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Histopathological Spectrum of Lesions in Conjunctiva

KEYWORDS: Conjunctiva, Pterygium, Nevus, Primary acquired melanosis.

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ABSTRACT *BACKROUND: The conjunctiva is readily visible, so related lesions can be recognized at a relatively early stage. Hence it is very important to study the spectrum of conjunctival lesions.*

AIMS: The aims of this study were to assess the histomorphological features of various conjunctival lesions, to classify them, to see the age and sex distributions and to find out the frequency of various conjunctival lesions.

MATERIALS AND METHODS: This is a hospital based retrospective and prospective study done in the Department of Pathology, Kempegowda Institute of Medical Sciences and Research Center, Bangalore for 3 years from June 2010-July 2013. Total of 510 cases were studied.

RESULTS: We studied 510 conjunctival biopsies of which 349 (68.4%) were degenerative lesions, 65 (13%) were epithelial lesions, 25 (5%) were melanocytic lesions, 28 (5.4%) were vascular lesions, 8 (1.5%) were lymphoid lesions, 16 (3.2%) were tumor like congenital lesions and 19 (3.45%) were miscellaneous lesions.

CONCLUSION: There is varied spectrum of conjunctival lesions which can be recognized early by the patients and correct histopathological diagnosis can guide the Ophthalmologist to initiate treatment which can decrease the morbidity and mortality of the patients.

INTRODUCTION

The conjunctiva is a specialized mucous membrane that cover the surface of the globe and lids. It facilitate movements of the globe and lids while protecting the orbital contents from the external environment. The conjunctiva also contributes to the stability of the tear film by mucous secretion of the goblet cells.[1] Excised lesion of conjunctiva include a wide spectrum of condition ranging from benign lesions such as pterygium, pyogenic granuloma, solid dermoid, nevus, papilloma, hemangioma, precancerous lesions like ocular surface squamous neoplasia(OSSN), infiltrating malignancies such as malignant melanoma, squamous cell carcinoma, lymphoma etc.[2] The conjunctiva is readily visible, so related lesions that occur in the conjunctiva are generally recognized at a relatively early stage.[3] The study is done to report the spectrum and frequency of different lesions of conjunctiva.

MATERIALS AND METHODS:

This is a study conducted in Kempegowda Institute of Medical Sciences, Bangalore during a period of 3 years from June 2010 to July 2013. The study was approved and ethically cleared by Institutional Human Ethics Committee (IHEC). During this period, we received 510 conjunctival biopsies from our hospital and Narayana Nethralaya, Bangalore. The excised conjunctival specimens were received in 10% formalin. These were grossed and macroscopic features were noted. After that, tissues were processed routinely, paraffin sections cut at 4 micrometres thickness, stained with haematoxylin and eosin and were examined microscopically. Special stain (Congo red stain) and Immunohistochemistry (IHC) was done whenever required. Immunohistochemistry was performed on 4 micrometer sections mounted on Starfrost slides (Germany) using the Novolink polymer detection system (Leica Biosystems Newcastle Ltd, UK) exploiting 3,3'-diaminobenzidine (DAB) as chromogen. Inadequate biopsies, specimens not sent in formalin and autolysed samples were excluded.

RESULTS:

This study during the period of July 2010 to June 2013 comprises of 510 conjunctival cases. Out of 510 conjunctival biopsies 349 (68.45%) were degenerative lesions, 65 (13%) were epithelial lesions, 25 (5%) were melanocytic lesions, 28 (5.4%) were vascular lesions, 8 (1.5%) were lymphoid lesions, 16 (3.2%) were tumor like congenital lesions and 19 (3.45%) were miscellaneous lesions. Out of the 349 degenerative cases, 298 cases were purely degenerative lesions, 43 cases were combined degenerative and epithelial lesions, 5 cases were combined degenerative and melanocytic lesions and 2 cases were combined degenerative and lymphoid lesions. 100% of the pterygiums had elastotic degeneration, vascularised stroma and inflammation, 37% had stromal plaques and 7% had goblet cell hyperplasia. Among the epithelial lesions, most common was OSSN (15.05%), followed by inclusion cyst (2.7%), squamous cell carcinoma (2.15%) and the least common was squamous papilloma (0.78%).

Most common melanocytic lesion was nevi (3.52%), followed by PAM without/with atypia (1%) and malignant melanoma (0.39%). Pyogenic granuloma comprises the 28 cases of vascular lesions. Among the lymphoid lesions, there was equal distribution of benign lymphoid hyperplasia (0.78%) and lymphoma (0.78%). All cases of lymphomas were Extranodal Marginal Zone B Cell lymphoma which was confirmed by IHC. Among the caruncular lesions, sebaceous cyst was the most common lesion (2.57%), followed by 0.6% each of sebaceous hyperplasia and nevus, 0.2% each of squamous papilloma and Embryonal Rhab-

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domyosarcoma. Maximum number of conjunctival lesions were present between 51-60yrs (22.55%) followed by 21.18% between 31-40yrs. Least number of cases (0.4%) were present between 81-90yrs. Males (57%) were more commonly affected than females (43%). Bulbar conjunctiva (87%) was more commonly affected followed by limbus (7.87%), caruncle (3.34%), palpebral (1.6%) and fornices (0.19%) respectively. Right eye (53.73%) was more commonly affected than left eye (46.27%).

DISCUSSION:

The distribution pattern of conjunctival lesions in our study was slightly different from other studies. In our study degenerative lesions were most common followed by epithelial lesions, vascular lesions, melanocytic lesions, miscellaneous lesions, tumor like congenital lesions and lymphoid lesions respectively. Study done by Elshazly LHM, showed vascular lesions was the most common lesions and no cases of degenerative lesions[2]. Study done by Mondel SK et al.showed epithelial lesions were most common and tumor like congenital lesions were the least common lesion[3]. Study done by Shields CL et al. showed melanocytic lesions were the most common lesions and the least common being tumor like congenital lesions[4].. In our study age distribution of the cases were in the range of 6 months to 86 years which correlated with the studies done by Elshazly LHM (1.5 years-77 years) and Shields CL et al (1 month to 88 years)[2,4]. In our study males were more commonly affected than females which correlated with the studies done by Elshazly LHM, Mondel SK et al and Shields CL et al.[2,3,4] In our study bulbar conjunctiva was the most common site which correlated with studies done by Elshazly LHM ,Mondel SK et al. and Shields et al.[2,3,4]Pterygium was the most common lesion in our study either as pure form or in combination with other lesions. Pterygia are described as a proliferative disorder resembling an aberrant wound healing response.[5] UV light and human papilloma virus were suspected aetiology for these lesions[6,7]. Most of the patients in our study population are farmers. So most common etiology could be UV light in our study. Elastotic degeneration, vascularised stroma and inflammation were seen in 100% of our cases in our study which correlated with the study done by Sankar S et al (100%)[8]. In our study most common epithelial lesion was OSSN (15.05%) whereas in the study done by Amoli FA et al. it was squamous cell carcinoma[9]. In our study conjunctival nevus was the most common melanocytic lesion with 18 cases which correlated to the studies done by Elshazly LHM., Mondel SK et al. ,Shieds CL et al and Amoli FA et al[2,3,4,9]. In our study sebaceous cyst was the most common lesion (2.57%) in the caruncle, which contradicted with the studies done by Solari HP et al., Luthra et al. and Ostergaard J et al. where they demonstrated nevi as the most common lesion[10,11,12]. In our study a 56 year male patient with salmon pink waxy growth over the bulbar conjunctiva was diagnosed as conjunctival amyloid by histopathological examination. Study done by Ostergaard J et al. recorded one case of amyloid in the caruncle who was a 73 year old female patient[12].

CONCLUSION:

A large spectrum of lesions can occur in the conjunctiva. Premalignant and malignant neoplasms of the conjunctiva can cause visual impairment. Since the lesions are recognized by the patient in a early stage it is important to diagnose the lesion correctly so that the treatment can be initiated early. The core of a good approach for conjunctival tumors hinge on the good histopathologic study and diagnosis. So clinicopathological correlation is crucial, requiring good communication between the ophthalmologists and the pathologists.

Table-1: Distribution of conjunctival lesions

Serial No.	Type of Lesions	Number	Percentage (%)
1.	Degenerative	298	58.4
2.	Epithelial	65	13
3.	Melanocytic	25	5
4.	Lymphoid	8	1.5
5.	Vascular	28	5.5
6.	Tumor like congenital lesions	16	3.2
7.	Miscellaneous	19	3.72
8.	Combined degenerative and epithelial lesions	43	8.57
9.	Combined degenerative and melanocytic lesions	6	1.17
10.	Combined degenerative and lymphoid lesions	2	0.4
	Total	**510**	**100**

Graph-1: Site distribution of conjunctival lesions

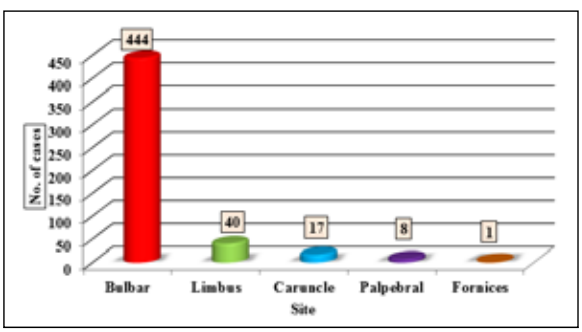
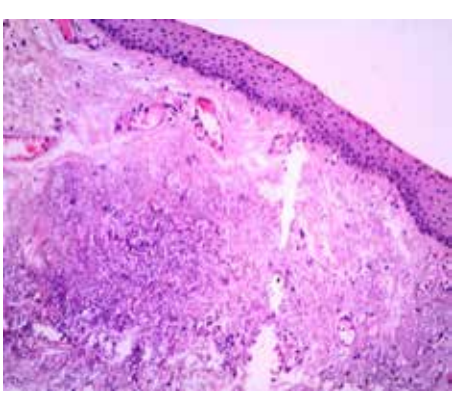


Figure-1: Pterygium: Wing like growth over the bulbar conjunctiva with feeding vessels

Figure-2: Pterygium – Microscopy: Histology showing elastotic degeneration in the stroma with increased vascularity. (H and E, 100X).



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References

1. Weng Sehu K, Lee WR. Conjunctiva. Ophthalmic Pathology An illustrated guide for Clinicians. Blackwell Publishing Ltd, ;2005: 39-60 .
2. Elshazly LHM. A Clinicopathologic study of Excised Conjunctival lesions. Middle East Afr. J Ophthalmol 2011; 18(1): 48-54.
3. Mondel SK, Nag DR, Bandyopadhyay R, et al. Conjuntival biopsies and Ophthalmic lesions: A histopathologic study in Eastern India. J Res Med Sci 2012; 17(12). 1178-79.
4. Shields CL, Shields JA. Tumors of the conjunctiva and cornea. Surv Ophthalmol 2004; 49(1): 3-24.
5. Chui J, Coroneo MT, Tat LT et al. Ophthalmic pterygium: A stem cell disorder with premalignant features. The American Journal of Pathology 2011; 178(2): 817-26.
6. Taylor HR. Ultraviolet radiation and the eye: an epidemiologic study. Trans Am Ophthalmol Soc 1989; 87: 802-53.
7. Lee GA, Williams G, Hirst LW, et al. Risk factors in the development of ocular surface epithelial dysplasia. Ophthalmology 1994; 101: 360-64.
8. Sankar S, Roshny J, Smitha KB. Pterygium - Is the `p' silent or premalignant? A Clinicopathological study of 60 cases of pterygium. Kerala Journal Of Ophthalmology 2006;18: 201 -5.
9. Amoli FA, Heidari AB. Survey of 447 patients with Conjunctival Neoplastic Lesions in Fabri Eye Hospital, Tehran, Iran. Ophthalmic Epidemiology 2006; 13: 275-79.
10. Solari HP, Ventura MP, Orellana ME, et al. Histopathological Study of Lesions of the
11. Caruncle: A 15 Year single Center Review. Diagnostic Pathology 2009; 4: 29.
12. Luthra CL, Doxanas MT, Green WR. Lesions of the caruncle. A clinicopathologic study. Surv Ophthalmol 1978; 23: 183- 95.
13. Ostergaard J, Prause JU, Heegaard S. Caruncular lesions in Denmark 1978-2002: a histopathological study with clinical referral diagnosis. Acta Ophthalmol Scand 2006; 84: 130-36.