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EXPERIENCE REPORT

Rare presentation of thyroid carcinoma metastasis in the clivus

Presentación rara de metástasis de carcinoma de tiroides en el clivus

Apresentação rara de metástase de carcinoma de tireóide no clivus

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Abstract

This study aimed to report the case of a patient with metastasis of thyroid carcinoma to the clivus, highlighting the clinical presentation and the importance of a thorough diagnostic search. A descriptive study was carried out, based on clinical data, imaging exams, histopathological analysis and bibliographic review. A 61-year-old patient with divergent strabismus, eyelid ptosis, cranial nerve VI palsy and headache. Magnetic resonance imaging revealed an expansile lesion in the clivus, and histopathological examination confirmed differentiated thyroid carcinoma. The transsphenoidal approach was adopted for diagnosis and symptomatic relief, although complete resection was limited. It is concluded that metastases to the clivus represent a rare complication of thyroid carcinoma. The diagnostic approach should include detailed imaging exams and histopathological analysis, and multidisciplinary management is crucial to optimize treatment and patient quality of life.

Descriptors: Thyroid Carcinoma; Clivus Metastasis; Sixth Cranial Nerve Palsy; Neurology; Neoplasms.

Resumén

El objetivo de este estudio fue reportar el caso de atención a un paciente con metástasis de carcinoma de tiroides al clivus, resaltando la presentación clínica y la importancia de una búsqueda diagnóstica exhaustiva. Se realizó un estudio descriptivo, basado en datos clínicos, exámenes de imagen, análisis histopatológico y revisión bibliográfica. Paciente de 61 años con estrabismo divergente, ptosis palpebral, parálisis del VI par craneal y cefalea. La resonancia magnética reveló una lesión expansiva en el clivus y el examen histopatológico confirmó un carcinoma tiroideo diferenciado. Se adoptó el abordaje transesfenoidal para el diagnóstico y el alivio sintomático, aunque la resección completa fue limitada. Se concluye que las metástasis al clivus representan una complicación rara del carcinoma de tiroides. El enfoque diagnóstico debe incluir exámenes de imagen detallados y análisis histopatológico, siendo el manejo multidisciplinario crucial para optimizar el tratamiento y la calidad de vida del paciente.

Descriptores: Carcinoma de Tiroides; Metástasis en el Clivus; Parálisis del Nervio Craneal VI; Neurología; Neoplasias.

Resumo

Objetivou-se relatar o caso de assistência a um paciente com metástase de carcinoma de tireoide para o clivus, destacando a apresentação clínica e importância de uma profunda busca diagnóstica. Foi realizado um estudo descritivo, baseado em dados clínicos, exames de imagem, análise histopatológica e revisão bibliográfica. Paciente de 61 anos com estrabismo divergente, ptose palpebral, paralisia do VI nervo craniano e cefaleia. A ressonância magnética revelou lesão expansiva no clivus, e o exame histopatológico confirmou carcinoma tireoidiano diferenciado. A abordagem transesfenoidal foi adotada para diagnóstico e alívio sintomático, embora a ressecção completa tenha sido limitada. Conclui-se que as metástases para o clivus representam uma complicação rara do carcinoma de tireoide. A abordagem diagnóstica deve incluir exames de imagem detalhados e análise histopatológica, sendo crucial o manejo multidisciplinar para otimizar o tratamento e a qualidade de vida do paciente.

Descritores: Carcinoma de Tireoide; Metástase para Clivus; Paralisia do VI Nervo Craniano; Neurologia; Neoplasias.

Introduction

Cranial metastases from thyroid carcinomas are rare, especially in regions such as the clivus, a fundamental anatomical structure located at the base of the skull. Lesions in this region often present neurological symptoms related to compression of cranial nerves, especially the VI nerve, including diplopia, strabismus, and headache. Differentiated thyroid carcinoma, although with a good prognosis in the early stages, may present aggressive behavior and develop a poor prognosis in cases of metastasis[1,2].

Given the above, this study aims to report the case of care for a patient with metastasis of thyroid carcinoma to the clivus, highlighting the clinical presentation, diagnostic approach, and therapeutic management, emphasizing the difficulties and peculiarities of the treatment.

Methodology

A descriptive study was conducted based on clinical data, imaging exams, and histopathological findings of a patient treated at a hospital in the Federal District. The information was obtained through a review of the medical records and discussion with the multidisciplinary team involved in the case. Additionally, a bibliographic search was conducted in indexing databases, using the terms: “Thyroid Carcinoma”, “Clivus Metastases” and “Thyroid Carcinoma Metastases”; to support the discussion and contextualize the findings of the case.

Results and Discussion

A 61-year-old male patient presented with divergent strabismus in the left eye for 2 months, associated with diplopia, left eyelid ptosis, left extrinsic ocular motility disorder, and holocranial headache. Medical history included arterial hypertension and hypothyroidism secondary to thyroid resection due to nodules 10 years ago, with regular use of losartan and levothyroxine. Neurological examination revealed left ptosis and left cranial nerve VI palsy, with a Karnofsky Performance Status of 70.

Magnetic resonance imaging of the skull revealed an expansive lesion in the clivus, sphenoid body, and portion of the occipital bone on the left, extending superiorly to the sellar region and anteriorly with invasion of the sphenoid sinus (Figure 1). The lesion, measuring 3.8 x 4.2 x 3.3 cm, had significant contrast enhancement and bone destruction. The initial suspicion was the chordoma of the clivus due to its location and radiological presentation. However, transsphenoidal surgery revealed an extremely bleeding lesion with a soft consistency, characteristics not compatible with chordoma. During the procedure, the patient presented hemodynamic instability, requiring vasoactive drugs, which limited the extent of the surgery to complete resection, opting for biopsy collection and completion of the procedure. The anatomopathological examination showed carcinoma with follicular and trabecular patterns (Figure 2) metastatic to the clivus, with positive immunohistochemistry for vimentin, CK7, TTF-1, ATRX, Ki67 10%, AE1AE3, thyroglobulin, PAX-8, and CAM. These markers confirmed the thyroid origin of the lesion.

Metastasis to the clivus is an uncommon and extremely rare manifestation of thyroid carcinoma, and it is essential to perform a differential diagnosis with other skull base lesions, such as chordomas and meningiomas[3].

Figure 1. Skull MRI. Brasília, DF, Brazil, 2024

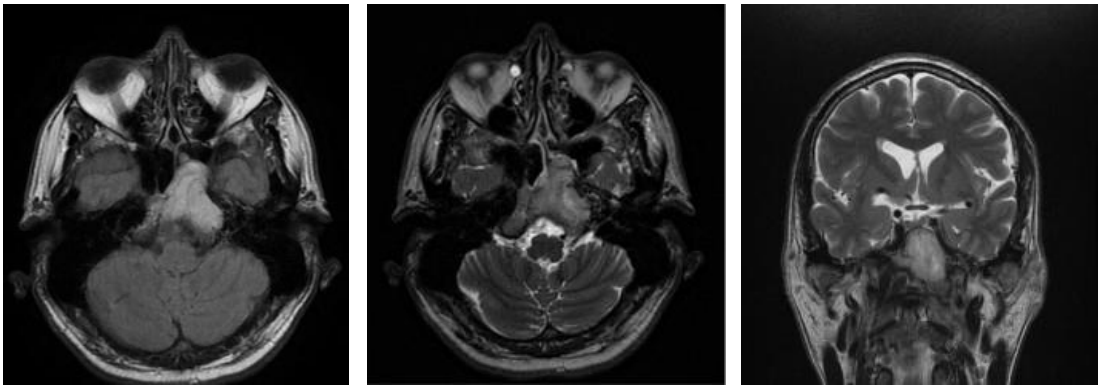
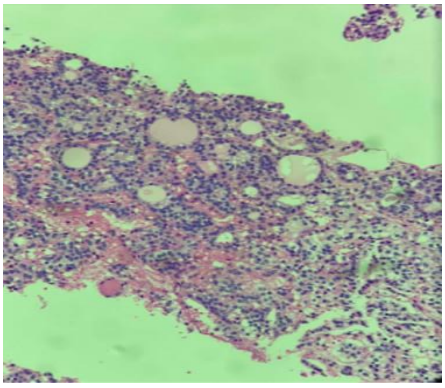


Figure 2. Anatomopathological examination. Brasília, DF, Brazil, 2024



In a study[4] conducted in 2009, metastases to the clivus represent only 0.18% of intracranial tumors and 0.42% of skull base tumors (SBR). Thyroid carcinomas are the third most common cause of metastases in this region (11.7%), behind prostate cancer and hepatocarcinomas. Palsy of the VI cranial nerve is a frequent symptom, due to compression in Dorello's canal, which corroborates the clinical findings of the present case[2].

The most common sites of metastasis in thyroid carcinomas are the cervical lymph nodes, whereas distant metastases usually involve the lungs and bones, with the brain being a less frequent site. Lung metastases may present as micronodules, often diagnosed with imaging, whereas bone metastases frequently cause pain or pathological fractures. In contrast, brain metastases are often diagnosed late due to their low prevalence and nonspecific clinical presentation, such as headaches, visual changes, and focal neurological deficits. This variation in presentation and frequency highlights the importance of a comprehensive evaluation for early detection and appropriate management of metastases[1,5].

Considering the location of metastases in the nervous system of differentiated thyroid carcinoma, studies indicate a median survival of 17.5 months after diagnosis of intracranial metastases and a survival of 51.6 months in cases of metastases that directly affect the skull, influencing the prognosis[6].

Management is challenging due to the complex anatomical location and the possibility of intraoperative complications, as observed in this case. The transsphenoidal approach is widely described as ideal for histopathological diagnosis in cases of clivus lesions, providing sufficient exposure for sample collection and symptom relief, with a low rate of surgical complications[7].

Conclusion

This case highlights the importance of considering metastases as a differential diagnosis in patients with skull base lesions and a history of thyroid carcinoma, even after long periods of remission. The diagnostic approach should include detailed imaging studies and histopathological analysis with immunohistochemistry. Management requires a multidisciplinary team and careful surgical planning. Follow-up is essential to assess disease progression and adjust treatment, seeking a better quality of life for the patient. The rarity and atypical presentation of this case contribute significantly to the medical literature, offering insights into the clinical presentation, diagnosis, and management of thyroid metastases to the clivus.

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