ABSTRACT

Introduction: Pituitary tumours may be functioning or non-functioning. Functioning tumours secrete PRL, GH, ACTH, TSH, FSH, LH and have clinical features pertaining to the hormones. We in our study tried to analyze the pre-op and post-op clinicoendocrinological (biochemical) status.

Materials and Methods: Over a span of 10 years from Jan 2010 to Jan 2020 we studied the pre-op and post-op clinical features, radiology (CT, MRI) and endocrine levels of 20 patients with functioning pituitary adenomas.

Results: Completeness of tumour removal dictates normalization of clinical features and endocrine levels. Microadenomas pose a more remission rate than macroadenomas.

Conclusion: Total tumour removal in a functioning pituitary adenoma normalizes the clinicoendocrinological parameters. Normalization rates are far more for microadenomas than macroadenomas.

KEYWORDS: Pituitary, adenohypophysis, somatotrophs, lactotrophs, corticotrophs

INTRODUCTION

Pituitary tumours constitute a unique class of neoplasia.

The most important is endocrine concerns and oncological issues. The diagnostic and therapeutic concerns reflect the duality of this clinical problem. Schloffer (1868-1939) first employed lateral rhinotomy to approach Sella. ¹

Technical contributions by Heurer(1882-1950) Frazier(1870-1936), Krause (1857-1937) Cushing and others led to adoption of transcranial approaches of pituitary. Norman Dott (1897-1936), Krause (1857-1937) Cushing and others led to adoption of transcranial approaches of pituitary. Jules Hardy of Montreal popularized the transsphenoidal microsurgery which is the preferred approach for more than 95% of pituitary tumours.

Pituitary tumours account for 10-15% of all primary brain tumours. Most pituitary tumours originate within the adenohypophysis. Adenohypophysis includes pars distalis (anterior lobe), pars intermedia (intermediate lobe) and pars tuberalis. The anterior lobe is composed of five principal secretory cell types somatotrophs (growth hormone secretion GH), lactotrophs (prolactin secretion PRL), corticotrophs (adrenocorticotropic hormone secretion ACTH secretion), thyrotrophs (thyroid stimulating hormone TSH secretion) and gonadotrophs (luteinizing hormone LH and follicle stimulating hormone FSH secretion). Among the functioning pituitary tumours the common are Prolactinoma (30% of all pituitary tumours), somatotroph adenoma, corticotroph adenoma, thyrotroph pituitary adenoma (<1% of all pituitary tumours) ².

We in our study analyzed the clinical features and endocrine status (biochemical parameters) of patients before and after operation.

MATERIALS AND METHODS:

Over a span of 10 years (from Jan 2010 to Jan 2020) we followed 20 patients of functioning pituitary adenoma. We studied their clinical features and endocrine levels and tried to analyze the improvement of clinical features and normalization of endocrine levels after operation.

After patient admission the work up of the patients which was done are:

Clinical Manifestations:

a. Pituitary hyperfunction

Results:

GH Secreting Adenoma (n=8)

<table>
<thead>
<tr>
<th>Size</th>
<th>Extention</th>
<th>Extent of tumour removal</th>
<th>Clinical features Pre-op</th>
<th>Clinical features Post-op</th>
<th>Endocrine levels Pre-op</th>
<th>Endocrine levels Postop</th>
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<tbody>
<tr>
<td>Microadenoma 1</td>
<td>-</td>
<td>Complete</td>
<td>Florid</td>
<td>Resolve</td>
<td>↑↑↑</td>
<td>Normal</td>
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<tr>
<td>Macroadenoma 2</td>
<td>Supra &amp; parasellar</td>
<td>Complete</td>
<td>5 Incomplete</td>
<td>Partial resolution</td>
<td>↑↑↑</td>
<td>Normal</td>
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Prolactinoma (n=10)

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<tr>
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Corticotroph Adenoma

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<tr>
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<th>Clini-cal features post-op</th>
<th>Endocrine levels post-op</th>
<th>Endocrine Levels</th>
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</thead>
<tbody>
<tr>
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<td>2</td>
<td>Complete</td>
<td>Resolved</td>
<td>Normal</td>
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RESULTS:
From our study we came to the opinion that complete tumour removal leads to resolution of clinical features and normalization of serum endocrine levels and incomplete removal leads to partial resolution of clinical features and reduction (not normalization) of endocrine levels.

Among 10 patients of Prolactinoma in one microadenoma and five macroadenomas we achieved complete tumour removal leading to complete resolution of clinical features and normalization of endocrine levels. In other adenomas our result was suboptimal.

Among 8 patients of GH secreting adenomas in 2 microadenomas and 3 macroadenomas we achieved complete tumour removal leading to complete resolution of clinical features and normalization of endocrine levels. In other adenomas our result was suboptimal.

Among 2 corticotroph microadenomas we achieved complete tumour removal in both leading to complete resolution of clinical features and normalization of endocrine levels.

DISCUSSION:
Pituitary adenomas generally present with features of hypersecretion (hyperfunction), hypofunction and mass effect. Features of hyperfunction of prolactinomas in female are hypersecretion (hyperfunction), hypofunction and mass effect. Features of mass effect: Headache, visual loss, hypothalamic dysfunction, hydrocephalus (third ventricle compression), cavernous sinus involvement causes cranial nerve involvement, mesial temporal lobe involvement causes complex partial seizures.

All our tumours were operated and managed by the same team of neurosurgeons, neuroanesthetists, endocrinologists and biochemists. After operation evaluation of the patients were done at 6 weeks, 6 months and 1 year by clinical examination, radiology (MRI sellar region) and endocrinological examination. In our series completeness of tumour removal resulted in normalization of clinical features and endocrine levels whereas incomplete tumour removal resulted in partial remission of symptoms and endocrine levels. Also the remission rate were more for microadenomas. Various other series like Fahlbusch et al 9 also reported similar results like remission rates were more for microadenomas than macroadenomas.

CONCLUSION:
For the functioning pituitary tumours remission of clinical features and endocrine levels are more with completeness of tumour removal. Also microadenomas showed a more remission than macroadenomas.

REFERENCES: