Discussion

The present observation included 104 cases who attended out door of the Department of Otolaryngology, of M. L. B. Medical College JHANSI. (U.P.)

Prevalence

The prevalence (Table 1) of Oral Submucous Fibrosis in this region was found 1.81%. Pindborg et al. (1964), during epidemiological survey, found average prevalence of Oral Submucous fibrosis, 0.5% which ranged from 0.18% to 1.22%. In their survey prevalence at Lucknow was 0.51%.

Age:

Average age in this observation was 26.2 years. Most of the patients were reported (Table 2) from the 2nd, 3rd & 4th decades (14.42%, 52.88% and 19.23%). The patients of these three decades shared 90 (86.53%) in 104 observed cases. Sirsat and Khanolkar (1962) studied age distribution in Oral Submucous Fibrosis in patients in Bombay City found that majority of the patients were belonging to age group of 21-40 years. Similar observations also were made by Pindborg et al. (1964).

Sex:

Sex distribution (Table 3) showed male predominance in the observed sample. Share of male patient was 84 (80.74%) and of female patient was 20 (19.22%). Sex trend did not show any definite trend during epidemiological surveys of Pindborg et
al. (1964) while Rao (1954), Wahi (1966) and Gupta (1978) observed female predominance of the disease. Sirsat and Khanolkar (1966), in series of studies could not conclude a definite sex trend of the disease. In few series it was female dominating while other series showed male predominance.

**Religion:**

Religious trend of oral submucous fibrosis (Table 4) pointed its incidence 80.76% in Hindus, 15.38% in Muslims and 3.8% in other (Christians). Sirsat and Khanolkar (1962) observed that no caste in particular and no religion was specially affected by this disease. They also indicated that caste and community trend of the disease depend upon the location of the hospital where observation is being made. In epidemiological surveys, Pindborg et al. (1964) found that none of the caste and community is specially affected. The disease is evenly distributed in all castes in different communities was similar to the distribution of their population in the society. The disease was found evenly distributed in all communities, in relation to their population.

**Rural/Urban:**

The disease prevalence (Table 5) in rural and urban cases was 42.30% and 57.69% respectively. From the very first observation made by Schwartz (1952) it was found that rural and urban, both populations are equally affected by oral submucous fibrosis. The similar inference were made by Sirsat and Khanolkar (1962), Pindborg
et al (1964) and Wahi (1966). In present study the earlier age groups were dominated by urban patients while the rural patients were dominating in the later age groups. It is particularly due to awareness of the disease in advanced and educated societies.

**Social Stages:**

All social classes were affected with this disease (Table 6). Major share of the disease came from the class III and class IV 40 (38.46%) and 41 (39.42%) cases respectively. Paymaster (1956), Pindborg et al. (1964), Rao (1962), Sirsat & Khanolkar (1962) and Lay (1982) concluded the incidence of oral submucous fibrosis in all social classes. Our community and social setup is dominated by class IV and class III population. Therefore large share of patients came from these two classes of society.

**Clinical Presentation:**

Su (1954), DeSa (1957) described inability to open mouth being the commonest presentation of the disease. Later statements of the workers also supported the views made by Su and DeSa. Paymaster (1957) and Pindborg et al. (1964) found intolerance to hot spicy foods and chilies (burning sensation) as the earliest symptom but it was inability to open mouth, which brought the patients to the clinicians. Paymaster (1957) and Rao (1962) described inability to protrude tongue as third commonest symptom of oral submucous fibrosis. Rao pointed that, as the disease becomes advanced, pain and swelling around lower jaw resulted. All four symptoms made the eating of spicy food
both painful and difficult, Pindborg et al. (1964). Rao (1962) found earache associated with oral submucous fibrosis. He explained its occurrence possibly due to involvement of opening of Eustachian tube into oropharynx. Extensive fibrosis of palate lead to nasal voice and nasal regurgitation (Sirsat and Khanolkar, 1966). Paymaster (1957) and Rao (1962) indicated that involvement of buccal mucosa made it, luster less and the patient became unable to blow a candle out or unable to whistle. Soni (1978) observed loss of taste sensation in advanced cases of oral submucous fibrosis.

In this observation the chief complaints were difficulty to open mouth in 85.5% (89) cases, intolerance to hot and spicy foods in 81.7% (85) cases, inability to protrude tongue in 38.46% (40) cases, pain and swelling around jaw and neck in 2.8% (3) cases. Among other associated symptoms the earache was presented in 2.8% (3) cases and loss/decrease in taste sensation in 25.00% (26) cases. 11.5% (12) cases showed inability to whistle. Nasal voice and nasal regurgitation was observed in 14.42% cases and 2.8% cases respectively.

Difficulty to open mouth and intolerance to hot and spicy food was evenly observed in all age groups where as inability to protrude tongue and pain and swelling around lower jaw is presented by the patients of more advanced age. These two symptoms were directly related to the severity of the disease. Nasal voice and nasal
regurgitation too, were related to the severity of the disease while age and severity of
the disease both, were related to the decrease in taste sensation (Table 7).

**Personal Habits:**

**Tobacco Chewing:**

90% (94) cases were tobacco chewers. Incidence of tobacco chewing increased
with increasing the age. The highest percentage of tobacco chewing was in later age
groups which was equally practiced in rural and urban population. Pindborg et al.
(1964) found tobacco chewing in most of the patients, suffering from oral submucous
fibrosis. Wahi and Kapoor (1966) also confirm the observations of Pindborg. They
observed tobacco chewing in 40% cases of this disease. Moos (1968) indicated
tobacco, one of the commonest irritating material to oral cavity (Table 8).

**Examination:**

**Trismus:**

Most of the cases were reported with trismus from stage I, (31.7%) and stage II
(43.2%). Incidence of trismus was evenly distributed in all age groups. Su (1954) and
DeSa (1957) described trismus as the commonest symptoms of the disease. In their
observations, they found trismus in 60% and 70% cases respectively (Table 10).

**Site of Oral Submucous Fibrosis:**

Sirsat and Khanolkar (1962) found severe fibrosis of palate in 80% cases of oral
submucous fibrosis. Similar observations were made by Pindborg et al. (1964). They
found fibrosis of cheek in 75% cases. Rao (1964) observed the distribution of fibrotic bands in oral cavity and found that palate and checks were mainly affected. In his observation fibrosis of palate and cheek was followed by fibrosis of pillars and tongue. Uvula, lip and Pharynx were less affected sites of fibrosis.

In present observation palatal fibrosis was found in 91% (95) cases. Fibrosis of cheek was also presented in 93% (97) cases. Fibrosis of tongue was seen in 68% (71) cases while the fibrosis of retromolar trigone were seen in 88% (92) cases. As the disease advanced, more area of the oral cavity were affected. The findings of Rao (1964) were similar to the findings mentioned above (Table 9).

**Ankyloglossis:**

Ankyloglossis was observed in 38.46% (40) cases. The ankyloglossic symptoms were related to severity of the disease and extent of the fibrosis. In present observation, this symptom was presented by Mosy of the case of 2nd and 3rd stage of the disease, Rao (1962) found ankyloglossia when the fibrosis occurred with the involvement of tongue muscles. Ankyloglossia is resulted in most of the advanced cases of oral submucous Fibrosis, Rao (1962) and Pindborg et al. (1964) (Table 7).

**Clinical Staging :**

De Sa (1957) classified disease into three stage. His classification was entirely based upon the extent of fibrosis and severity of the disease. Pindborg et al. (1964) observed that rural patients usually came in advanced stages. In present observation
25% (26) cases were observed in stage III, 43.2% (45) cases in stage II and 31.7% (33) cases in stage I. Rural and old aged patients were in stage II and III of the disease (Table 10).

Investigation:

Anaemia:

5.76% (6) cases were having haemoglobin less than 8 gm% and 28.8% (30) cases were having haemoglobin in the range of 8-10gm% (Table 11). These cases were poorly nourished. The incidence of anaemic cases increased with the age. Rural patients were more anaemic than the urban. Sirsat and Khanolkar (1962) observed nutritional deficiency anaemia in one third cases of oral submucous fibrosis in Bombay City. Pindborg et al. (1964), in their epidemiological survey, found poor nutritional status and anemia in rural population. Later workers, Mukherjee and Biswas (1972) also confirmed the findings of previous workers.

Serum Calcium:

In the present observation 47.1% (49) cases had serum calcium in the range of 7-8 mg% while 37.5% (39) cases had serum calcium in the range of 8-9 mg% and 15.38% (16) cases were having serum calcium in the range of 9-10.2mg%. The decreased serum calcium level was related to severity of disease and extent of the fibrosis. As the disease and age advanced the serum calcium level decreased (Table 12).

Serum Iron:

Paul RR, Chatterjee J, Das AK, Dutta SK and Roy D (1996), Anuradha CD, Shyamala Devi CS (1993) and Rajendran R, Vasudevan DM and Vijay Kumar T (1990). Observed significant decrease in Serum Iron. In present study 5.7% (6) cases had serum iron less than 0.5mg/L 58.6% (61) cases had serum iron in the range of 0.6
to 1.0 mg/L (Table 13). Decreased Serum Iron was directly related to extent of disease and age of patients.

**Oral Cancer & Malignant Transformation:**

Paymaster (1957) first indicated the incidence of oral cancers with oral submucous fibrosis. Pindborg et al. (1964) observed incidence of oral cancers in oral submucous fibrosis as 1.5%. Other workers, Rao (1962), Wahi and Kapoor (1966) also found increasing incidence of oral cancers in oral submucous fibrosis as compared to its incidence in normal individuals. Murti (1985) observed 7.5% incidence of co-existence of oral cancer and oral submucous fibrosis. In his observation malignant transformation rate was 4.5%.

In present study (Table 14) the incidence of oral cancer in oral submucous fibrosis was found in 4.8% (5) cases. The malignant transformation rate in the present sample was found 1.92%.

**Treatment:**

Sirsat and Khanolkar (1962) advocated vitamin supplementation in the management of the disease. They found remission of symptoms in 40% cases of oral submucous fibrosis. They observed that less severe symptoms were improved easily this treatment and it was very effective in early stages of the disease process. They put their views forward, keeping the fact that most of the cases reported in their observations were anaemic and nutritionally poor, into mind. They advocated systemic and local supplementation of vitamins B complex, A & E. Local treatment consisted of intra oral injections of vitamin A & E. Varghese (1987) observed reduction of serum zinc level in the patients suffering from oral submucous fibrosis. Paul RR, Chattejee J, Das Ak, Dutta Sk, Roy D (1996) found that decreased serum zinc and iron can be regarded as an alternate indicator of the precancerous nature of Oral Submucous Fibrosis. Maher R, Aga P, Johnson NW (1997) found significant improvement in symptoms of Oral Submucous Fibrosis after supplementation with
multivitamins (Vit. A, B, C, D & E) and minerals (Iron, Calcium, Copper, Zinc & Magnesium etc.).

In a preliminary study of serum protein, Ascorbic Acid, iron & tissue Collagen in Oral Submucous Fibrosis, CD Anuradha & CS Shyamala Devi (1993), found that Ascorbate and Iron levels decreased perhaps because of their utilization in collagen synthesis.

Quantitative analysis of human buccal epithelium in Iron deficiency Anaemia ,JS Rennie, DG Mac Donald (1982) found that buccal epithelium is significant thinner than normal and this reduced epithelial thickness is due to a reduction in the thickness of the maturation compartment.

Serum levels of Iron and proteins shows significant decrease in Oral Submucous Fibrosis, Rajendran R, Vasudevan DM, Vijay Kumar T (1990). Taking this fact into consideration, patients of the present sample of study were supplemented with oral calcium and iron.

Result:

In present study result comparison of both groups (Study Group 52, Control Group 52) showed improvement in 52.8% (55) cases. 32.6% (17) cases in Control group and 73% (38) cases in Study group (Table 15).

Management of Failure Cases:

Kaker (1985), Sinha (1980) compared Hylase, hydrocortisone and combination of these two and obtained best response with the combined treatment.

In the present study 45 failure cases of both groups, 63.46% (33) cases in Control Group and 23% (12) cases in Study groups, were subjected to combined treatment of local hyaluronidase, Hydrocortisone and vitamins supplementation with antioxidants etc. 82% (37) cases respond to the treatment and showed improvement in Symptoms 17.7% (8) cases remained unimproved, 5 cases of these were diagnosed malignancy of oral cavity and not respond to the treatment.