



A PATHOLOGICAL SURVEY TO ESTIMATE THE OUTCOMES IN SMOKELESS TOBACCO USERS OF KOSI REGION.

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ABSTRACT

Introduction – Tobacco is definitely one of the killer vices across the globe, with its killing prowess being probed in so many different ways. Tobacco is used in various forms in India and the chewable form is in vogue among the northern parts of India. Pathological screening of patients coming with other lesions apart from oral cancer needs have been established to be linked with tobacco use. With few documented evidences from the state of Bihar, being the premier institute in the Kosi region it was decided to explore the oral cytopathology and exploring the links with tobacco use of patients coming in Darbhanga Medical College.

Objective: – The present study was conducted to know the various macroscopic and microscopic changes in tobacco chewers of Kosi region.

Material and method: – One hundred individuals suffering from various oral complaints coming to Darbhanga Medical College (both outdoor and indoor) were included in the study. Staining of cytological smear done by Haematoxylin and Eosin.

Study period – June 2012 – March 2013.

Result: – Majority of tobacco chewers of cases belongs to 40-60 year age group, predominantly male. In cases macroscopic lesions were leukoderma (46.66%), pre leukoderma (33.33%), leukoplakia (20%), mucositis (26.66%) and pigmentation (18.66%). Cytologically normal smear was present in 74.66% of cases, dysplasia in 16% and squamous cell carcinoma in 9.33%.

Conclusion – Our study reiterates the link between tobacco chewing & pre-cancerous lesion. We recommend routine cytological examination of all tobacco chewers and if possible dissuade people from using chewing.

KEYWORDS : TOBACCO, CYTOLOGY, DYSPLASIA

INTRODUCTION

Discovery of tobacco plant was earliest done by Americans, but they used it in smoking^[1]. Looking upon the forms of tobacco use in India, among adults tobacco users, smokeless tobacco form was used most commonly (15yr & more) according to global Adult tobacco survey done in 2009-10^[2]. Chewing tobacco causes cancer of mouth, tongue, cheek and gum cancer^[3]. Guthka a relatively newer form of chewable tobacco having its origin in India was considered a major threat for the US population way back in 2005 and is also well documented to cause oral pre-cancerous lesions as it remains in contact of mucosa for a long period because it is chewed or sucked in mouth^[4]. Pre-malignant condition of oral cavity causes 30 to 80% of malignancies^[5-7]. Oral cancer has been documented to be a result of transformation of oral pre-cancerous lesions and conditions like oral leukoplakia and oral submucosa fibrosis. It has been established that tobacco chewing and pan masala is a strong causative agent for oral cancer and related lesions^[8]. Over 5 people in India die every hour everyday because of oral cancer^[9]. High prevalence of oral tobacco chewing is well documented across the northern parts particularly in the states of Bihar, Uttar Pradesh and Jharkhand^[10]. With limited evidence available from the region of Kosi about the incidence of oral lesions in the tobacco chewers of these parts, being the apex medical institute of Kosi region^[11] we decided to study the slides of people coming with any oral lesion and exploring relation to tobacco use.

MATERIAL & METHODS

The proposed study was conducted in Dept. of Pathology Darbhanga Medical College. One hundred individuals suffering from various complaints were included of which 25 were control and 75 were case.

Ethical Clearance – Prior to the study the clearance was taken from the college Ethical committee.

Study period – The study was done from June 2012 – March 2013

Type of Study – A hospital based case control study in which cases

were people who were using smokeless tobacco in any form, while controls were patients who never used tobacco till date of the study.

The patients were asked for personal identification, type of tobacco consumed and complaints. Oral swabs were taken to collect cytological samples of the oral mucosa.

The samples were evaluated cytologically with respect to pleomorphism, N/C ratio, anisonucleosis hyperchromatism etc. The samples were taken by spatula and smears prepared on slide. Staining of smear was done by haematoxylin and eosin staining.

RESULT

Table 1- DISTRIBUTION OF SUBJECT ACCORDING TO AGE

AGE GROUP (YEARS)	CONTROL		CASES	
	NO.OF SUBJECT	%	NO.OF SUBJECT	%
<20	2	8	5	6.66
20-40	14	56	29	38.66
40-60	8	32	38	50.66
>60	1	4	3	4
TOTAL	25	100	75	100

Below 20 years control were 8% (2) and case were 6.66% (5). Among 20-40 years group control were 56% (14) and case were 38.66% (29). In 40-60 year age group case was 50.66% (38) and control were 32% (8). Above 60 yr. age group control was 4% (1) and case was 4% (3) thus the max no of subject in control belong to age yr. 20-40 yrs. 56% [14] and the cases belong to 40-60yr 50% [38]

Table 2- DISTRIBUTION OF SUBJECT ACCORDING TO SEX

SEX	CONTROL		CASES	
	NO. OF SUBJECT	%	NO. OF SUBJECT	%
MALE	18	72	66	88

FEMALE	7	28	9	12
TOTAL	25	100	9	12

Among cases 88%(60) were males where as only 12%(9) were females, where as in 25 controls 72%(18) were males and 28%(7) were females. Thus most of individual in both groups were male 72%(18) in control and 88%(66) in case group.

Table 3- DIFFERENT MACROSCOPIC LESION OF ORAL MUCOSA IN SUBJECTS

Lesion	Control		Cases	
	No. of subjects	%	No. of subjects	%
Mucositis	...	..	20	26.66
Pre leukoplakia	3	12	25	33.33
Leukoplakia	..	..	15	20
Leucoderma	..	..	35	46.66
Pigmentation	..	..	14	18.66
Growth	2	8	9	12
Ulcer	1	4	10	13.33
Fissure	..	...	8	10.66

On gross inspection mucositis was present in 26.66% (20) people of cases. Preleukoplakia was present in 33.33%(25) of cases, whereas it was present only in 12%(3) people of controls. Leukoplakia was present in 46.66%(35) of cases. 18.66%(14) cases presented with pigmentation. Some type of growth was present in 12%(9) of cases where as present only in 8%(2) of control. Ulcerative lesion was present in 13.33%(10) cases and in 4%(1) of control. Fissure was present only in 10.66%(8) of cases. Thus most common lesion in cases was leucoderma and in controls was preleukoplakia.

Table 4- VARIOUS CYTOLOGICAL FINDINGS

CYTOLOGICAL DIAGNOSIS	NO. OF CASES	%
NORMAL SMEAR	56	74.66
DYSPLASIA	12	16
SQUAMOUS CELL CARCINOMA	7	9.33

On microscopic examination of cytological smear 74.66% [56] cases were found to be normal. Dysplasia was present in 16%(12) of total cases. Squamous cell carcinoma was present in 9.33% (7) of cases.

Discussion

In our study most of the males were tobacco chewers Out of total participants (84%). Ranganathan et al.^[12] in their study reported that quid chewing habit and lesion was prevalent in both male and females. Out of 185 cases with habit and lesion 90.2% were male and 9.2% female, with male to female ratio of 9:1. In this study maximum number of cases belong to 40-60 yr. age group. While Arvind bagate et. al.^[13] found maximum no of suspected malignant cases in the age group of 41-70 years.

We found lecoderma as predominant macroscopic lesion followed by pre leukoplakia. In a study by Avanindra kumar et al.^[14] leukoplakia was commonest lesion followed by oral sub macous fibrosis. In present study most of smears was normal and squamous cell carcinoma was present only in 9.33%. These finding are different from Cawson^[15] et al and Salvator allegra et al.^[16]

CONCLUSION

Our study reiterates the popular notion that tobacco chewing and oral precancerous lesions are interlinked. Oral cytology can detect and help in preventing the dreaded oral cancer. Use of tobacco chewing in any form must be avoided but if tobacco chewers are coming to the health system they should be screened with the help of oral cytology to confirm the damage done by tobacco.

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