

Pattern of Conjunctival Diseases in North Kordofan State

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Abstract:

Background: The conjunctiva is one of the most important elements of the eye because it covers the anterior white sclera and reflects on the eyelids, providing protection and lubrication while also producing mucus, which is an important component of the tear film. It also serves as a protective barrier against germ entry into the eye and aids in immunity. It is highly vascularized and has numerous lymphatic vessels. Some conjunctival disorders are caused by trauma, such as subconjunctival hemorrhage and conjunctival tear, while others are caused by infection, such as trachoma and conjunctivitis. **Methodology:** The study was carried out at the Ophthalmology Emergency Department of surgery El-Obeid Teaching Hospital and Dr. Khalil's Ophthalmology Center in North Kordofan State, Sudan. It was retrospective, descriptive research. The study sample covered all conjunctival illnesses, data was drawn from the medical record of 1000 patients with varied eye conditions, 175 patients with conjunctival diseases were selected. **Results:** This study investigated 175 patients with conjunctival abnormalities to determine the frequency of these diseases in North Kordofan state. The findings showed that conjunctival illnesses were more common in men, with 95 out of 175 cases (54%) and 80 out of 175 (46%) being females. The male-to-female ratio was 1.2:1, and the age range of 21-33 years was the most frequent, accounting for 33%. This was followed by the age groups of 33-53 years, 10-20 years, <9 years, and beyond 54 years, with percentages of 20%, 19%, 18%, and 10%, respectively. Subconjunctival hemorrhage was the most common type of conjunctival illness, accounting for 54% of cases, followed by conjunctivitis 17%, pterygium 15%, conjunctival tear 9%, pinguecula 3%, conjunctival nevus 1%, and trachoma. **Conclusion:** Conjunctival disorders were prevalent in Northern Kordofan state, with the most common being subconjunctival hemorrhage, conjunctivitis, pterygium, and conjunctival tear.

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Introduction:

The conjunctiva is a crucial component of the eye, covering the anterior sclera and extending onto the eyelids. It serves protective and lubricative functions and produces mucus, an essential constituent of the tear film. Additionally, it serves a protective function by preventing microbial entry into the eye and contributes to immune responses. It exhibits a high degree of vascularization and contains extensive lymphatic vessels [1]. Certain conjunctival diseases arise from trauma, including subconjunctival hemorrhage and conjunctival tear, while others result from infections, such as trachoma and conjunctivitis. So, subconjunctival hemorrhage was more prevalent conjunctival disease, due to outdoor activities, and predominantly affects younger individuals, while subconjunctival hemorrhage is a prevalent cause of red eye presenting in emergency departments and outpatient clinics. It typically arises from benign conditions but may also indicate more serious underlying diseases, particularly if persistent or recurrent. This condition is almost always painless and can be either localized or diffuse. Consequently, collaboration between physicians and ophthalmologists is essential in clinical practice [2]. Bacterial conjunctivitis presents as a red eye characterized by redness, tearing, and discharge in one or both eyes. It can be caused by bacterial, viral, or allergic agents and may occur sporadically or in epidemics, as observed in the ongoing situation in Sudan. Conjunctivitis is a common condition in Sudan, primarily occurring sporadically, and typically does not lead to severe complications. Conjunctivitis can become epidemic, resulting in significant and distressing symptom [4].

Materials and methods

This study was carried out at the Ophthalmology Emergency Department of El-Obeid Teaching Hospital and Dr. Khalil's Ophthalmology Center in North Kordofan State, Sudan. The study was descriptive and retrospective in nature. The study sample included all patients with conjunctival diseases, which constituted 175 patients derived from the medical records of 1,000 patients with various eye conditions.

Ethical Approval:

The Human Research Ethics Committee at prof medical research Centre approved the study proposal (Approval Number: HREC 0007/MRCC.3/24).

Results:

This study evaluated 175 patients with conjunctival diseases to determine the frequency of these diseases in North Kordofan state. The findings showed that conjunctival illnesses were more common in men, with 95 out of 175 cases (54%) and 80 out of 175 (46%) being female. The male-to-female ratio was 1.2:1, and the age range of 21-33 years was the most frequent, accounting for 33%. This is followed by the age groups of 33-53 years, 10-20 years, <9 years, and beyond 54 years, with percentages of 20%, 19%, 18%, and 10% correspondingly. Subconjunctival hemorrhage was the most common type of conjunctival illness, accounting for 54% of cases, followed by conjunctivitis 17%, pterygium 15%, conjunctival tear 9%, pinguecula 3%, conjunctival nevus 1%, and trachoma. See Table 1. In terms of conjunctival diseases sex distribution, males have a 64% higher rate of subconjunctival hemorrhage than females (36%). In conjunctivitis, ladies were 67% more affected than males (33%). In addition, females were more afflicted by pterygium (63% vs. 37%

males), while males and females were equally impacted by conjunctival tears (50% each), conjunctival navus (100% in males), and trachoma (100% females). See figure 2. The most affected age group for subconjunctival hemorrhage was 21-33 years (38%), followed by 10-20 years (29%), <9 years (16%), 33-53 years (12%), and 54 years and beyond (3%). The age group with the highest prevalence of conjunctivitis was <9 years (33%), followed by 21-32 years (7/30), >54 years (6/30), 33-53 years (4/30), and 10-20 years (3/30). Regarding pterygium, the most afflicted age group was 33-53 years with 12/27 (44%), followed by age group 21-32 years with 8/27 (30%), age group >54 with 6/27 (22%), age

group <9 years with 1/27 (4%), and finally age group 10-20 years with no cases. The age group 33-53 years was the most affected by conjunctival tears, with 7/16 (44%), followed by the age group >9 years with 4/16 (25%), then the age group 21-32 years with 3/16 (19%), then the age group 10-20 years with 2/16 (12%), and finally the group >54 years was not represented. Pingicula was found in just two age groups: 21/33 years (3/5, 60%) and >54 years (2/5, 40%). Conjunctival nevus was seen in only one group between the ages of 21 and 32, while trachoma was present in only one group above the age of 54. See Table 3.

Table 1 displays the proportion of conjunctival disorders observed in the study.

Variable	Number	Proportion
Subconjunctival hemorrhage	95	54%
conjunctivitis	30	17%
pterygium	27	15%
Conjunctival tear	16	9%
Pingicula	5	3%
Conjunctival nevus	1	1%
trachoma	1	1%
total	175	100%

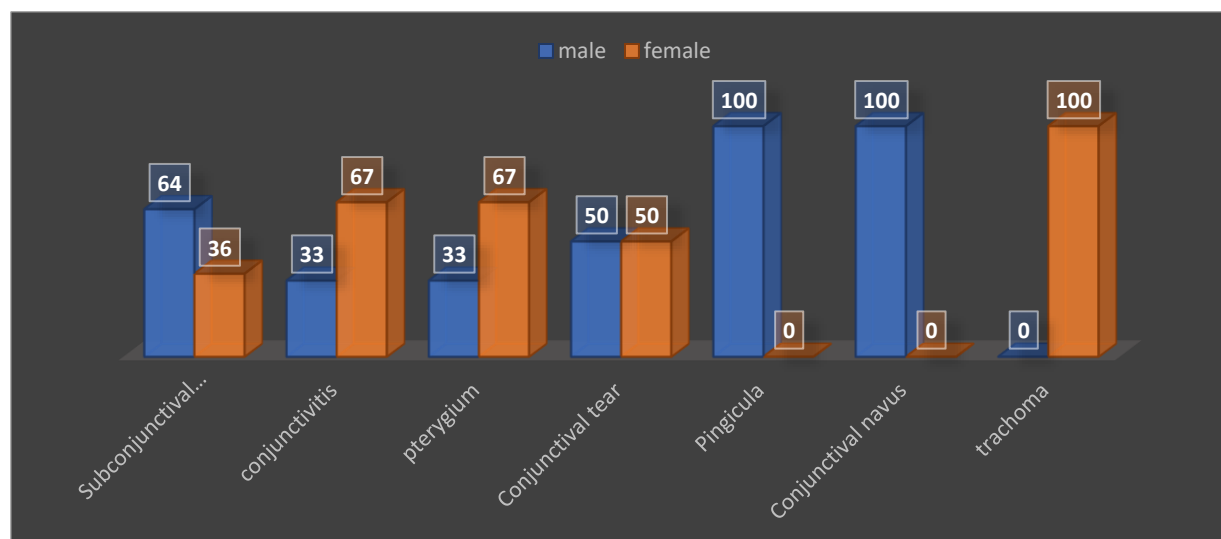


Figure 2 describes the presentation of conjunctival diseases by the gender of the patients.

Table 3 shows the distribution of conjunctival disease according to the age groups of the patients.

Variables	<9 years	10-20 years	21-32 years	33-53 years	>54 years	Total
Subconjunctival hemorrhage	16	28	36	12	3	95
conjunctivitis	10	3	7	4	6	30
pterygium	1	0	8	12	6	27
Conjunctival tear	4	2	3	7	0	16
Pingicula	0	0	3	0	2	5
Conjunctival navus	0	0	1	0	0	1
trachoma	0	0	0	0	1	1
Total	31	33	58	35	18	175

Discussion

This study looked at the prevalence of conjunctival illness in North Kordofan State. It revealed that subconjunctival bleeding was common due to extreme redness experienced by patients or family members and in some cases acute pain prompting them to seek medical attention. One study conducted in an outpatient clinic concluded that subconjunctival hemorrhage was common exclusively in children who had experienced trauma and that they should be closely monitored for additional indicators of trauma [5]. Also, in this study, subconjunctival bleeding was widespread, usually caused by trauma, and occurred in children and young adults. In this study conjunctivitis is primarily allergic, bacterial, and epidemic viral, accounting for 17% of the total and ranking second among conjunctival diseases. It primarily affected children; in research conducted in the same state on vernal keratoconjunctivitis in children, 81.7% had normal visual acuity [6]. As a result, it was most common in youngsters, with 33% of the cases affecting children under the age of nine. Concerning pterygium, it was the third cause of conjunctival disease and accounted for 15%. In a study conducted in Nigeria, it was discovered that from a total sample of 156 patients, females accounted for 59% and

males for 41% [7], which was similar to the study's results, which showed females at 62% and males at 38%. Conjunctival tears occur in 9% of patients and are caused by ocular trauma in all patients; they occur equally in males and females, with 50% for each; they occur in all age groups except those over the age of 60; and they occur as a result of ocular trauma, with the majority of them being monocular trauma; thus, eye injuries that result in conjunctival lacerations and other injuries are one of the most common causes of monocular blindness worldwide. Trachoma and conjunctival navus were identified in only 1% of the patients; therefore, in terms of trachoma, this low percentage will support the World Health Organization's key goal of eliminating trachoma globally by 2030 [9]. Concerning Conjunctival nevi were pigmented conjunctival lesions that are mostly benign. They are more common in whites than in blacks, and they are equally distributed between males and females [10]. As a result, their prevalence among whites reflects our study's population showed low percentage.

Although the current study provided vital updates on the patterns of conjunctival disorders in Sudan (a nation with little data on ocular diseases), it has some limitations, notably a lack of data on spring catarrh.

In conclusion, conjunctival illnesses were prevalent in Northern Kordofan, with the most common being subconjunctival hemorrhage, conjunctivitis, pterygium, and conjunctival tear.

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Conflict of Interest: Author declared no conflict of interest.

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