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Commentary

Prolactinoma in a Patient with a Primary Adenoma

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DESCRIPTION

A rare occurrence where a metastatic lesion is found within an adenoma. The reported case involves a patient with a known primary neoplasm who presented with persistent prolactinoma growth despite medical treatment. Prolactinoma is a type of pituitary adenoma, a benign tumor that arises from the pituitary gland and secretes excessive prolactin hormone. The patient's prolactin levels were normalized before treatment, which raised suspicion for a metastasis. However, definitive pathological evidence did not confirm the diagnosis of prolactinoma, as invasion of the adenoma by a metastatic mass led to replacement of the primary tumor.

The diagnosis of composite tumors with metastatic lesions within adenomas can be challenging, as they may not present with typical clinical or radiographic features. In such cases, reevaluation of the working diagnosis and obtaining pathological samples by the neurosurgical working group should be considered. In the reported case, the patient's elevated prolactin levels and radiographic evidence of an adenoma were used to establish a diagnosis and treatment plan. However, this highlights the potential limitations of relying solely on hormonal levels and radiographic findings for diagnosis, and the importance of obtaining pathological confirmation whenever possible.

Surgical excision or biopsy may be a prudent approach in cases where composite tumors are suspected, in order to identify nonfunctional adenomas or atypical sellar masses. In the reported case, the patient was offered the opportunity for surgery when unexpected growth was observed. Surgical intervention can not only provide pathological confirmation of the diagnosis but also offer a chance for complete tumor removal, which is often curative in cases of benign adenomas. However, the decision to pursue surgery should be carefully considered, taking into account the overall health of the patient, the risks associated with the procedure, and the potential benefits in terms of diagnosis and treatment.

The literature on composite tumors with metastatic lesions within adenomas is scarce, reflecting the rarity of this phenomenon. A review of the existing literature reveals only a handful of reported cases, with varying clinical presentations, diagnostic challenges, and treatment outcomes. Most reported cases involve metastatic lesions from lung or breast cancer infiltrating into pituitary adenomas, although cases with other primary malignancies have also been reported. The exact mechanisms underlying the development of composite tumors are not well understood, and further research is needed to elucidate the pathophysiology and optimal management of these rare tumors.

The prognosis of composite tumors with metastatic lesions within adenomas is generally poor, with higher morbidity and mortality rates compared to typical adenomas. The presence of metastatic lesions indicates advanced disease and may require more aggressive treatment approaches, such as systemic chemotherapy or radiation therapy, in addition to surgical intervention. However, the optimal treatment strategy for these cases remains uncertain, and a multidisciplinary approach involving neurosurgeons, endocrinologists, oncologists, and pathologists is often necessary to tailor a treatment plan based on the individual patient's condition.

In conclusion, composite tumors with metastatic lesions within adenomas are rare but clinically challenging entities. Prompt identification and appropriate management are crucial to optimize patient outcomes. In cases where a patient has a known primary neoplasm and prolactinoma growth persists despite medical treatment, reevaluation of the working diagnosis and obtaining of pathological samples by the neurosurgical working group.

The patient in the reported case had an uncomplicated post-operative course and was discharged home six days after the surgery. The initial examination of the third nerve palsy, which had shown partial paralysis of the left third cranial nerve, revealed improved eyelid opening and reduced diplopia (double vision) in the immediate postoperative period. This suggests that the surgical intervention was successful in alleviating some of the symptoms associated with the cranial nerve dysfunction.

A post-operative Magnetic Resonance Imaging (MRI) scan showed that 50% of the tumor was resected, with residual tumor mainly occupying the cavernous sinus. The cavernous sinus is a

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cavity located in the skull base that contains several important structures, including the carotid artery and cranial nerves.

Due to the location of the residual tumor, further treatment was warranted to address the metastatic state of the patient.

A pan-body Positron Emission Tomography (PET) scan was performed to assess for the presence of additional metastatic lesions throughout the body, and no evidence of such lesions was found. Based on this, adjuvant treatment in the form of fractionated radiotherapy was implemented, consisting of a total dose of 20 Gy delivered in 5 fractions. Fractionated radiotherapy involves dividing the total radiation dose into smaller, more manageable fractions delivered over several sessions, which is a common approach in treating certain types of tumors.

A follow-up MRI performed two months after the completion of radiation therapy showed a 50%-60% reduction in the size of the residual tumor. This suggests that the radiation therapy was effective in reducing the tumor burden.

At the final follow-up, which was four months after the surgery, the patient's diplopia and ptosis (drooping of the eyelid) continued to improve, indicating a positive response to the treatment. However, unfortunately, no further treatment was provided after the publication of the work, as the patient was lost to follow-up. It is important to note that regular follow-up and ongoing treatment are essential in managing patients with tumors and other complex medical conditions to monitor their progress and ensure optimal outcomes.

Overall, the reported case highlights the multidisciplinary approach to managing a patient with a pituitary adenoma and metastatic lesion, involving surgical intervention, adjuvant radiotherapy, and close follow-up to monitor treatment response. The improvement in the patient's symptoms and reduction in tumor size on follow-up imaging suggest a positive response to treatment, although the patient's loss to follow-up underscores the importance of ongoing medical care and monitoring in managing complex medical cases.