Thoracic medulloblastoma metastasis: a case report and literature review

Metástase torácica de medulloblastoma. Relato de caso e revisão da literatura

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ABSTRACT

Introduction: Medulloblastoma is one of the most frequent malignancies of Central Nervous System (CNS) in childhood and has low incidence in adult population. Recurrences are frequent in both populations; systemic metastasis is a rare event. Objective: Report an unusual medulloblastoma case evolution, with thorax metastasis after 6 years of quiescence and compare results with literature data. Methods: Registers survey of previously operated patient from a posterior fossa medulloblastoma with diagnose of thoracic metastasis. Acquired data were analyzed and compared with those from literature. Case report: Twenty-two years-old patient, with a previously operated on posterior fossa medulloblastoma. Six years later, presents with asthenia and vertigo: an x-ray diagnosis of a lesion in the apex of left chest is confirmed with a thoracic computerized tomography. A laparoscopic biopsy is done, disclosing an infiltrative tumor, adherent to the parietal pleura and highly vascularized. AP diagnosis was compatible with metastasis of medulloblastoma. Conclusion: Posterior fossa recurrences are frequent in the adult population, followed by the subfrontal region. About 5% of medulloblastoma metastases are systemic, especially in bones (77%), and even rarer in the lungs, as shown in this report. Keywords: Cerebellar Neoplasms, Medulloblastoma, Primitive Neuroectodermal Tumor, Neoplasm Metastasis.

RESUMO

INTRODUCTION

Medulloblastoma is one of the most frequent Central Nervous System (CNS) tumors in infant population, corresponding for 20 to 30% of all CNS children’s tumors. It manifests before 15 years old with bimodal incidence curve. In adults, its frequency is low, between 0.4 and 1%, having between men and white people the major incidence. Its cells ability of surviving in subarachnoid space is well known, what explains, partially, its high recurrence in the CNS.1,4

There are few reports of extra neural medulloblastoma metastases in literature and it has been associated with lost of meningeal integrity, like the usage of shunts, previous surgical procedures and isolated radiotherapy2, 4, 14, 18, 19.

OBJECTIVES

To show a case of a patient previously operated on for a posterior fossa medulloblastoma that had an unusual evolution, with thoracic metastasis, after a six years free-disease survival period, as well to compare data with recent medical literature.

METHODS

Registers survey of previously operated on patients from posterior fossa medulloblastoma with recent diagnosis of thoracic metastasis was used. Acquired data were analyzed and compared with data from literature.

CASE REPORT

Male patient, 22 years of age with a previously operated posterior fossa medulloblastoma in September 2001. The primary lesion was described as a tumor from right cerebellar hemisphere with extension to meninges, ipsilaterial transverse venous sinus, sinus confluence and occipital bone. Right occipital craniotomy and gross total tumor excision with macroscopically 95% of the lesion being excised, followed by adjuvant chemotherapy and radiotherapy. Since then, the patient was followed in the outpatient clinic, with no evidence of disease recurrence. Six years later, the patient evolves with asthenia and vertigo symptoms, and a chronic anemia is investigated: a relevant worsening of anemia is evidenced and a blood transfusion is indicated. A chest x-ray reveals a hyperdense lesion in the apex of the left thorax (Fig. 1).

Chest computed tomography demonstrated a lesion in dorsal apex of left thorax with approximately 8 centimeters of diameter, well defined limits in pulmonary interface but infiltrative in parietal border, with pleural and adjacent structures involved, with associated bone destruction (Fig. 2).

Thoracoscopy with excisional lesion biopsy was performed, revealing an infiltrative and well vascularized lesion attached to parietal pleura, whose histological analysis was compatible with medulloblastoma metastasis (Fig. 3). The patient is under multidisciplinary follow-up, with signs of bone metastasis in right knee.

The histology preparation of the primary lesion showed hyperchromatic groups of cells (HE). Right - thoracic lesion exam evidences similar cellular characteristics: groups of large cells with dense chromatin (HE).
DISCUSSION

The first well described case of extra-neural metastasis of medulloblastoma was reported in 1936\textsuperscript{19}; since then, few reports have been published in medical literature. The major tendency of medulloblastoma cells to achieve subarachnoid and ventricular spaces predisposes dissemination to the spinal compartment\textsuperscript{1, 14, 19}. Evidence shows that its cells have the ability to survive in subarachnoid environment and have feasibility to dissemination or growth and adhesion to CNS tissue\textsuperscript{4}. However, besides its low incidence, systemic metastases of medulloblastoma are related to progression of the neoplasm and to worsening of prognosis when compared to cases of CNS metastasis or recurrence.

About 5% of medulloblastoma metastases are systemic, in special to bone tissue (77%), lymphatic tissue (33%), pulmonary tissue (17%), muscles (13%) and liver (10%) as shown in Fig. 4, adapted from a literature review done by Rochkind et al.\textsuperscript{24}.

Systemic metastases of medulloblastoma are a rare event, however recurrence in adult population are frequent, especially in primary lesion site\textsuperscript{1 14}, both of them with prognostic implications not well defined by far in the literature. As shown, medulloblastoma metastases to the thorax are rare, especially when there is no recurrence in the original site and after a long recurrence-free time.

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REFERENCES


