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RESEARCH ARTICLE

PITUITARY STONE ADENOMA ASSOCIATED WITH SEVERE HYPERPROLACTINEMIA CASE REPORT

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Abstract

A 35-year-old patient consulting for erectile dysfunction, with a progressive visual acuity loss. Biological assessment revealed hyperprolactinemia at 4315 ng/ml and low testosteronemia at 6.8 nmol/l. Skull X-ray showed an enlarged sellaturcica with voluminous intra- and suprasellar calcifications. A cranial CT scan revealed an intra- and suprasellar calcified mass. Transphenoidal surgery was performed. The tumor was partially removed and the piece was made of calcified grayish granular tissue. Histological examination showed adenomatous cells with large granular calcification lesions. Immunohistochemistry confirmed "prolactin adenoma". Cabergoline treatment was effective on the calcified tissue remaining after surgery.

Introduction:-

Although calcifications are commonly associated with various sellar region masses such as craniopharyngiomas, meningiomas and aneurysms, calcification of pituitary adenomas is rare and it's very rare to find a large intratumoral calcified "pituitary stone"[1]. We describe a case of a pituitary stone found in a prolactin-secreting adenoma, revealed by erectile dysfunction.

Case report

This is a 35-year-old patient consulting for erectile dysfunction, with a 3-year history of progressive visual acuity loss. Clinical examination revealeda height of 168 cm with a weight of 87 kg and a body mass index of 30.8 kg/m2 (Obesitygrade I). The rest of the physical examination was unremarkable.

Ophthalmological examination revealed bilateral papilloedema with visual acuity of 2/10 in the right eye and 1/10 in the left, and a bitemporal hemianopia in the visual field. Skull X-ray showed an enlarged sellaturcica with voluminous intra- and suprasellar calcifications (Fig 1). A cranial CT scan revealed an intra- and suprasellar calcified mass extending into the third ventricle and sphenoidal sinus (Fig 2). Bone windows showed that the tumor was not a compact bone lesion, but a calcified granular tumor. Magnetic resonance imaging (MRI) showed intra- and suprasellar lesions without hydrocephalus (Figs. 3 and 4). Biological assessment revealed hyperprolactinemia at 4315 ng/ml and low testosteronemia at 6.8 nmol/l.

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Transphenoidal surgery was performed urgently to decompress the optic tract. The tumor was partially removed and the piece was made of calcified grayish granular tissue. Histological examination showed adenomatous cells with large granular calcification lesions. Immunohistochemistry confirmed "prolactin adenoma".

After surgery, serum prolactin levels fell from 4315 to 550 ng/ml. Postoperative CT showed partial removal of the adenoma (Fig. 5). Medical treatment with Cabergoline was initiated at a dose of 3 mg per week. Visual acuity improved rapidly. After 3 months, the patient's prolactinemia was 246 ng/ml and visual acuity was 6/10 in the left eye and 4/10 in the right.

At 5-year follow-up, the patient was in good health with no suggestive signs of hypopituitarism, including restoration of libido with a weight of 76 kg without any special diet, suggesting that the initial obesity was hypothalamic. Prolactin and testosterone levels were normal. Control MRI revealed a partially necrotic residue of 31 x 27 x 20 mm, which explains the improvement in bitemporal hemianopia on visual field testing.

Figures

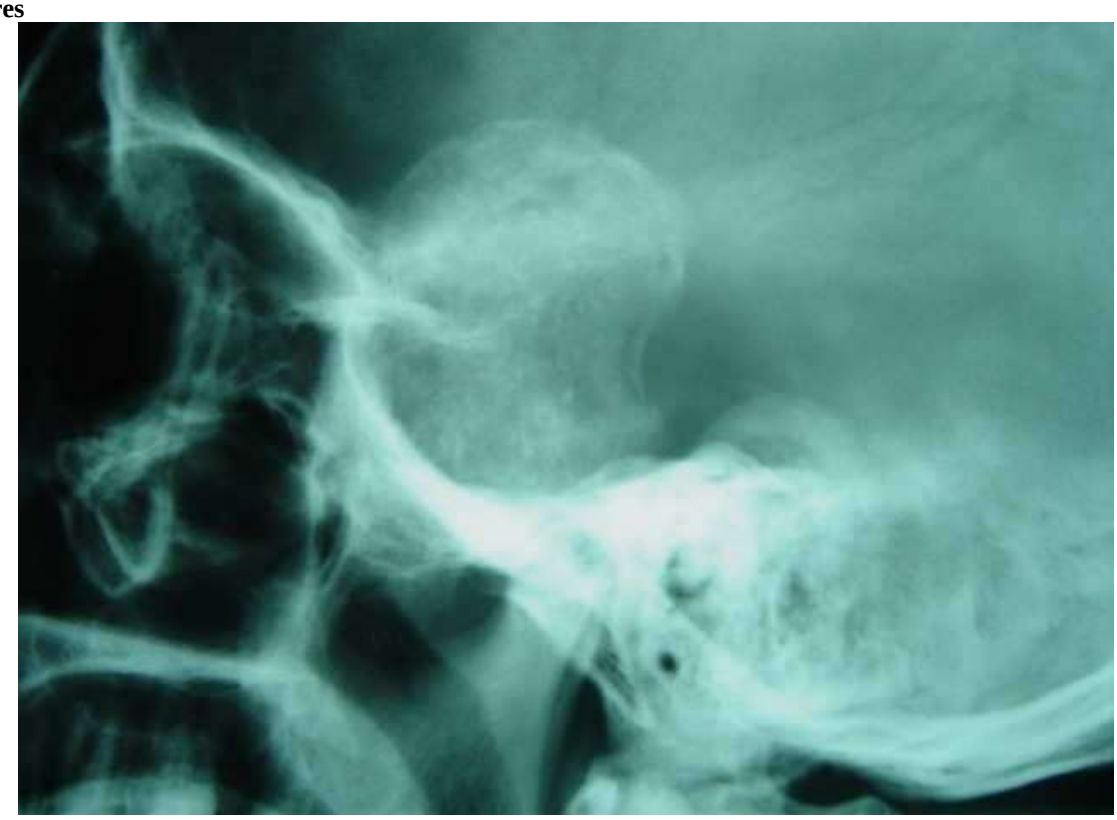

Figure 1:- Skull base X-Ray on lateral view, showing a large sellar and suprasellar calcification**.**

Figure 2:- Cerebral CT scan on axial view showing spontaneous hyper dense masse on suprasellar area.

Figure 3:- MR imaging on sagittal view showing a lesion on sellar and suprasellar region with compression of chiasm and the third ventricle.

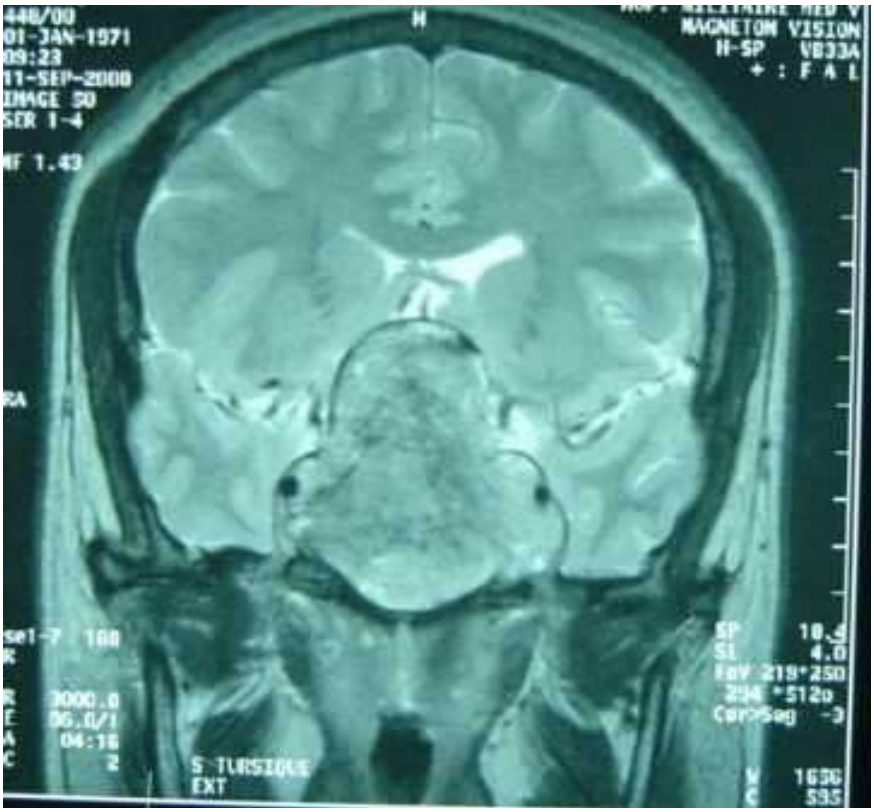

Figure 4:- MR imaging coronal view showing a lesion on sellar and suprasellar region with compression of chiasm and the third ventricle.

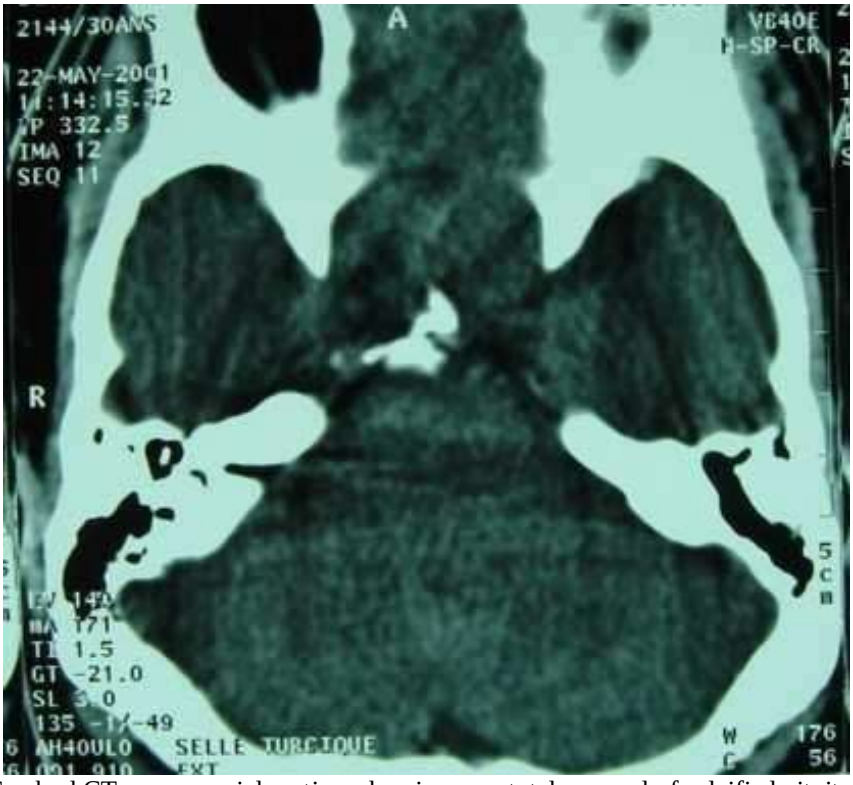

Figure 5:- Cerebral CT scan on axial section, showing near total removal of calcified pituitary adenoma.

Discussion:-

This patient presented with a large calcified pituitary adenoma secreting prolactin. Skull X-rays showed a large, granular, calcified lesion known as the pituitary stone. Cabergoline treatment was effective on the calcified tissue remaining after surgery.

Calcified pituitary adenomas are detected radiologically in 0.2% to 14% of cases and histologically in 5.4% to 25% of cases [1], [2], [3]. Generally, calcification types are classified as linear, capsular or granular within the adenoma [1]. A large calcified adenoma is rarely found [1], [4], [5]. Ossification of pituitary adenomas is rare. Exceptionally, calcium deposits may be large enough to form a "pituitary stone" and replace the entire tumour mass. Granular concretions within the adenomatous tissue are most often in the form of psammoma bodies or calcospherites[2], [6], [7].

The genesis of calcifications in pituitary adenomas may be due to the proliferation of osteogenic connective tissue resulting from the degeneration of the pituitary adenoma[8]. The duration of evolution and previous microbleeds in the tumour would contribute to the formation of the "Pituitary Stone" in these patients.

Transphenoidal removal of the entire tumor is not always possible[9]. Cabergoline treatment was effective in our case on the adenomatous component, with partial exeresis of the adenoma.

Conclusion:-

Pituitary stone is a very rare condition. It may be discovered as an incidental finding, or following neurological or endocrine disorders such as pituitary insufficiency, with or without hyperprolactinemia. A positive diagnosis is usually established by standard skull base radiography, then confirmed by CT scan.

Bibliography:-

[1] T. Tamaki, I. Takumi, T. Kitamura, R. Y. Osamura, et A. Teramoto, « Pituitary stone--case report », Neurol. Med. Chir. (Tokyo), vol. 40, no 7, p. 383-386, juill. 2000, doi: 10.2176/nmc.40.383.

[2] C. M. Carapella, P. Pompei, R. Mastrostefano, E. Occhipinti, A. Rocco, et P. Falaschi, « Calcified pituitary adenoma associated with severe hyperprolactinemia. Case report », J. Neurosurg., vol. 59, no 5, p. 871-874, nov. 1983, doi: 10.3171/jns.1983.59.5.0871.

[3] B. Rilliet, G. Mohr, F. Robert, et J. Hardy, « Calcifications in pituitary adenomas », Surg. Neurol., vol. 15, no 4, p. 249-255, avr. 1981, doi: 10.1016/S0090-3019(81)80003-1.

[4] C. von Westarp, B. K. Weir, et T. K. Shnitka, « Characterization of a pituitary stone », Am. J. Med., vol. 68, no 6, p. 949-954, juin 1980, doi: 10.1016/0002-9343(80)90229-6.

[5] J. L. Sherman, D. J. Schnapf, et S. S. Coker, « Computed tomography of a pituitary stone », J. Comput. Assist. Tomogr., vol. 7, no 6, p. 1120-1122, déc. 1983, doi: 10.1097/00004728-198312000-00045.

[6] S. Palaoğlu, M. Bavbek, S. Peker, B. Önol, A. Sungur, et A. Erbengi, « Ossified somatotropinoma », Surg. Neurol., vol. 41, no 2, p. 143-146, févr. 1994, doi: 10.1016/0090-3019(94)90112-0.

[7] F. Roncaroli, A. Fioravanti, A. F. Marliani, et F. Calbucci, « Osseous metaplasia in a growth hormone-secreting pituitary adenoma », Clin. Neuropathol., vol. 18, no 4, p. 205-207, 1999.

[8] S. Tavakol et al., « Calcified Prolactinoma of the Pituitary Gland: Illustrative Case Reports Highlighting Medical versus Surgical Intervention », J. Neurol. Surg. Part B Skull Base, vol. 81, no 1, p. 22-29, févr. 2020, doi: 10.1055/s-0039-1677678.

[9] J. Webster et al., « Pituitary stone: two cases of densely calcified thyrotrophin-secreting pituitary adenomas », Clin. Endocrinol. (Oxf.), vol. 40, no 1, p. 137-143, 1994, doi: 10.1111/j.1365-2265.1994.tb02456.x.