Original Article

Evaluation of Eyelid Lesions at a Tertiary Care Hospital, Jinnah Postgraduate Medical Centre (JPMC), Karachi

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Purpose: To review the pathological lesions of eyelid and to find out their relative frequency.

Materials and Methods: The study was conducted during seven years between 1995 to 2001 at Basic Medical Sciences Institute (BMSI), Jinnah Postgraduate Medical Centre (JPMC), Karachi. In this study evaluation of 258 cases of eyelid lesions were received during our study period. By examining 5μm thick slides prepared from paraffin embedded blocks and staining with different stains, histopathological diagnoses confirmed by performing microscopy was under x10, x40, and x100 magnification.

Results: A definite histopathological diagnosis was made in 238 cases. Out of which 105 (44.11%) cases were benign, 87 (36.99%) cases malignant, 39 (16.39%) cases non-neoplastic tumour-like lesions, and 7 (2.94%) cases were pre-malignant lesions during our seven years study period.

Conclusion: All the clinically confusing and worrisome eyelid lesions should be immediately biopsied to get an exact diagnosis at cellular level. Confirmation of surgical margin for tumour clarity cannot be over-emphasized in oculoplastic reconstructions.

Eyelids are beautiful curtains provided by nature to protect the eyeballs. If we compare with any other organ of our body they have maximum variety of tissues per unit weight[1]. They are therefore affected by variety of benign lesions[2]. They may be epithelial, adnexal, vascular, neural, histiocytic, melanocytic or inflammatory in origin. Moreover, eyelids are also affected by different systemic diseases[3-4]. Thyroid ophthalmopathy, sarcoidosis, and lymphoproliferative disorders are quotable examples.

Many lesions are identified by clinical appearance and their behaviour by clinicians. However, they may pose diagnostic challenge when different lesions present in similar fashion, e.g. different pigmented lesions. Secondly, when one type of lesion presents in different forms, e.g. eczema or basal cell carcinoma. Thirdly, when the nature of lesion is uncertain, i.e. benign or malignant. Lastly, many apparently inflammatory lesions may be due to hidden underlying malignancy[5-7]. Moreover, malignancies are also common in periocular area[8].

MATERIALS AND METHODS

A total of 258 specimens of eyelid lesion were received during seven years period from 1995 to 2001. Most of these specimens were sent by Eye and Plastic Surgery departments of Jinnah Postgraduate Medical Centre, Karachi. The specimens after gross examination were already fixed in paraffin section previously. The 5 μm thick slice prepared from each paraffin block was subjected to haematoxylin and eosin stain. In some cases other stains were also used to reach the diagnosis, as follows; PAS stain in seven, Trichrome in two, Reticulin in two and Fontana in one case. The

slides were reviewed under scanner (x10), low power (x40), and high power (x100) magnifications of the compound microscope. For calculation of P value, Goodman I & II and Sobel test applied.

RESULTS

In the current study, we received 258 specimens mainly from Eye department of JPMC, Karachi and to a lesser extent from Plastic Surgery department during seven years period, that is, from 1995 to 2001. Three specimens were found to be autolyzed and 17 cases did not show any definitive pathological diagnosis, rest of the 238 (92.25%) cases were diagnosed on the basis of histopathological details of the specimens sent.

Out of 238 cases, we found 105 (43.93%) cases to be benign in nature while 87 (36.55%) were malignant. In 39 (16.39%) cases the histopathological diagnosis was non-neoplastic tumour like lesions. Seven (2.94%) cases were pre-malignant in nature, as shown in (Table 1).

Sex distribution of different type of eyelid lesions shows male preponderance in all the tumour and pre-malignant lesions. There is definite female preponderance seen in non-neoplastic tumour like lesions, all of which are inflammatory in nature, as shown in (Table 1).

Among the benign lesions, most common were epidermal inclusion cyst, i.e. 28 (26.67%) out of 105 cases. The second common benign lesion was dermoid cyst which was 21.90%, i.e. 23 out of 105 cases. All the benign lesions in order of their frequency are shown in (Fig. I).

Basal cell carcinoma was found to be the most common malignancy in our study, i.e. 49 (56.32%) cases out of 87. The next common malignancy is squamous cell carcinoma found in 18 (20.69%) out of 87 cases. After that sebaceous cell carcinoma was found in 13 (14.94%) cases out of 87 (Fig. II).

The less common malignant cases are shown in Fig. II in the following order:

- Adenoid cystic carcinoma 03%
- Lymphoma 01%
- Malignant melanoma 01%
- Merkel cell tumour 01%
- Malignant fibrohistiocytoma 01%
- Poorly differentiated carcinoma 01%

Pre-malignant lesions were 7 (2.94%); they were Bowen's disease, actinic keratosis, and dysplasia.

Table 1: Frequency and sex distribution of eyelid lesions received at department of Pathology, BMSI, JPMC between 1995 to 2001 (n = 238)

	No. of cases n (%)
Benign Lesions	105 (43.93)
• Male	56 (53.33)
• Female	49 (46.67)
Pre-malignant lesions	07 (2.94)
• Male	5 (71.43)
• Female	2 (28.57)
Tumour like non-neoplastic lesions	39 (16.39)
• Male	17 (43.59)
• Female	22 (56.41)
Malignant Tumours	87 (36.55)
• Male	52 (59.77)
• Female	35 (40.23)
P < 0.04 (Goodman I & II and Sobel test applied)	

Various eyelid malignancies are shown in figure II.

Various tumour like non-neoplastic lesions were 16.39%, i.e. 39 out of 238 cases. Chalazion was the most common among them, the remaining lesions are:

- Granuloma Pyogenicum 11%
- Viral lesions 10%
  - Verruca vulgaris 02%
  - Molluscum Contagiosum 08%
- Chalazion 13%
- Non-specific inflammation 05%

DISCUSSION

Main sources of our specimens were departments of Eye and Plastic Surgery, JPMC, Karachi. Weekly patient's attendance in the OPDs of these two departments is not less than 1,500. If only two percent patients have eyelid lesions the number of eyelid patients reach 30 per week and 1,560 cases per year. During seven years this figure exceeds to10,000 patients having eyelid lesions.

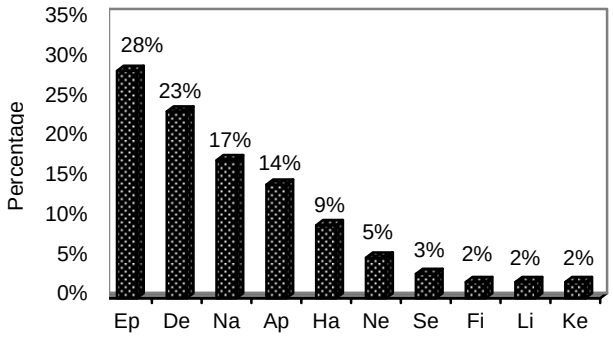

Fig. I: Morphological study of Eyelid Lesions received at Department of Pathology, BMSI, JPMC between 1995 to 2001

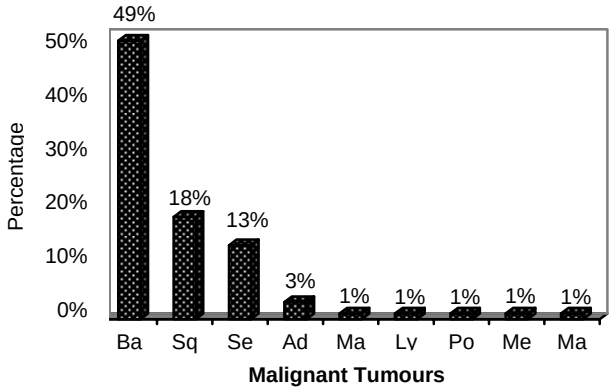

Fig. II: Morphological study of Eyelid Lesions received at Department of Pathology, BMSI, JPMC between 1995 to 2001

We received only 258 eyelid specimens for histopathological examination during our seven years study period between 1995 and 2001. Only about 2.5% patients were subjected to histopathological examination. The reason is that most of these lesions are diagnosed by their appearance and clinical behaviour by clinicians. Only worrisome lesions and the surgically excised tissue to check margin clarity are sent to histopathological examination. The same is explained by Apple and Stewart[9] in their very large study of 1,403 eyelid specimens.

In our study malignant eyelid lesions were 36.55%, which is similar to an extensive review over a period of 38 years, published by Aurora and Blodi[10], who found one-third of their cases to be malignant.

In all the malignant lesions of eyelid the most common was found to be basal cell carcinoma, i.e. 49 (56.32%) out of 87. It was common in older age people (51-60 years), which is co-incident with another study in our population[11]. There is higher incidence of this tumour in males, i.e. 27 (55.10%) out of total 49 cases. This finding does not match with other western studies in which female preponderance is much greater[12].

Our study revealed solid basal cell carcinoma or undifferentiated basal cell carcinoma being predominant morphological pattern in our population, i.e. 36 (73.46%) cases out of 49 cases. This correlates well with western studies[13]. Nizamuddin[14] recorded in his study of malignant ophthalmological tumours in Northern areas of Pakistan and cited his results as out of 11 cases 7 (73.6%) showed solid basal cell carcinoma, 3 (27.3%) adenoid cystic, and 1 (9.1%) keratotic.

Incidence of squamous cell carcinoma in our study is 18 (20.69%) out of 87 of all the eyelid malignancies. Four cases had xeroderma pigmentosum, which is an important intrinsic factor in development of this tumour specially in blocks[15].

Sebaceous gland carcinoma seen in 13 (14.94%) out of 87 cases and found to be third common malignancy of eyelids. Patients are mostly old with female preponderance although younger subjects are also affected. This was almost same as described in the literature[16,17]. The only difference is in our study in which female to male ratio was 5:8. The reason might be due to the fact that females are not brought for treatment to this tertiary eye care unit by their male counterpart, as our society is male dominant. This type of malignancy is very common in Chinese population where every third eyelid malignancy is sebaceous gland carcinoma. American population has 15.5% while in our study it is between these two, i.e. 14.90%[18].

Other less common malignant tumours found were adenoid cystic carcinoma (3%), malignant fibrohistiocytoma, lymphoma, poorly differentiated carcinoma, Merkel cell carcinoma, and malignant melanoma all of them were one percent (one patient found to be if malignant melanoma). The white races are twelve times more prone to develop this malignancy due to lack of protective melanin[19]. There was not a single case of Kaposi's sarcoma. Although it is quite common in Western society as 24-30% patients of AIDS develop this tumour during the course of their disease[20].

Most common benign tumour was epidermal inclusion cyst, i.e. 28 (26.66%) out of 105 cases, second

common was dermoid cyst which was 23 (21.9%). Most of these cases were in the age of first decade of their life, 16 (69.57%) cases out of 23. This is same as described in literature[21]. Appendageal tumour was found to be 14 (13.33%). Most common among them was cyst of Moll (Sudoriferous cyst) while others were pleomorphic adenoma and pilomatrixoma.

There were 17 (16.17%) cases of naevi, 5 (4.76%) cases of neurofibroma, and 3 (2.86%) cases of seborrhoeic keratosis. Two (0.19%) cases were found each of fibroepithelial polyp and lipoma. Keratoacanthoma is a benign tumour it is fast growing and alarms clinicians due to its apparent malignant behaviour[22]. We received 2 (0.19%) cases during seven year period from 1995 to 2001.

CONCLUSION

All the clinically confusing and worrisome eyelid lesions should be immediately biopsied to get an exact diagnosis at cellular level. Confirmation of surgical margin for tumour clarity cannot be over-emphasized in oculoplastic reconstructions.

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