Journal Homepage: -www.journalijar.com

INTERNATIONAL JOURNAL OF ADVANCED RESEARCH (IJAR)

Article DOI:10.21474/IJAR01/19653
DOI URL: http://dx.doi.org/10.21474/IJAR01/19653

RESEARCH ARTICLE

HISTOPATHOLOGICAL STUDY OF CONJUNCTIVAL LESIONS IN TERTIARY CARE HOSPITAL

Dr. Chirag Chavda, Dr. Nirali Marakana and Dr. Hansa Goswami

Manuscript Info

Manuscript History
Received: 15 August 2024
Final Accepted: 18 September 2024
Published: October 2024

Abstract

Introduction:-

Conjunctiva is a specialized mucous membrane that covers the surface of the globe and lids. It facilitates 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 lesions of conjunctiva include a wide spectrum of conditions ranging from benign lesions such as pterygium, pyogenic granuloma, dermoid, nevus, papilloma, haemangioma, precancerous lesions like ocular surface squamous neoplasia (OSSN), infiltrating aggressive malignancies such as malignant melanoma, squamous cell carcinoma, lymphoma etc.[2] These aggressive lesions often threat the visual function and life of the patient. In addition to histopathological evaluation of conjunctival tumours, a meticulous slit lamp examination of cornea is often needed to assess the degree of invasion.

Most studies done on an ocular lesion show that conjunctival lesions contribute to majority proportion, after eyelid lesions. Lesions of conjunctiva are not uncommon in histopathology laboratories. As a group, conjunctival lesions are commonly seen in the clinical practice of an ophthalmologist. The conjunctiva is readily visible, so related lesions that occur in the conjunctiva are generally recognized at a relatively early stage.[3]

Aims and Objectives:-

1. To study the histomorphology features of various conjunctival lesions.
2. To classify them into degenerative, benign, premalignant and malignant epithelial, melanocytic, lymphoid, vascular, tumor like congenital lesions and miscellaneous lesions.
3. To study the age and sex distribution of various conjunctival lesions.
4. To study the frequency of various conjunctival lesions in our study population and compare it with the previous studies.

Materials and Methods:-

The present study is a prospective observational study carried out in the histopathology department of M & J hospital Ahmedabad. The study is carried out during the period between august 2020 to august 2022. The study is based on the histomorphological evaluation of the received conjunctival specimens. The excised conjunctival specimens were received in 10% formalin. These were grossed and macroscopic features were noted. After that, the clinicopathological and histomorphological findings of all the conjunctival specimens were noted. Due importance

Corresponding Author:-Dr. Chirag Chavda

was paid to clinical history with respect to patient's age and sex, presenting sign and symptoms. A total of 156 conjunctival specimens including small mucosal biopsies were analysed in the study. The clinical records of the cases are taken from the database of the department.

Inclusion Criteria:-
All the conjunctival specimens sent for histopathological examination in the department of histopathology in M & J Hospital, Ahmedabad during the study period were included with a total of 156 cases.

Exclusion Criteria:-
Specimens not sent in formalin and autolyzed samples were excluded.

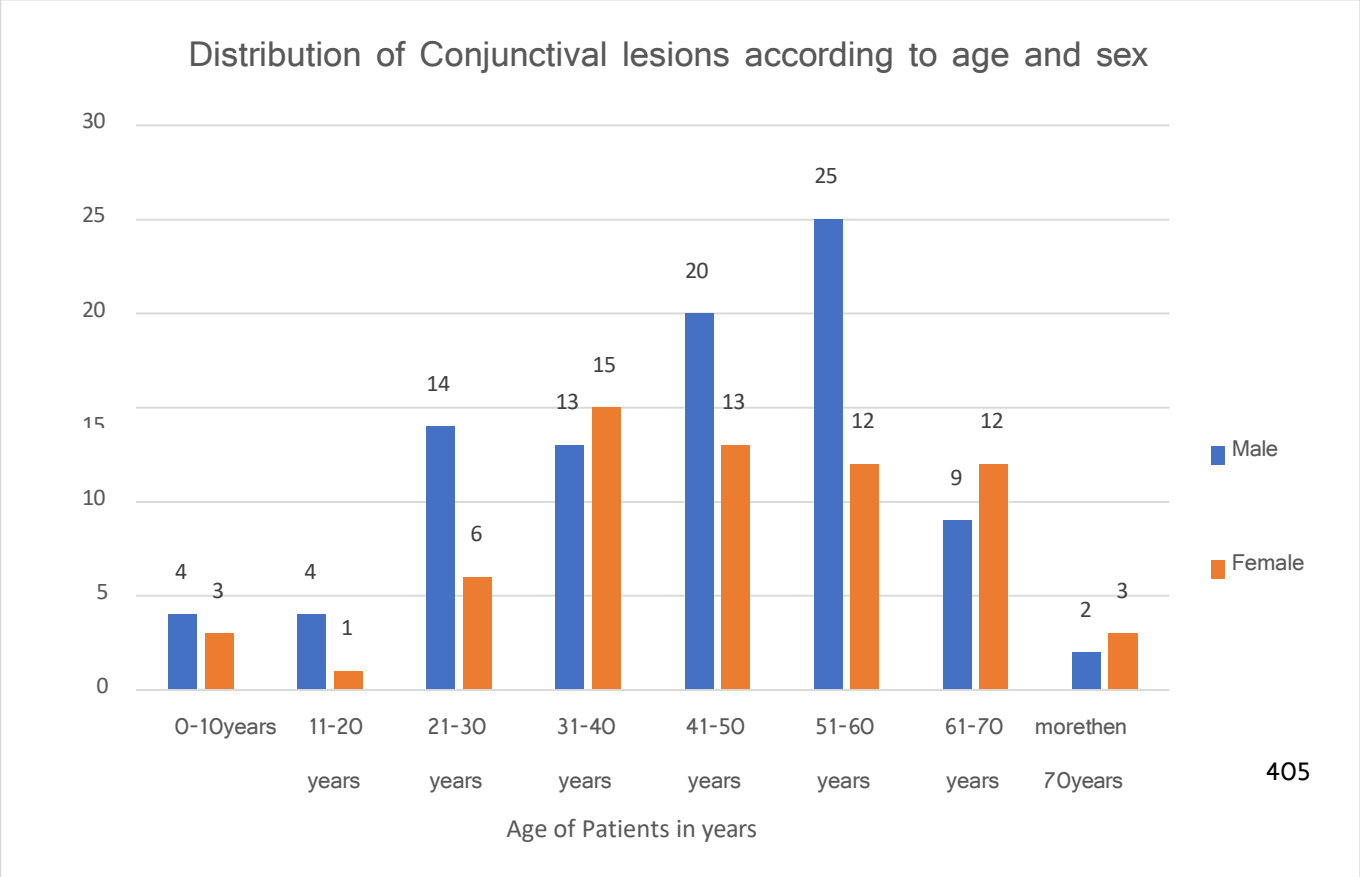
Observation and Result:-

Table-I:-Distribution of Conjunctival Lesions

Sr.No.	Lesions	Number of cases (%)
1	Degenerative	85(54.5%)
2	Epithelial	32(20.5%)
3	Inflammation	18(11.5%)
4	Tumor like congenital lesions	6(3.8%)
5	Melanocytic lesion	10(6.4%)
6	Lymphoid	2(1.3%)
7	Vascular lesion	1(0.6%)
8	Miscellaneous	2(1.3%)
	Total	156(100%)

The present study was done on 156 conjunctival specimens received during the period of Aug 2020 to Aug 2022. Out of the 156 conjunctival biopsies, 85(54.5%) cases are of degenerative lesions, 32(20.5%) cases are of epithelial lesions, 18(11.5%) cases are of inflammatory lesions, 6(3.8%) cases are of tumor like congenital lesions, 10(6.4%) cases are of melanocytic lesions, 2(1.3%) cases are of lymphoid lesions, 1(0.6%) case is of vascular lesion and 2(1.3%) cases are miscellaneous lesions.

Chart-I:- Distribution of Conjunctival lesions according to age and sex.



Maximum number of conjunctival lesions are present between 51-60 years which are 37(23.7%) followed by 33(21.1%) between 41-50years. Least number of lesions 5(3.2%) are present between 11-20 years of age.

Table-II:- Distribution of conjunctival lesions according to sex.

Sr No.	Sex	No. of cases (%)
1	Male	91 (58%)
2	Female	65(42%)
3	Total	156(100%)

In the present study of 156 cases, 91 (58%) are males and 65 (42%) are females with male: female ratio of 1.38:1.

Table-III:- Distribution of Degenerative Lesions according to Age and Sex.

Age(years)	Male	Female	Number of cases (%)
0-10	2	1	3(3.5%)
11-20	-	-	-
21-30	4	2	6(7%)
31-40	7	8	15(17.6%)
41-50	14	13	27(31.8%)
51-60	11	6	17(20%)
61-70	6	8	14(16.5%)
Above70	-	3	3(3.5%)
Total	44(52%)	41(48%)	85(100%)

In the present study of 156 cases, degenerative lesions which are composed by pterygium are the most common lesions, comprising 85 cases (54.5%). In this study the most common age group for degenerative conjunctival lesions is 41-50 years 27 cases (31.8%). The Second most common age group is 51-60 years 17 cases (20%). There are 44(52%) males and 41(48%) females.

Table-IV:- Distribution of Pterygium and Pterygium with OSSN.

Serialno.	Lesions	Number of cases (%)
1	Pterygium	79(50.5%)
2	Pterygium with OSSN	6 (3.9%)
3	Total	85(54.5%)

Out of 85cases of Pterygium, 6(3.9%) cases are Pterygium with OSSN and 79 (50.5%) cases of pure Pterygium.

Table-V:- Distribution of Conjunctival Epithelial Lesions.

Serial no.	Lesions	Number of cases (%)
1	Inclusion cyst	8(5.1%)
2	Squamous Cell Papilloma	1(0.6%)
3	OSSN (Ocular Surface Squamous Neoplasm)	10(6.4%)
4	Squamous cell carcinoma	13(8.3%)
	Total	32(20.5%)

Out of 32 Epithelial Lesions, Squamous cell carcinoma is the most common lesion with 13 cases (8.3%), followed by 10 cases (6.4%) of OSSN, 8 cases (5.1%) of Inclusion cyst and 1 case (0.6%) of Squamous cell papilloma respectively. One rare case of spindle cell carcinoma which is a variant of squamous cell carcinomas recorded in present study.

Table-VI:- Distribution of Conjunctival Epithelial Lesions according to Age and Sex.

Age(years)	Male	Female	Number of cases (%)
0-10	-	-	-
11-20	1	-	1(3.1%)
21-30	2	1	3(9.4%)

31-40	6	3	9(28.1%)
41-50	2	-	2(6.2%)
51-60	6	5	11(34.3%)
61-70	3	2	5(15.6%)
>70	1	-	1(3.1%)
Total	21(65%)	11(35%)	32(100%)

Epithelial lesions are most common in 51-60 years age group 11(34.3%) with overall more common in male 21(65%) then female 11(35%).

Grading of OSSN

Table-VII:-Distribution of OSSN cases according to Grading.

Grade	**Number of cases (%)**
Mild	5 (3.2%)
Moderate	2 (1.3%)
Severe	3(1.9%)
Total	10(6.4%)

Out of 10 cases of OSSN, 5(3.2%) cases show mild dysplasia, 2(1.3%) cases show moderate dysplasia and 3(1.9%) cases show severe dysplasia.

Conjunctival Inflammation

Table-VIII:- Distribution of conjunctival inflammation.

Sr No.	**Conjunctival Inflammation**	**Noumber of cases (%)**
1	Non-Granulomatous	14(8.9%)
2	Granulomatous	4(2.6%)
	Total Cases	18(11.5%)

Thereare14 cases (8.9%) of non-granulomatous inflammation and 4 cases (2.6%) of granulomatous inflammation in this study.

Table-IX:- Distribution of tumor like Congenital Lesions of Conjunctiva

Tumor like congenital lesions of conjunctiva	**Number of cases (%)**
Dermoid	2(1.3%)
Dermolipoma	4(2.6%)
Totalcases	6(3.8%)

There are a total of 6 cases of tumor like congenital lesions of conjunctiva out of 156 total cases. Out of the 6 cases, 2(1.3%) cases of Dermoid and 4(2.6%) cases of Dermolipoma. There is equal preponderance for male and female.

Table-X:- Distribution of melanocytic lesions ofconjunctiva.

Sr No.	**Lesions**	**Number of cases (%)**
1	Nevus	7(4.5%)
2	PAM	1(0.6%)
3	Malignant Melanoma	2(1.3%)
	Total	10(6.4%)

Out of 10 cases of melanocytic lesions, the most common lesion is nevus with 7 cases (4.5%), malignant melanoma with 2 cases (1.3%) and Primary acquired melanosis with 1 case (0.6%) respectively. Females (60%) are affected more as compared to Males (40%).

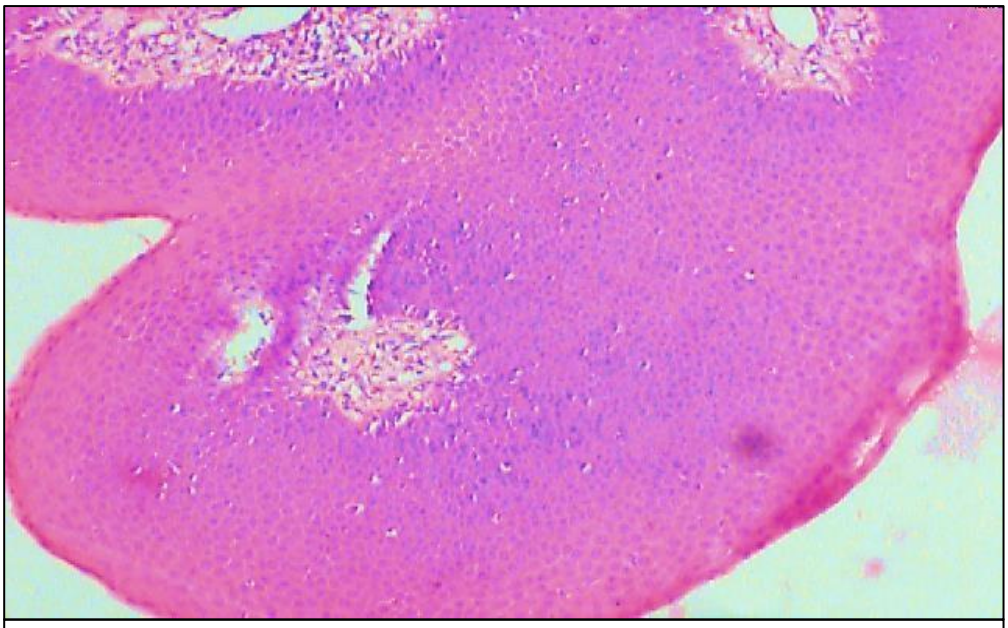


Figure-I:- Squamous cell papilloma;10X.

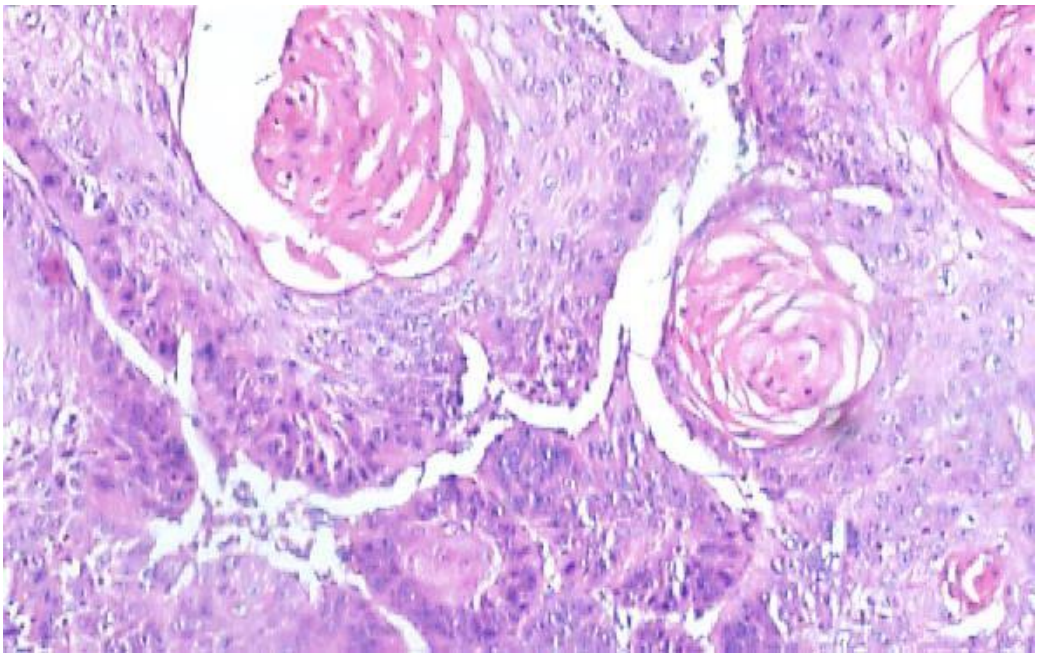


Figure-II:-Squamous cell carcinoma;10X.

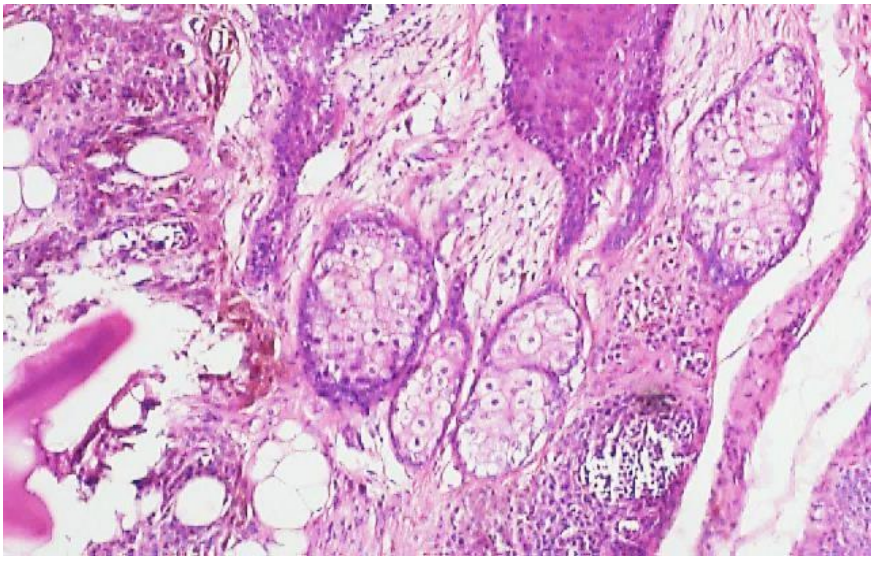


Figure-III:-Nevus;20X.

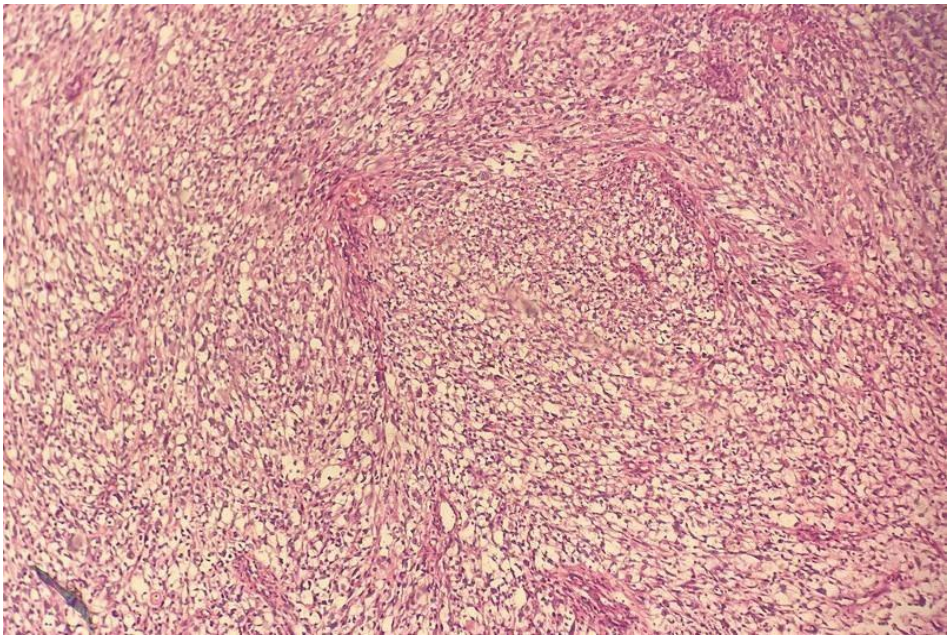


Figure-IV:- Rhabdomyosarcoma embryonal type; 10X.

Discussion:-

Table-XI:- Comparative analysis of conjunctival lesions with other studies.

Study	enerative lesions	pithelial lesions	anocytic lesions	Vascular lesions	Lymphoid lesions	Tumorlike congenital	Miscellaneous lesions	Total
Glen Mary MDet al[5]	298 (58.4%)	65(13%)	25(5%)	28(5.5%)	8(1.5%)	16(3.2%)	19(3.72%)	510 (100%)
Mondel sketal (2012)[3]	38 (31.8%)	50 (41.5%)	10 (8.33%)	12 (9.99%)	4 (3.33%)	1 (0.83%)	2 (1.66%)	120 (100%)
ındeep et el[7]	104 (72.2%)	14(9.2%)	7(4.9%)	10(6.9%)	1(0.7%)	6(4.1%)	2(1.2%)	144 (100%)
Present study	85(54.5%)	32 (20.5%)	10(6.4%)	1(0.6%)	2(1.3%)	6(3.8%)	2(1.3%)	156 (100%)

The distribution pattern of conjunctival lesions in our study is like other studies. In present study degenerative lesions are most common followed by epithelial lesions, melanocytic lesions, tumor like congenital lesions, lymphoid lesions, vascular lesions and miscellaneous lesions respectively.

Study done by Sundeep et al[4] and Glen Mary MD et el showed degenerative lesions were the most common, epithelial lesions were the second most common and the least common being lymphoid lesions which correlate with the present study.

Study done by Mondel SK et al[3] showed epithelial lesions were most common which correlate with the present study while tumor like congenital lesions were the least common lesions which contradict with present study.

Table-XII:- Comparative analysis of age distribution of degenerative lesions.

Sr No.	Studies	Age range with maximum cases(years)
1	Glen Mary M Detal[5]	51-60years
2	Silas O et al[6]	51-60years
3	Present study	51-60years

In the present study, cases are taken from 3 years to 85 years which correlate with the study done by Elshazly LHM[2] (1.5 years-77 years) and Aliakbar et el (2 to 88 years)

The maximum number of cases are in the age group of 51-60 years in our study whichcorrelate with the study done by Glen Mary MD et el[5] (51- 60years) and study done by Silas O et al[6] (51-60 years).

Table-XIII:-Comparative analysis of sex distribution in Conjunctival Lesions.

Sr No.	**Studies**	**Males**	**Females**
1	Glen Mary M Detal.[5]	291(57%)	219(43%)
2	Mondel SK etal. (2012)[3]	70(59%)	41(41%)
3	Elshazly LHM (2011)[2]	106(55.2%)	86(44.8%)
4	Present study	91(58%)	65(42%)

In present study, males are more commonly affected than females which correlate with the studies done by Glen Mary MD et al[5], Mondel SK et al[3] and Elshazly LHM.[2]

Table-XIV:-Comparative analysis of distribution of Epithelial lesions.

Studies	Squamous Papilloma (%)	Inclusion Cyst (%)	OSSN (%)	Squamous cell carcinoma (%)
Shields C Let Al (2004)[5]	38(2%)	27(1%)	71(4%)	108(6%)
Mondel SK et Al (2012)[3]	11(9.16%)	5(4.16%)	13(10.83%)	10(8.33%)
Elshazly LHM (2011)[2]	10(5.2%)	23(12%)	21(10.9%)	-
Reddy S Cet Al (1983)[12]	12(6.85%)	38(21.72%)	-	14(8%)
Amoli FA et A. (2006)[8]	35(7.8%)	-	25(5.6%)	112(25.05%)
Present study	1(0.6%)	8(5.1%)	10(6.4%)	13(8.3%)

In Present study most common epithelial lesion is squamous cell carcinoma 13(8.3%) followed by OSSN 10(6.4%) then inclusion cyst 8(5.1%) and squamous papilloma 1(0.6%).

Most common epithelial lesion is squamous cell carcinoma in the studies of Shields CL et al[4] and Amoli FA et al[8] which correlate with our study. Most common epithelial lesion in the study done by Mondel SK et al[3] is OSSN which is second most common lesion in present study.

Table-XV:-Comparative analysis of Pterygium with OSSN.

Sankar S et al (2006)[9]	14(23.3%)	60
Chui J et al (2006)[6]	5(5%)	100
Sun LLet al (2011)[10]	14(13.3%)	166
Present Study	6(7%)	85

In present study incidence of Pterygium with OSSN is 7%, which is closer to the study done by Chui J et al[6](5%).

Comparative analysis of grading of OSSN

Table-XVI:- Comparative analysis of grading of OSSN.

Studies	Mild	Moderate	Severe	Number of cases (%)
Sankar S et al (2006)[9]	9(15%)	1(1.67%)	4(6.67%)	14(23.34%)
Sun LL et al (2011)[10]	7(6.7%)	4(3.8%)	2(1.9%)	13(13.3%)
Present study	5(3.2%)	2(1.28%)	3(1.9%)	10(6.4%)

In present study mild dysplasiais more common, which correlate withthe other studies by Sankar S et al[9] and Sun LL et al.[10]

Tumor like Conjunctival Lesions

Table-XVII:- Comparative analysis of tumor like conjunctival lesions.

Studies	**Dermoid (%)**	**Dermolipoma (%)**
Shields CLet al. (2004)[7]	10(<1%)	23(1%)
Elshazly LHM (2011)[2]	3(1.6%)	8(4.2%)
Present study	2(1.3%)	4(2.6%)

In Present study dermolipoma (4 cases) is more common than dermoid (2 case) which correlate with the studies done by Shields CL et al[4] and Elshazly LHM.[2]

Melanocytic Lesions of Conjunctiva

Table-XVIII:- Comparative analysis of distribution of Melanocytic Lesions.

Studies	Nevus	PAM	Malignant melanoma
Shields CL et al (2004)[4]	454(28%)	180(11%)	215(13%)
Mondel SK et al (2012)[3]	5(4.16%)	1(0.83%)	2(1.66%)
Amoli FA Et al (2006)[8]	173(38.7%)	10(2.2%)	18(4%)
Elshazly LHM (2011)[3]	44(22.9%)	2(4.5%)	0
Present study	7(4.5%)	1(0.6%)	2(1.3%)

In Present study conjunctival nevus is the most common melanocytic lesion with 7 cases which is similar to the studies done by Shieds CL et al[4], Mondel SK et al[3], Amoli FA et al[8]and Elshazly LHM.[2]

Malignant melanoma is the second most common lesion with 2 cases which is similar to the studies done by Shieds CL et al[4], Mondel SK et al[3] and Amoli FA et al[11] where they reported Malignant melanoma as a second most common lesion.

PAM is a least common lesion in our study which is similar to studies done by Shieds CL et al[4], Mondel SK et al[3] and Amoli FA et al.[8]

Conclusion:-

The core of a good approach to conjunctival tumors hinges on a good histopathologic study and diagnosis. So clinicopathological correlation is crucial, requiring good communication between the Ophthalmologist and the Pathologist. 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 an early stage it is important to diagnose the lesion correctly so that the treatment can be initiated early.

References:-

1.Weng SehuK, 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 Jan – Mar; 18(1): 48 – 54.
3. Mondel SK, Nag DR, Bandyopadhyay R, et al. Conjunctival biopsies and Ophthalmic lesions. A histopathologic study in Eastern India. J Res Med Sci 2012 Dec; 17(12). 1178-1179.
4. Shields CL, Shields JA. Tumors of the conjunctiva and cornea. Surv Ophthalmol 2004 Jan –Feb; 49(1): 3-24.
5. Glens Mary MD, Suguna BV, Geethamani V. Histopathological spectrum of lesions in Conjunctival Medical Science. Indian J Appl Res 2016;6(3):377-9.
6. Chui J, Coroneo MT, Tat LT et al. Ophthalmic pterygium. A stem cell disorder with premalignant features. The American Journal of Pathology 2011 Feb; 178(2): 817-826.
7. Sundeep, Vinutha BV, Niveditha H, Divya K, Kothari M. Clinical Profile of Conjunctival Lesions: A Prospective Study. Int J Sci Stud 2016;3(12):55-8.
8. Amoli FA, Heidari AB. Survey of 447 patients with Conjunctival Neoplastic Lesions in Fabri Eye Hospital, Tehran, Iran. Ophthalmic Epidemiology 2006; 13: 275-279.
9. Taylor HR. Ultraviolet radiation and the eye: an epidemiologic study. Trans Am Ophthalmol Soc 1989; 87: 802-853.
10. Sun LL, Warrier S, Beckingsale P. Pterygium and Rate of Dysplasia in Surgical Specimens. J Clinic Experiment Ophthalmol 2011; 2(6): 166-167.

11. Shields CL, Demirci H, Karatza E, Shields CA. Clinical Survey Of 1643 Melanocytic and Nonmelanocytic Conjunctival Tumors. Ophthalmology 2004; 111(9): 1747-1754.
12. Reddy SC, Sarma CS, Ramana Rao VV, Banerjea S. Tumors and cysts of the conjunctiva- A study of 175 cases. Indian J Ophthalmol 1983; 31: 658-660.