



## Histopathological Spectrum of Mass Lesions of Sellar- Suprasellar Region at Tertiary Care Centre

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### Abstract

**Introduction:** *The complex anatomy of the sellar-suprasellar region brings a wide variety of lesions into the clinicopathologic differential diagnosis. Both malignant and benign lesions may arise within the sellaturcica.*

**Objectives:** *To find incidence and histomorphological spectrum of the mass lesions in sellar and suprasellar region.*

**Material and Methods:** *The present study was retrospective study conducted in SMS Medical College, Jaipur between January 2017 to May 2019. During this period total 148 cases received.*

**Results:** *The commonest benign tumor of sellar and supra sellar region was pituitary adenomas followed by craniopharyngiomas.*

**Conclusion:** *Both benign and malignant lesions can present as sellar- suprasellar mass. Pituitary adenoma constituted the bulk of sellar and suprasellar region lesions.*

**Keywords:** *Sellar, suprasellar, benign, malignant.*

### Introduction

Sellar and parasellar region lesions spectrum includes a wide variety of conditions ranging from adenoma to empty sella syndrome, apoplexy, congenital or acquired condition.<sup>1,2,3,4</sup> Other than adenoma, genetic causes of pituitary disease are increasingly recognized.<sup>3</sup> Pituitary adenomas are not rare and account for 20% all intracranial tumors.<sup>4,5</sup> They can cause mass effect, in addition to hypersecretion / hypopituitarism.<sup>6</sup> Wide variety of lesions that affect the sellar region, pituitary adenomas are by far the most common. The complex anatomy of the sellar-suprasellar region

brings a wide variety of lesions into the clinicopathologic differential diagnosis.<sup>7,8,9</sup> The pituitary gland rarely hosts cysts, infarcts, inflammatory diseases and infectious diseases also. However, when these do occur, they closely mimic adenoma on neuroimaging studies. So, correct diagnosis falls to the surgical pathologists.<sup>10,11</sup>

### Material and Methods

The specimens are collected at our department during January 2017 to May 2019.

The data including age, sex, tumor site and histological diagnosis are taken. Patients more than 12 years were counted as adult. The study comprises of 148 consecutive cases of posterior cranial fossa in all age groups.

Neurosurgical intervention was carried out in all these cases. After surgery, specimens were sent for histopathological evaluation and microscopic diagnosis was made.

#### Exclusion Criteria

Non-operated children and adults were excluded from this study.

The requisition form of patients presenting with sellar-suprasellar lesions were received from department record from January 2017 to May 2019 and the data of patients along with histopathological reports were collected and studied.

#### Results

In our study 148 cases involved, 90 were male and 58 female patients so there were male to female ratio are 1.55. Histologically, in tumorous lesions, pituitary adenoma was commonest 100(74%) followed by craniopharyngioma 23(17%), Pilocytic Astrocytoma 5 (3.7%), collision tumor 2(1.5%) and one case each of meningioma, metastatic carcinoma, solitary fibrous tumor, round cell neoplasmand chordoma. In non-tumorous lesion, epidermoid cysts 7(53.8%) and pituitary infarct 3 (23%), arachnoid cyst 2(15.5%) and one case granulomatous hypophysitis,

**Table 1** showing lesions produce mass effect in sellar-suprasellar region in our study.

Lesion	No. of cases	Percentage
Pituitary adenoma	100	74
Craniopharyngioma	23	17
Pilocytic astrocytoma	5	3.7
Collision tumor	2	1.5
Meningioma	1	0.7
Metastatic carcinoma	1	0.7
Solitary fibrous tumor	1	0.7
Round cell neoplasm	1	0.7
Chordomas	1	0.7
<b>Total</b>	<b>135</b>	<b>100</b>

**Table 2** showing non-tumorous lesions in sellar-suprasellar region.

Epidermoid cyst	7	53.8
Pituitary infarct	3	23
Arachnoid cyst	2	15.5
Granulomatous hypophysitis	1	7.7
<b>Total</b>	<b>13</b>	<b>100</b>

Peak incidence of sellar-suprasellar masses are between 20– 50 years age group. However, peak incidence of craniopharyngioma was in first decade of life. In our study, most common presenting symptoms in patients were headache, nausea, vomiting, and decrease vision. Few cases are presented with endocrinal disturbances like hirsutism, acromegaly, breast discharge and primary infertility.

#### Discussion

Pituitary adenomas are almost 80% of all sellar-suprasellar masses, but there are a number of less known tumors, both malignant and benign, which may arise within the sellaturcica. These include relatively common tumors such as craniopharyngiomas and meningiomas, as well as extremely rare tumors such as collision tumor and chordomas. Pituitary adenomas are usually present in adults.

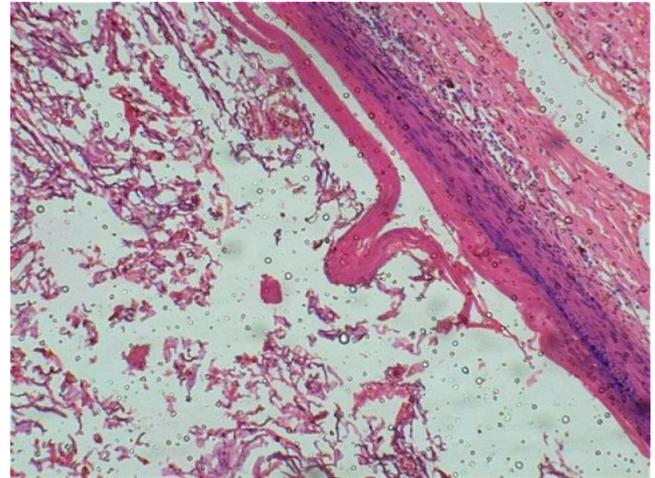
They are divided as microadenomas if size is less than 1 cm in diameter and macro adenoma if they exceed 1 cm in diameter.

In our present study, 90 males and 58 females were included, so male to female ratio of 1.55:1.

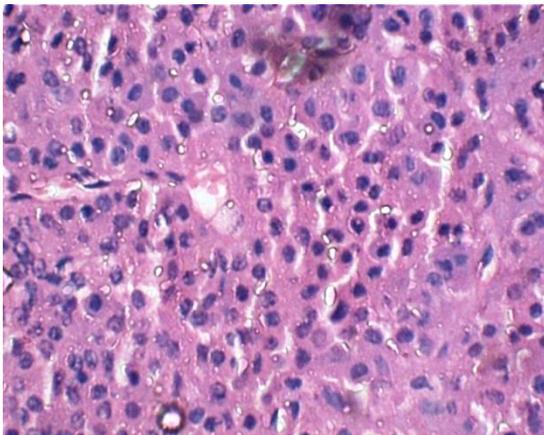
Out of the 148 cases, tumorous lesions (91.22%) more commonly presented as mass lesion in sellar- suprasellar region than non tumorous lesions (8.78%). In tumorous lesions, pituitary adenomas were most common 100(74%) 1,2,3 followed by craniopharyngioma 23(17%), Pilocytic Astrocytoma 5 (3.7%), collision tumor 2(1.5%) and one case each of meningioma, round cell neoplasm, solitary fibrous tumor, chordoma, and metastatic carcinoma. Similar results were found in studies of Sautner et al, Benjamin and Huang et al, Brownyn and Hamilton et al, Brian and Chin et al Kleinschmidt et al.<sup>12,13,14,15,</sup>

In a study done by Benjamin and Huang pituitary adenoma constituted more than 90% cases. Study done by Kleinschmidt et al showed adenoma as high as 85%. In our study pituitary adenoma cases are 74%.

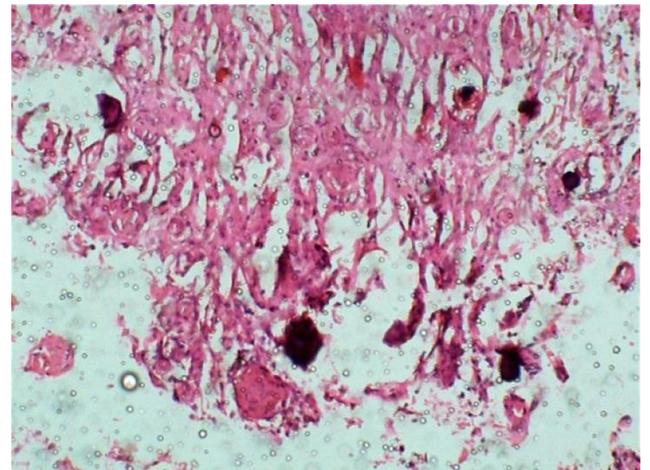
In non tumorous, epidermal cysts and pituitary infarct were commonest lesions presenting as mass lesion in sellar-suprasellar region followed by arachnoid cyst, granulomatous hypophysitis. These results were in concordance with similar other studies done by Nandha et al, Paz Maya et al, Attanasio et al.<sup>16,17,18,19,20,21</sup>



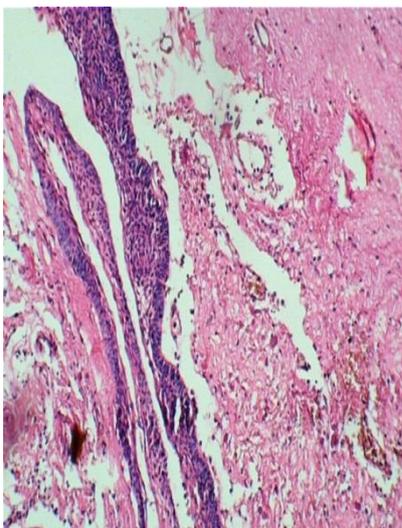
H&E section of epidermoid cyst.



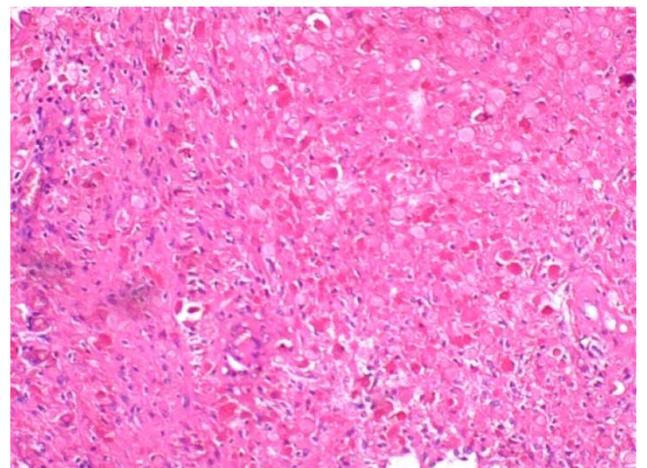
H&E section (40X) of Pituitary adenoma showing monomorphic tumor cells with amphophilic cytoplasm.



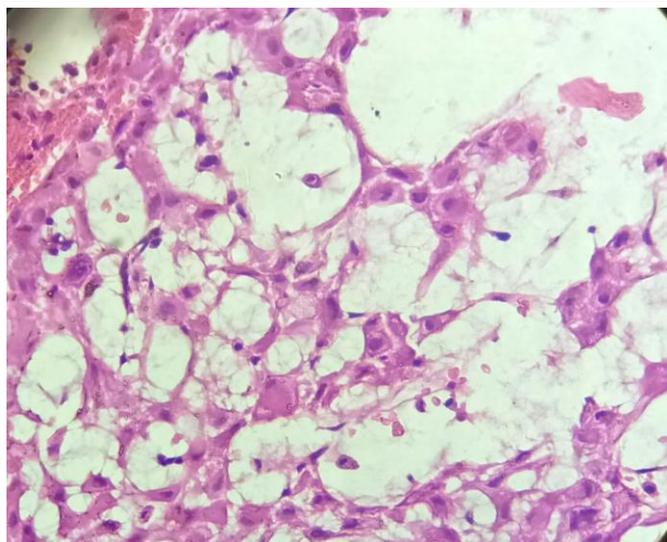
H&E section shows psammomatous meningioma showing psammoma body.



H&E section (10X) of Craniopharyngioma showing lamellar keratin lined by squamous epithelium with peripheral palisading and brain tissue.



H&E (10X) section shows pilocytic astrocytoma showing eosinophilic granular body.



H&E (10X) section of chordoma showing physaliferous cells.

### Conclusion

Pituitary adenomas constitute the bulk of pituitary disease in patients followed by craniopharyngioma.

### Acknowledgement

I would like to thank the faculty, my husband, my colleagues and technical staff of department of Pathology, SMS Medical College, Jaipur for helping and guiding me through this work.

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