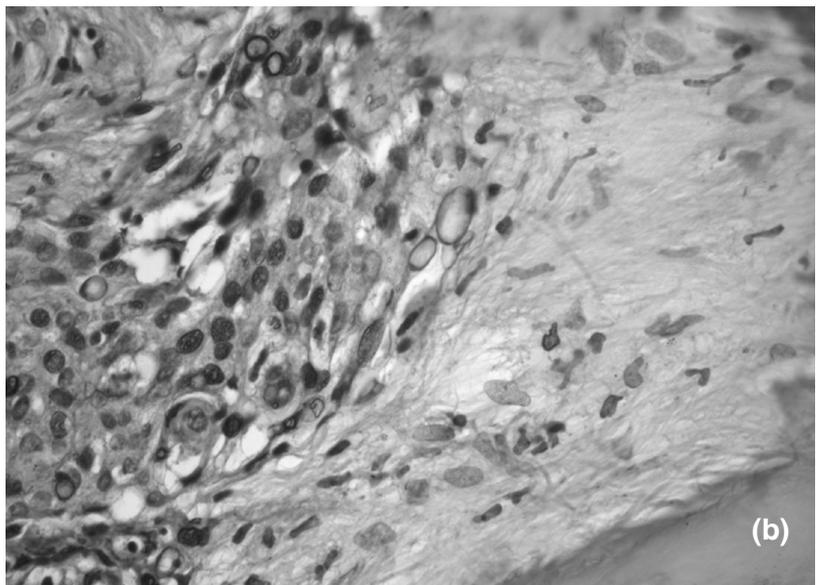
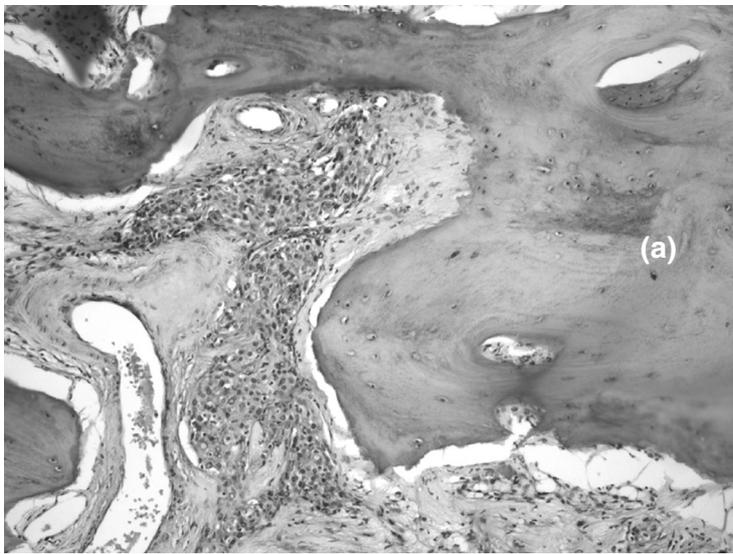


Figure-3. a and b. Microscopic appearance of tumor, reveals psammomatous meningioma with osseous metaplasia with no atypical nucleus and mitotic figures

DISCUSSION:

Although spinal meningioma is a common benign neoplasm, the ossified variant is rare ⁽⁶⁾. The first case of ossified meningioma was reported by Roger in 1928 before the era of microsurgery ⁽³⁾. Not more than 20 sporadic cases were reported in the English literature until today. Most of the reported cases are at the thoracic level as our case. Although some new cases have been reported, the incidence of ossified meningiomas, however, is not definitely known but may be estimated to be 0.7–5.5 % of all spinal meningiomas ^(1,3).

The surgery of an ossified meningioma has some difficulties due to its rigid nature which affects the surgical outcome, especially in this pathology the shape of the tumor was also important. In our case, the tumor itself gives the sense of a cancellous bone consisting of an irregular shape. The thin edges, which may be former dural tails, as a speculation, were also not flexible which give the sensation of a broken shapeless wood. During surgery, the edges outermost from the manipulation site moved conjointly with surgeon’s manipulative forces, like a teeter-totter.

The demographic properties of the patient and localization of the tumor was typical for a spinal meningioma. In spinal meningiomas, functional outcome greatly depends on the location and the extent of the tumor. Different long-term outcomes of ossified meningioma surgery have been reported. Roux et al. reported three ossified meningiomas out of 54 spinal meningiomas and emphasized the functional results ⁽⁶⁾. They reported a total resection in two cases and a subtotal resection in one case, which then required a second surgery and radiation therapy. Both poor as well as favorable outcomes have been reported ⁽³⁾.

In conclusion, ossified meningiomas are very rare tumors. This metaplasia can complicate the surgery and affect the surgical outcome. If predicted preoperatively, the CT scan, especially with reconstruction can show the exact shape of the tumor. This knowledge can be very useful during surgery, especially providing information about the counteracting moves remote from the microscopic field.

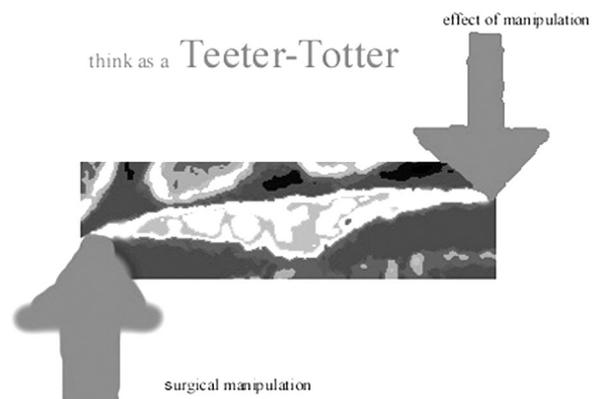
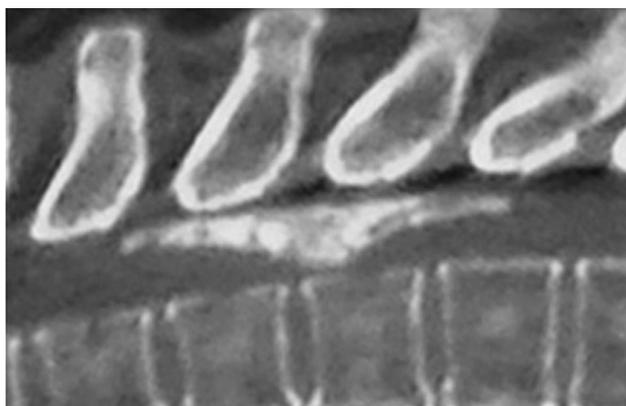


Figure-4. Preoperatif CT with a diagram: During surgery, the non flexible nature of the tumor will engender it to act as a teeter-totter.

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