Lacrimal Gland Tumours

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This paper presents the clinical and pathological findings in 11 patients seen with primary tumours arising from the lacrimal gland. 5(45.5%) had adenocarcinoma, 4(36.3%) Pleomorphic adenoma and 2 (18.4%) Acinic cell tumours. Benign tumours presented in a recognizable clinical manner with a painless mass in the region of lacrimal gland which slowly enlarged over a period of 1 year before consultation. Patients of adenocarcinoma had a short history with a painful mass in the lacrimal gland area. The method of treating the benign and malignant tumours is briefly discussed.
Key Words : Lacrimal gland tumours, pleomorphic adenoma, adenocarcinoma

The marked variation in the tumour patterns and their behaviours makes the evaluation and treatment of the lacrimal gland masses a challenge. In adults, infection, inflammation, benign and malignant epithelial or lymphoid tumours and metastatic disease can all present in the lacrimal fossa.

Numerous symptoms along with clinical and radiological signs are helpful to delineate the nature of the different lacrimal processes. Any enlarging lacrimal mass can produce proptosis and eye is displaced both medially and inferiorly. As the lacrimal gland enlarges, it characteristically produces the S - shaped lid. Age is not a useful parameter to differentiate benign from the malignant processes. Malignancies of lacrimal gland can occur at any age, although they are very rare in children under the age of thirteen. Laterally, chronicity, dry eye symptoms and pain are clinical findings that are sometimes helpful in differentiating the lesion processes. Bilateral involvement excludes an epithelial lacrimal gland neoplasm. Involvement of both lacrimal glands is most consistent with infection, inflammation and lymphomas[1].

Materials and Methods

The study was conducted at Institute of Ophthalmology, K.E.M.C. Mayo Hospital Lahore, Pakistan from January 1987 to December 1997. A total of 239 cases of Orbital lesions were analyzed. They were classified as neoplastic, Inflammatory, cystic, traumatic and congenital. The neoplastic lesions of the orbit were further categorized into four groups.

Group I

This consisted of those tumours which originated from the soft tissues of the orbit. These were designated as Primary orbital tumours.

Group II

Consisted of those lesions arising from neighbouring structures (PNS, Cranial cavity, Nasopharynx and eyelids.) and secondary invaded the orbit. They were named secondary orbital tumours.

Group III

Comprised of systemic tumours which invaded the orbit.

Group IV

Were reserved for the metastatic tumours.

Every patient went through a standard of detailed history, general physical examination, examination of eyes, orbit and sinuses. Special diagnostic procedures used were Exophthalmometry, Radiological studies, Angiography, Ultrasonography (B-Scan), CT-Scan and MRI. Excision biopsy was done where indicated.

Results

Analysis of 239 cases revealed that Orbital tumours were the most common lesions 168 (70.3%) followed by inflammatory 45 (18.8%), Cystic 13 (5.4%), Traumatic 6 (2.5%), Congenital 6 (2.5%) and A-V fistula 1 (0.4%).

Table 1: *Orbital Lesion 239 Cases*

No.	Lesion	Cases	% age
1.	Orbital tumours	168	70.3
2.	Inflammatory	45	18.8
3.	Cystic	13	5.4
4.	Traumatic	6	2.5
5.	Congenital	6	2.5
6.	A-V fistula	1	0.4

Amongst the orbital tumours 113 (67.3%) were primary, 34 (20.2%) were secondary 20 (11.9%) were hemopoietic RES and 1 (0.6%) were metastatic. Table 2.

Table 2: *Orbital tumours 168 Cases*

S. No.		Number	% age
1.	Primary	113	67.3
2.	Secondary	34	20.2
3.	Hemopoietic	20	11.9
4.	Metastatic	1	0.6

Amongst the primary Orbital tumours 58 (51.3%) were retinoblastoma, 16 (14.2%) were Optic nerve tumours 13

(11.5%) were vascular, 11 (9.7%) were lacrimal gland tumours, 5 (4.4%) were muscular, 5 (4.4%) nevus / melanomas, 4 (3.5%) fibrous and 1 (0.9%) were pseudotumours.

Table 3: *Primary Orbital Tumours 113 Cases*

S. No.	n=	% age of Primary tumours	% age of Orbital tumours
1.	58	51.3	34.5
2.	16	14.2	9.5
3.	13	11.5	7.7
4.	11	9.7	6.6
5.	4	5.5	2.5
6.	5	4.4	3
7.	5	4.4	3
8.	1	0.9	0.6

Amongst the lacrimal gland tumours 5 (45.5%) adenocarcinomas, 4 (36.3%) were pleomorphic adenomas and 2 (18.4%) were acinic cell tumours.

Table 4: *Lacrimal gland tumours 11 Cases*

	n=	% age of orbital tumours	% age of lacrimal tumours
Adenocarcinoma	5	2.9	45.5
Pleomorphicadenoma	4	2.4	36.3
Acinic cell tumours	2	1.2	18.4

Patients with benign mixed tumours (plemorphic adenomas and acinic cell tumours) presented with a long history of painless gradually increasing lacrimal mass with inferior and medial displacement of the eyeball. CT-Scan and plain radiography revealed smooth moulding with benign mixed tumours.

Patients of adenocarcinoma of lacrimal gland presented with a short history of painful swelling in the upper and outer quadrant with inferior and medial displacement of the eyeball. Ultrasonography and CT-Scan invariably revealed a mass occupying the whole of the roof and extending to the retero-ocular space.

Discussion

Benign tumours of lacrimal gland without associated inflammation may remain asymptotic for years. With the passage of time the eye is displaced down and medially with a non tender mass in the region of the gland. The X-ray findings may or may not be present. A firm. non tender mass is usually present. In long standing cases there are pressure changes in the lacrimal fossa[2,3].

Benign epithelial mixed tumours (pleomorphic adenoma) has a 20% malignant transformation rate and recurrence occurs in atleast 25% of incompletely resected tumours[4].

The treatment for localized epithelial neoplasm is surgical. Benign mixed are usually encapsulated, if the entire neoplasm is not removed there is a 20-28% recurrence rate and about 20% of reported pleomorphic adenomas have undergone malignant transformation. If a benign mixed tumour is inadvertently mixed contiguous spread can occur in the orbit, bone and adjacent areas. Completely resected pleomorphic adenomas have less than 3% recurrence rate. Careful dissection and isolation of both the orbital periosteum and periorbit are required when resecting any tumour localized in the lacrimal fossa[3].

Malignant tumours of the lacrimal gland has a short history and have pain. On clinical grounds it can not be distinguished from the inflammatory processes. X-ray shows extensive destruction of the lacrimal fossa. The prognosis in the case of a malignant tumour is very poor even if radiation or chemotherapy is properly given[2]. Malignant epithelial tumours have ten year mortality rate of over 80%. Incomplete excision of potentially resectable epithelial malignancy has a fatal prognosis[4]. Recurrence of a tumour requires exentration[5].

Conclusion

Epithelial malignancies of lacrimal gland most commonly cause pain and progress more rapidly than benign epithelial neoplasms. Benign mixed tumours (pleomorphic adenomas) usually have an insidious onset and produce chronic symptoms but these findings are neither specific nor diagnostic.

The presence and pattern of bone involvement documented on plain radiography, CT-Scan or MRI are often helpful in determining the nature of a lacrimal fossa lesion. Most benign processes do not involve the bones of the lacrimal gland fossa, if they do there is even enlargement without sclerosis. Generalized expansion of the orbit can occur in young patients with a chronic lesion. Frank bone invasion is almost diagnostic of either a primary or a metastatic lesions.

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