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PREVALENCE OF TRACHOMATOUS TRICHIASIS IN THE COMMUNITY OF ALABA DISTRICT, SOUTHERN ETHIOPIA

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## PREVALENCE OF TRACHOMATOUS TRICHIASIS IN THE COMMUNITY OF ALABA DISTRICT, SOUTHERN ETHIOPIA

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### ABSTRACT

**Background:** Until the burden of active trachoma is reduced for a sustained period, trachomatous trichiasis (TT) will remain one of the major causes of blindness in Ethiopia. The magnitude of trichiasis as well as knowledge, attitude and practice of people with this condition in Alaba District is not known.

**Objectives:** To assess the prevalence of trachomatous trichiasis in the community and evaluate the knowledge, attitude and practice (KAP) of these cases.

**Design:** A community based cross-sectional study.

**Setting:** Alaba District, 365 Km from Addis Ababa, Ethiopia.

**Results:** Out of 3850 people who were screened, 104 (2.7%, 95% confidence interval (CI): 2.2-3.2) cases were found to have trichiasis of which females and males accounted for 79.8% (83/104) and 20.2%, (21/104) respectively. While all cases didn't know the cause and risk factors for trichiasis, nearly all of them, 102 (98.1%), knew that surgical treatment could prevent blindness from trichiasis. Previously operated patients were reported to be the most important source of information regarding its management. Eighty two (78.8%) of them epilate the misdirected cilia. The cost of surgery and distance from eye care service were found to be the two main barriers preventing the cases from having surgery.

**Conclusion:** The prevalence of trichiasis greater than 1%, according to WHO, indicated that the community of Alaba District is facing a blinding trachoma. An increased public awareness regarding this common blinding disorder is required through health education. In addition, affordable and accessible surgical facility for trichiasis is needed in the area in order to prevent blindness.

### INTRODUCTION

Trachoma is a chronic conjunctivitis caused by *chlamydia trachomatis*. The prevalence of trachoma varies from one locality to the other depending on the climate, culture and socioeconomic status of the community. An estimated 150 million is affected and about six million people are facing blindness and visual impairment from trachoma worldwide (1). Thus, it is the focus of a new initiative to eliminate blinding trachoma by the year 2020 as it is the second leading cause of blindness worldwide (2). The world Health organisation (WHO) has endorsed the SAFE strategy to combat trachoma which consists of surgery to correct trichiasis, antibiotics to reduce the pool of active disease, and methods to improve face washing and environmental hygiene practices in trachoma endemic communities (3).

In Ethiopia, a survey carried out in seven different areas reported, that trachoma (42%) and cataract (29%) accounted for about 70% of the total blindness(4). Another community based study conducted in central part of Ethiopia has shown that 35% of blindness was caused by trachoma (5). A community based study conducted in

Dalocha District has shown that the prevalence of trichiasis was 3.2 % among the general population and 5.5% among adults (6). The report by the National Programme for the Prevention of Blindness in Ethiopia showed that of the total minor operations performed in 1994, more than half (56.8%) was done for trichiasis correction indicating the significance of trachoma in our country (7).

Until the burden of active trachoma is reduced for a sustained period in the trachoma endemic communities, surgery to correct trichiasis will be required to prevent blindness. Although surgery is very important in the prevention of blindness that is caused by trichiasis, acceptance of surgery by the affected communities has been reported to be low (8,9). A study carried out in central part of Malawi has shown that only 18% of women had undergone surgery in two years follow-up although surgical facility was available in the village (9). Another study which was conducted in rural part of Tanzania to determine the proportion of women with trichiasis who subsequently accepted surgery and to evaluate factors related to acceptance has shown that only 38% of the women had received surgical correction (8).

Blindness from trachoma is preventable by surgical correction of trichiasis. However, identification of the magnitude of trichiasis in the community is required in order to design an intervention programme against trachoma. If preventive or therapeutic measures are to have the greatest possible effect, it is also very important to understand the knowledge, attitude and practice (KAP) of people with trichiasis towards trichiasis and its surgical correction. These factors have not been evaluated in Alaba District previously. Therefore, this study was designed to determine the prevalence of trichiasis and assess the KAP of people with this condition regarding its cause, treatment and practices performed in the community of Alaba District.

#### MATERIALS AND METHODS

Alaba District is found in Southern Nations Nationalities and Peoples Regional State (SNNPRS) about 365 Km from Addis Ababa, the capital city of Ethiopia. The area stretches over an altitude of 1700 to 2200 meters above sea level. There were 90 peasant associations (PAs) in the district with a total population of 249,566. Ninety five per cent of the population live on subsistence farming. There were two health centres and two clinics with three referral centres at Shashemenie, Hossana and Wolayeta Sodo. Except for the Wolayeta Sodo Hospital, the other two hospitals were each staffed with an ophthalmologist.

After obtaining an ethical approval from the research and publication committee of the Department of Ophthalmology, Faculty of Medicine of Addis Ababa University, this cross-sectional study was conducted between March and April 2001 to determine the prevalence of trichiasis in Alaba District and to assess KAP of people with trichiasis. To obtain the sample size, an estimate of 3% prevalence of trichiasis with 95% confidence limit and 5% marginal error was used. Sample size was calculated using the following formula:  $N = (Z/ p(1-p))^2$  ( $Z=1.96$ ,  $p=0.03$ , response rate = 95%, Design effect = 1.5, Contingency = 10%). Accordingly, the required sample was found to be 3452 persons.

The PAs were categorised into four zones of the district based on the catchment areas of the health institutions. A total of 40 PAs, ten from each zone, were randomly sampled representing the rural residents. Information from 1994 census was used to create the sampling frame of PAs and households. By taking the average family size of 4.4 (from previous population census), about 785 (3452/4.4) households were required to obtain the sample. Systematic sampling method was used to identify the households to be included in the study. To obtain the sampling fraction, the total number of households in the 40 selected PAs were divided by 785 ie. the number of households required to obtain the sample.

Two nurses who were familiar with the language and culture of the community were used for the survey. Adequate training was given on how to examine and identify cases with trichiasis. The questionnaire format was also explained in depth to the enumerators. The agreement level in diagnosing TT between the nurses and the senior ophthalmic resident was found to be 95%. The pre-test results following the application of questionnaire was discussed. The questionnaire was prepared consisting of socio-demographic data and questions to assess knowledge, attitude and practice of people with trichiasis.

After the purpose of the study was fully explained to the head and members of the household and verbal consent was obtained, the enumerators examined all members of the selected

households for the presence of trichiasis using magnifying loupe (2.5x) and torch light. Trichomatous trichiasis was diagnosed if at least one lash was rubbing on the eyeball. Minor trichiasis represented the presence of five or less than five eyelashes rubbing the eyeball. The presence of more than five eyelashes rubbing the eyeball was classified as major trichiasis. The enumerators administered the structured questionnaire to cases with trichiasis. Finally, all cases of TT except two were appointed and surgical correction was done at Alaba Health Centre. Data was entered and analysed using Epi-info version 6 statistical package. Proportions were used for analysing the results.

#### RESULTS

Out of the total 3850 people screened for trichiasis, 104 (2.7%; 95% CI: 2.2-3.2) people were found to have trichiasis. Females accounted for 79.8% (83/104) while males constituted 20.2% (21/104) making female to male ratio of about 4:1. The mean age of the cases was 50 years (range 14 to 76). The prevalence of trichiasis was significantly higher in females (4.2%) than in males (1.1%). It was also found out that the prevalence of trichiasis increased with age. The prevalence of trichomatous trichiasis in females aged over 15 years was 8.6%. No case of TT was found below the age of 10 years. Seventy cases (67.3%) had bilateral trichiasis.

**Table 1**

*Socio-demographic characteristics of the cases, (n=104)*

Age (years)	Frequency (%)
10-19	2 (1.9)
20-29	4 (3.8)
30-39	10 (9.6)
40-49	26 (25)
50-59	31 (29.8)
60-69	21 (20.2)
70-79	10 (9.6)
Sex	
Male	21 (20.2)
Female	83 (79.8)
Educational status	
Illiterate	104 (100)
Ethnicity	
Alaba	72 (69.2)
Seltie	26 (25)
Amhara	3 (2.9)
Kembata	2 (1.9)
Hadiya	1 (1.0)
Religion	
Muslim	104 (100)
Marital status	
Married	57 (54.8)
Widowed	40 (38.5)
Divorced	7 (6.7)

Eighty eight (84.6%) of the cases were between the age of 40-80 years. Fifty seven cases (54.8%) were married, 40 (38.5%) widowed and seven (6.7%) divorced (Table 1). All cases were illiterate. Alaba was the major

ethnic group (69.2%) followed by Seltie (25%). All were Muslims and 71/104 (68.3%) were farmers. The entire cases did not know the causative agent of trichiasis. Almost all of them, 102 (98.1%), knew that trichiasis could lead to blindness unless treated.

**Table 2**

*Knowledge of people with trichiasis about its cause, consequences and treatment (n=104)*

Variable	Frequency(%)
Causes of trichiasis	
Inflammation	54 (51.9)
Do not know	38 (36.5)
Crying	12 (11.5)
Consequences of trichiasis	
Blindness	102 (98.1)
Does not lead to blindness	2 (1.9)
Treatment of trichiasis	
Know	90 (86.5)
Do not know	14 (13.5)

**Table 3**

*Practice of people with trichiasis, 2001 (n=104)*

Practice	Frequency(%)
Epilation	82 (78.8)
Operation	11 (10.6)
Nothing	9 (8.7)
Traditional healer	2 (1.9)
Total	104 (100)

**Table 4**

*Barriers which prevent people from having trichiasis surgery (n=104)*

Barrier	Frequency (%)
Cost (expensive)	65(62.5)
Distance (Transportation difficulties)	53(51.0)
Busy	3 (2.9)
Engaged with child care (no one to see my children)	1 (1.0)
Fear of pain	2 (1.9)
Others	3 (2.9)

Even though 90 (86.5%) of the cases knew that trichiasis could be treated surgically, only 11 (10.6%) of them underwent trichiasis surgery at health institutions previously. Participants obtained information regarding the surgical correction of trichiasis from people who knew

operated individuals 79 (76%), health professionals six (5.8%) and operated people themselves five (4.8%). Only two persons (1.9%) were not willing to undergo surgery, even if the surgery would be offered free in the village, due to fear of pain from surgery. Eighty two (78.8%) of the cases epilate the misdirected cilia using locally made epilation forceps and fingers.

The rest did not have surgery for the following reasons. Most of the cases, 65 (62.5%), thought that the cost of surgery would be expensive, 53 (51%) had transportation difficulties and only two participants were worried about the pain of surgery (Table 4).

## DISCUSSION

The prevalence of trichiasis of 2.7% (95% CI:2.2-3.2) in Alaba District indicates that the community is facing a blinding trachoma. This is comparable to the 2.2% rate reported from Morocco (10). A previous study conducted in one of the adjacent districts revealed the prevalence of TT to be 3.2% in the general population (6). As the district is located along the rift valley of East Africa, the high prevalence of TT obtained from these two districts revealed the fact that the area shares common predisposing features for trachoma. In line with the goal of vision 2020 and global elimination of trachoma (GET), the implementation of the SAFE strategy in the district is essential to prevent blindness from trichiasis. An estimated 8089 people with trichiasis is facing blindness unless urgent surgical facility is made available in the community. The fact that 67.3% of the cases had trichiasis in both eyes also strengthens the urgency of trichiasis surgery in the community.

The predominantly female population with trichiasis in this study (79.8%) was in agreement with previous reports from Tanzania (11,12). This has been explained to be due to their close association with and responsibility of caring for children who are reservoir for the infection (13). In addition to child care, cooking which by way of its irritant effect is said to aggravate the severity of trachomatous inflammatory process leading consequently to trichiasis, is the domain of females in our culture. These factors are believed to predispose females to severe repeated infections leading to the potentially blinding complications of trachoma (14). While active trachoma is common in children, trichiasis, the potentially blinding sequel, develops in adulthood and affects mainly women (3). Thus, our study revealed that 75% of the cases were between the age of 40-69 years. The prevalence of TT in females aged over 15 years was found to be 84% which is comparable to 8.6% reported from Nigeria (15).

This study was conducted in the rural community where people have little opportunity to attend school education; thus the entire subjects were illiterate. All of the cases didn't know the cause of trichiasis as well as its risk factors. Obviously, education facilitates accessibility to information through reading or mass media. This poor

knowledge may result in a negative effect on the prevention of trachoma. Moreover, people with trichiasis in the lid of one eye and operated the lid of the other eye for trichiasis had poor knowledge about the cause of trichiasis and its risk factors. This indicates that the quality of health education, which is given in the area before and after the operation, is very poor. Therefore, a strengthened health education about trichiasis, in the health institutions of the study area as well as their referral sites, should be given for the community.

It was found that most of the cases knew that trichomatous trichiasis could lead to blindness unless treated properly. Moreover, a large proportion of them (81.75%) also knew that trichiasis could be treated surgically. People who knew an operated person and operated people themselves were reported as being the most important source of information about trichiasis surgery in this study. It would, therefore, be wise to include education of operated people about the cause and risk factors of trichiasis and the advantages of trichiasis surgery as one of the strategies to disseminate these information in the community. Therefore, this finding indicated that most of the people with trichiasis would accept the surgery if it were offered in their villages.

The cost of surgery and transportation difficulties were found to be the two main barriers preventing the cases from having surgery. The cost of surgery was also reported as the main barrier in other studies (9,15). The practice of most of the participants was found to be epilation of the mis-directed cilia by locally made metallic epilation forceps. The authors observed that most of the participants were hanging the forceps over their neck with their jewel. Though this alternative (epilation of misdirected cilia) alleviates the problem of foreign body sensation and other related ocular discomfort for a short period of time, it should not be taken as a permanent solution for the problem. Infact, it is believed that re-growing lashes following epilation are more stiffer and traumatic to the cornea than the original ones. The use of epilation as a treatment of trichiasis is also an indication that eye care service is not locally available. In line with the goals of vision 2020, the development of infrastructure and human resource is required.

In conclusion, this community was found to be a community with potentially blinding trachoma. This calls for the implementation of the SAFE strategy. Despite its shortcoming on sampling technique, this study has also provided insight into the knowledge, attitude and practice of people with trichiasis towards trichiasis and its surgical correction. The knowledge of people with trichiasis about its cause was very poor with several misconceptions and this may have a negative impact on the prevention of trachoma. Therefore, a strengthened health education about trachoma in general and trichiasis in particular should be given for the community. Besides this, most of

them knew that trichiasis may lead to blindness and also could be treated surgically. Apart from cost and transportation difficulties, almost all of them were willing to have the surgery. Therefore, the surgical service should be accessible as well as affordable.

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