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OPINION

Images of a Highly Metastatic Ependymoma of the Cauda

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ABSTRACT

Images from a spinal ependymoma extending from twelfth thoracic to the third lumbar vertebral level will be discussed, together with the history and the final outcome of a highly metastatic neuroepithelial tumor. The young female patient some weeks after laminectomy was diagnosed with multiple metastases, in the form of miliary mottling in both lungs, as well as with left pleural involvement with massive effusion and a solid formation in the right mammary gland. Although ependymomas rarely metastasize, a tight follow-up regimen and thorough screening is advisable, since case reports of multiple metastases via diverse routes (seeding, hematogenous) are becoming frequent and of concern.

Images in Clinical Medicine

Primary tumors of nervous system rarely metastasize, and while doing so generally they spread locally per continuitatem, or *via* lymphatics. This is very much true for glial tumors, and in fact glioblastomas rarely metastasize, for reasons that are still very much debatable [1]. Metastases generally follow surgical intervention; spontaneous metastases are an extreme rarity [2].

On the other hand, neuroepithelial neoplasms might have a good chance of metastasizing, even remotely [3]. Reports of metastasizing ependymomas in the majority deal with pediatric ages, since there is a clear age profile of this type of tumor, among others [4].

A twenty-one years old female patient appeared for consultancy following gait difficulties, throbbing pain in both lower extremities, and urinary hesitancy. Upon examination she showed no pathological reflexes, with a left foot drop and Achillean bilateral hyporeflexia.

A non-enhanced lumbar spine MRI showed a considerable extradural mass formation extending to several vertebral bodies (Figures 1A,B). A decompression laminectomy Th12-L2 was performed, with the situation improving slightly during the two postoperative weeks.

The pathological specimen was sent to an external facility for microscopic evaluation. Findings suggested small uniform cells with oval nuclei, with cellular rosette formation in the perivascular areas, and a diagnosis of myxopapillary ependymoma of anaplastic grade was made.

At one month after surgery, the patient presented for a follow-up in a debilitated status, while losing ten kilograms in weight, loss of appetite, low-grade but persistent fever (37.5-37.8°C), cough and a slight sense of dyspnea.

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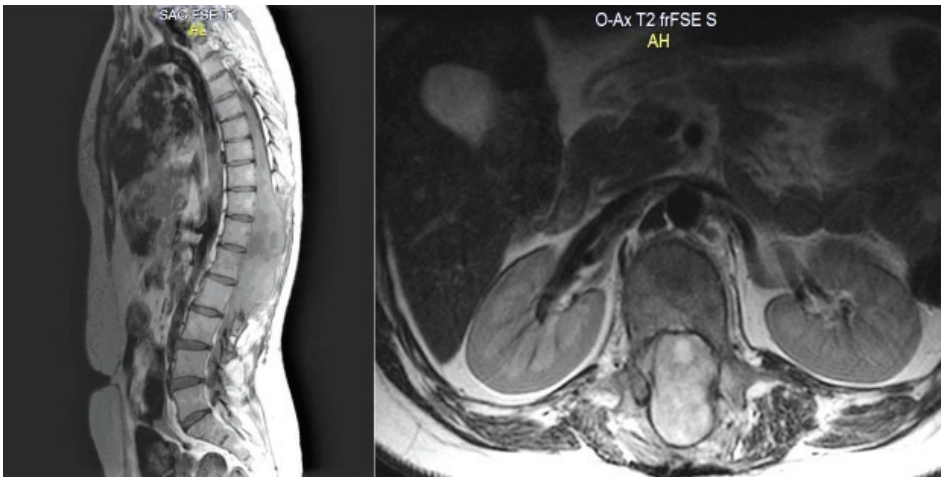

Figure 1 A): Sagittal T1 lumbar spine MRI images, with an extradural mass extending from L3 rostrally to Th10 vertebrae.
B): The mass extends dorsally while remaining extraneural (axial T2 lumbar spine MRI images).

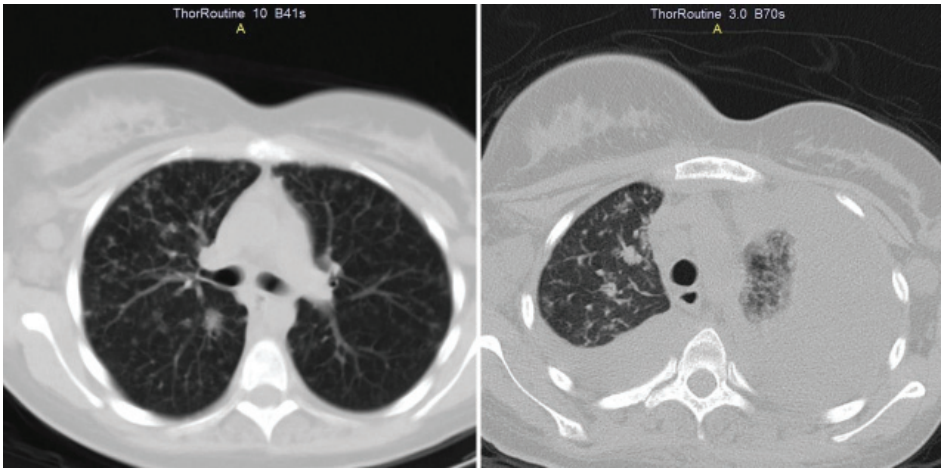

Figure 2 A): Miliary mottling in the thorax CT.
B): Ten days later the left lung almost collapsed with a massive pleural effusion.

A total body CT was performed, showing miliary mottling in both lungs. The patient was unsuccessfully treated with antibiotics (cefuroxime 2 grams daily intravenous route in combination with moxifloxacin 400 milligram per os daily for a total of seven days) along with supportive therapy (liquids, antipyretics).

Ten days later a control thorax CT showed massive pleural involvement and effusion in the left lung (Figures 2A,B). A Mantoux test was negative, and a pleural puncture was inconclusive.

Furthermore, both thorax CTs (initial and of control) showed a growing appearance of a solid mass in her right mammary gland (Figure 3), which was considered a gland metastasis.

The patient was sent for oncological treatment, but her deteriorating situation was not permissive to chemotherapy and she passed away some days later, while receiving

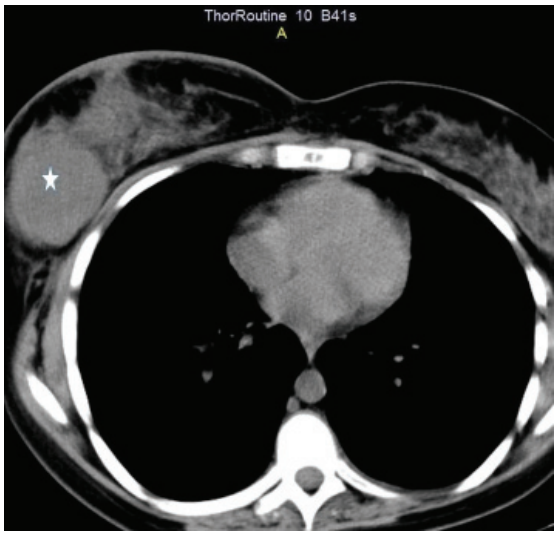

Figure 3 A solid mass (white star) was noted in the right mammary gland, denoting a remote metastasis of the lumbar ependymoma.

palliative care (morphine intramuscular 10 milligrams twice daily along with oxygen via a nasal mask).

The issue of metastasizing neuroepithelial tumors and respective treatment is debatable, since the final outcomes are generally poor. Spinal ependymomas might seed even inside the intracranial space, as some uncommon cases suggest [5].

Sources have previously reported as well cases of caudal ependymoma metastasizing in the lung and other thoracic structures [6,7]. Impressively enough, some authors have succeeded into finding lung metastases forty-six years after the first operation for a spinal ependymoma [8].

Spinal ependymomas represent as a rule benign tumors, with very rare cases of extraneural metastases; pleura is even more rarely involved [9]. Myxopapillary ependymomas are considered as in the WHO classification (World Health Organization) as grade I tumors, but malignant behavior might appear even among this group of tumors [10]. Our case demonstrated that pleural and mammary gland metastases might co-exist, badly influencing the final outcome of a neuroepithelial tumor.

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