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Non-Secretory Macroprolactinoma Tumour Response to Dopamine Agonist Therapy in a Post Pituitary Resection Patient-A Case Report from Saudi Arabia Specialist Hospital

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ABSTRACT

We present a very rare case of pituitary macroprolactinoma with mildly elevated dilutional prolactin levels after post-pituitary resection and the histopathology report was strange. We noticed prolactinoma with follow-up MRI and patient had pituitary remnant of 0.7 x 0.8 mm. He was responded excellently to cabergoline.

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Introduction

Pituitary adenomas are benign neuro-endocrine tumors and represents 10% of all intracranial tumors [1]. It can be classified according to its secretory hormone product.

Prolactinomas are the most common type of pituitary adenomas and correspond to 53% (41–66%) of them [2]. The most secretory pituitary tumor is prolactinoma and Proloactinoma affects women between 20 and 50 years old, with a gender ratio of 10:1 [3,4]. On the other hand, men generally present with macroadenoma [5]. In these hyperprolactinemia patients with clinical features, diagnosis is made by basal prolactin levels [6]. Prolactin levels usually corresponds to the prolactinoma tumor size, and hence should be diagnosed before sending the patient to trans sphenoidal surgery as it responds very well to medical therapy [7].

Case Presentation

We present a rare case of 47 y old male, who was known case of primary hypothyroidism on replacement therapy. He was presented to the neurosurgery emergency department at King Abdul Aziz specialist Hospital, Taif, Saudi Arabia, with bilateral hemianopia and severe headache with postural hypotension. All his symptoms were progressing for over three weeks and not relieved with pain killer. Patient also had loss of libido and fatigue for six months duration.

Vitally patient was hypotensive (95/55 mmHg) with postural drop and pulse 105 /minute,
He was pale and positive for bilateral hemianopia.

A hormone profile was done and found to have pan hypopituitarism

Hormones	Results (ref value)
PROLACTIN	33 ng/ml (7 to 20ng/ml)
LH	0.4 IU/L (1.2-7.8 IU/L)
FSH	0.7 IU/L (1.5-12.4 IU/L)
TESTOSTERON	150 ng/dl (300-1000 ng/dl)
ACTH	12 pg/ml (10-60 pg/ml)
CORTISOL	0.3 mcg/dl (5-23 mcg/dl)
TSH	4.3 mlU/L (0.35 to 4.94mlU/L)
T4	14.5 pmol/L (9.01 to 19.05 pmol/L)
IGF1	145 (182-550)

MRI pituitary was done and found to have a pituitary macro adenoma 2.2 x 3.4 x 1.5 cm and there was chiasma compression.

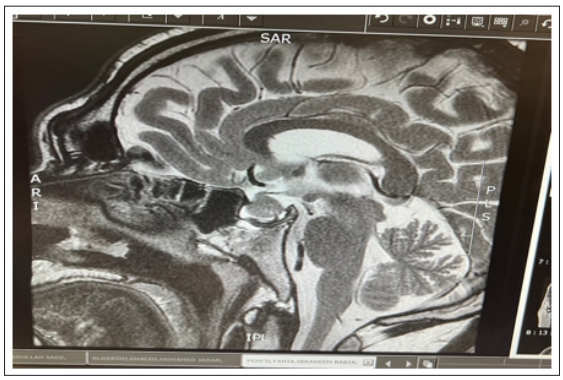
As the patient's dilutional prolactin level does not appropriately correspond to the size of the adenoma and is mildly elevated due to stalk compression, we labeled the mass as nonfunctioning and the patient was sent for trans sphenoidal resection.

Post resection histopathology showed prolactinoma and there was a remnant of pituitary mass 8 x 8 x 5 mm and the prolactin was lower than normal level postoperatively.

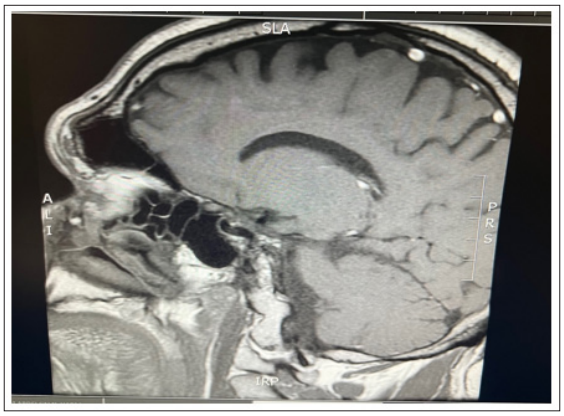
The patient followed up at OPD regarding adenoma remnant size and lab values. After 5 years of follow-up, the mass was slowly and progressively increased by 20% from the baseline and the

prolactin level was still at the normal range. We decided to start cabergoline as the previous histopathology was prolactinoma, eventhough prolactin level was within normal. After 2 months of cabergoline treatment, we found the MRI pituitary reduced in size by 50% and the patient responded very well to cabergoline.

Before Cabergoline Treatment



After Cabergoline Treatment



Discussion

Epidemiological studies on pituitary adenomas have shown an incidence of 4–7 cases per 100,000 per year and prevalence of 75–115 cases per 100000 per year, varying with age and gender. Prolactinomas are the most common type of pituitary adenomas and correspond to 53% (41–66%) of them [8].

Prolactinoma is a most common benign tumor that mainly affects young, less than 40 years and females [9]. This can be detected earlier in females as they could present with irregular cycles. In males, usually asymptomatic and can present with macroprolactinoma. It is the most common hormone-secreting pituitary tumor, and patients can be presented with different symptoms like hypogonadism, galactorrhea, infertility, and compression symptoms from a large pituitary mass which may vary from visual disturbances (bitemporal hemianopsia to amaurosis, strabismus) to intracranial hypertension [10].

Diagnosis is straightforward as high prolactin levels and with large prolactinoma, we should exclude the hook effect as the large adenoma corresponded to the high-level prolactin levels. High prolactin is associated also with supressed level of gonadotroph hormone [11,12]. MRI pituitary protocol is the gold standard radiological maneuver.

Prolactinoma is medically treatble and the only pituitary tumor that can be managed medically by cabergoline. It is a dopamine agonist and selective D1 receptor and has fewer side effects than bromocriptine [13]. Still, very effective in reducing tumor size and in most, prolactinoma cures but few cases can be cabergoline resistant and these need surgical or radiological intervention [14,15].

Conclusion

In rare cases, some prolactinomas are nonactive tumors but responds to cabergoline and even in clinically not hormonal secreting tumors, cabergoline can reduce the size of the tumor very well but the diagnosis is difficult and the case can be labeled as nonfunctioning and referred to neurosurgery for trans-sphenoidal resection.

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