CASE REPORT

Atypical Pituitary Adenoma: A Case Report

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Abstract

A 56 years old diabetic hypertensive male was admitted through neurosurgery OPD with the complaint of vision problems in the right eye for the last 1 and 1/2 years. Peri-metry reveals bilateral temporal field defects and MRI examination showed a sellar and suprasellar mass infiltrating the surrounding structures including cavernous sinus. Histomorphologically and inmmunohistochemically, a diagnosis of atypical pituitary adenoma was made.

Introduction

Tumors of the pituitary gland and sellar region represent approximately 10% to 15% of all brain tumors. Numerous types of tumors may involve the sellar region, by far; the pituitary adenomas, benign epithelial tumors derived from cells of the adenohypophysis is the commonest one. In the past, numerous classifications have been proposed to classify pituitary adenoma. The recommended WHO classification, which is now used by most laboratories, incorporates the clinical and radiological presentation of the tumour with its morphologic features, immunohistochemical profile and ultrastructural appearance. The WHO classification introduced the concept of atypical adenomas for tumors that show histologic features suggestive of aggressive clinical behavior. These adenomas are characterized by elevated mitosis index a Ki-67 labelling index greater than 3% and overexpression of P53 by immunohisto-chemistry.[1]

As these variety of pituitary adenoma caries unfavorable prognosis, needs close follow up, it is essential that surgical pathologist, and neuropathologist should accurately diagnose these cases. Besides, there is no published report of atypical pituitary adenomas in this country so far. With this background knowledge in this case report we describe a case of atypical pituitary adenoma in Apollo Hospital Dhaka.

Case History

A 56 years old diabetic, hypertensive Bangladeshi male was admitted through neurosurgery OPD with the complaints of vision problem for last 1 and 1/2 years in the right eye. He did not have any complaints regarding hearing, walking, hand problem, any loss of consciousness or convulsions. On examination, his vitals were stable and Glasgow coma scale was 15/15. Examination of eye revealed both pupils were 2 mm and equally responsive to light, normal anterior segment of both eye, visual

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acuity of right eye 1/60 and left 6/9, perimetry shows temporal field defect: Right >left. Fundus examination reveals pallor of disc in both eyes. Intraocular pressure of both eyes was 20 mm of Hg. His hormonal level was serum cortisol 10µg/dl, FT_3 3.6 pg/ml, FT_4 1 ng/dl and serum prolactin 3.9 ng/ml. MRI examination of brain and peroperatively, a sellar, supra sellar and parasellar mass Grade D and E infiltrating the left cavernous sinus was seen. Transnasal transsphenoidal tumour decompression was done and tissue was sent for histopathology. Microscopically, the tumour tissue shows proliferation of uniform polygonal cells with round nuclei arranged in nests, trabeculae and sinusoidal pattern. In focal area, these cells show moderate pleomorphism with increased mitosis (Fig.1). Immunohistochemistry reveal strong positivity for P53 and a diagnosis of atypical pituitary adenoma was made.

Discussion

The aim of the current study was to present a case with clinical, imaging, and histopathological characteristics satisfying the 2004 WHO criteria for atypical pituitary adenomas.[3]

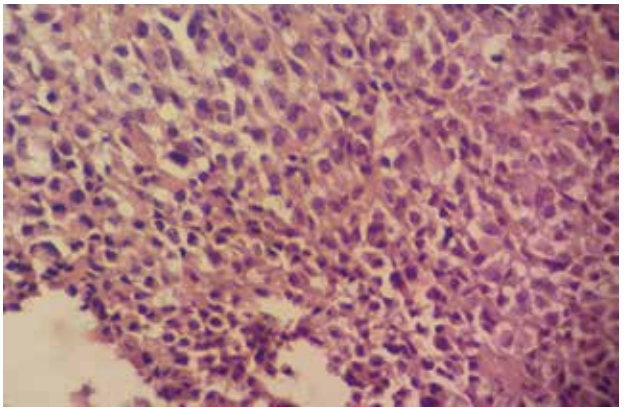

Fig. 1: Proliferation of tumor cells with moderate pleomorphism and increased mitosis.

Adenomas deriving from adenohypophyseal parenchymal cells are classified as typical adenomas or atypical adenomas. In very rare cases, they represent pituitary carcinomas (0.12%) of all cases.

Diagnostic criteria (2004 WHO classification) of atypical adenomas include elevated MIB-1 proliferative index (3%), excess p53 immunoreactivity, increased mitotic activity, and pleomorphism. Although each of these factors has been independently associated with more aggressive and invasive neoplastic lesion, the accuracy of these diagnostic features taken collectively has not been assessed to date, particularly in regard to degree of surrounding invasion and tumor recurrence rates.[3]

Atypical adenomas were found to have a poorer prognosis due to decreased operability by a higher degree of invasiveness, larger size, and accelerated growth.[4]

It differs from pituitary carcinoma only in the lack of metastases.[4]

Expression of p53 has been shown to correlate with the aggressiveness of pituitary adenomas and numerous other neoplastic lesions in selected studies. Another study by Thapar et al. Analyzed p53 expression in pituitary adenomas and carcinomas, reporting the proportion p53 in noninvasive adenomas, invasive adenomas, and carcinomas to be 0%, 15.2%, and 100%, respectively.[5]

In 2007, Saeger et al. reported their series of 4122 cases from the German Pituitary Tumour Registry. In 2005, this registry reported 12 of 451 cases of atypical pituitary tumors for an overall incidence of 2.7%.[2]

In a study by Scheithauer et al., which had available follow up on 78 patients with

adenomas, the criteria for atypical lesions were met in 6 cases (14.7%), of which 5 were recurrent tumours.[6]

In a large study comprising 121 cases of pituitary adenoma, Zada G and colleagues found that 15% of the tumour met the WHO criteria for atypical adenoma. These cases has mean age of fifth decades, a feature similar to other cases studied in large numbers.[7]

The prognosis of atypical pituitary adenoma is generally poor, although patients with long-term survival have been described. Due to the small number of cases, comparative studies of different treatment options are lacking.[8]

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