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RESEARCH ARTICLE

HISTOPATHOLOGICAL SPECTRUM OF BENIGN AND MALIGNANT MALIGNANT LESIONS OF ORAL CAVITY- AN OBSERVATIONAL STUDY IN A TERTIARY CARE HOSPITAL IN SOUTH WEST PART OF PUNJAB

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ABSTRACT

Introduction: Oral cavity is one of the most commonly accessible sites for tumor and tumour like lesions with more prevalence for benign lesions than malignant with male preponderance.
Aim: To study the spectrum of oral cavity lesions in relation to age , sex and site.
Results: A total of 473 cases were included in the present study. Out of these, 263(55.6%) were males and 210 (44.39%) were females with Male: Female ratio of 1.5:1. Tongue 177 (37.4%) was the most common site closely followed by tonsils 175(36.9%), Buccal Mucosa 52 (10.9%), Lip 36 (7.6%), Minor salivary glands 14(2.9%) floor of mouth 11 (2.3%), Palate 9 (1.9%) and retro-mandibular/ post ramal (1.4%). Neoplastic lesions accounted for 11.4% cases and non neoplastic lesions for 88.5%. Benign neoplasia accounted for 37% of the total neoplastic lesions and malignant lesions constituted 62.9%. Squamous cell carcinoma being the most common malignant lesion (70.5%).
Conclusion: Due to their high malignant potential and overlapping clinical features, histopathological typing of the various lesions is mandatory to confirm the diagnosis.

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INTRODUCTION

India is the 3rd largest producer of tobacco worldwide and ranks 2nd in consumption according to the Global Adult Tobacco Survey Report with Punjab ranking among the least common users of the tobacco (Global Adult Tobacco Survey Gates, 2009). Tobacco chewing in any form has been associated with pathological lesions both benign as well as malignant. Majority of the oral cavity lesions are benign with commonest being hyperplasia of palatine tonsils, mucous retention cyst, leukoplakia and inflammation. Oral malignancy represents the 3rd most common form of malignancy in the developing countries. Among neoplastic lesions squamous cell carcinoma was the most common pathology. Squamous cell carcinoma constitutes 80-90% of all the malignant lesions of the oral cavity. Different sites in the oral cavity have different propensity for different types of the lesions. The present study was conducted to study the spectrum of oral cavity lesions.

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MATERIALS AND METHODS

A prospective study of 473 specimens was studied in the Dept. of Pathology over a period of One and half years. Specimens were received in 10% formalin in the Histopathology Department of Adesh University of Health Sciences from the Dept. of Otorhinolaryngology and Dept. of Dental Surgery. After standardized processing into paraffin embedded sections, haematoxylin and eosin stained slides were prepared for diagnosis under light microscopy.

RESULTS

Of the 473 cases studied, non neoplastic lesions constituted the major bulk of the cases with 88.5% while neoplastic lesion constituted a meagre 11.4% of all the cases. Among the neoplastic lesions benign lesions constituted 37% while majority were malignant neoplasms represented 62.9% of all the neoplastic lesions with the benign to malignant ratio of 1:1.7. Male to female ratio for benign neoplasms was 1.8:1 while for malignant neoplasms it was 2.4:1.

Age wise distribution was seen to be maximum in the 3rd to 6th decade thereby constituting 81.48% of the cases. Tongue was the most commonly affected site (37.4%) followed by tonsils (36.9%), buccal mucosa (10.9%), lip (7.6%), minor salivary glands (2.95%) and floor of mouth (2.3%). Histopathologically lymphoid hyperplasia of tonsils was the most common non-neoplastic lesion constituting 39.3% of all the non-neoplastic lesions of the oral cavity followed by mucous retention cyst comprising of 22.9% and leukoplakia (15%). Among the malignant neoplastic lesions squamous cell carcinoma was the most common histopathological diagnosis amounting to 67.6 % of all the malignant oral cavity lesions.

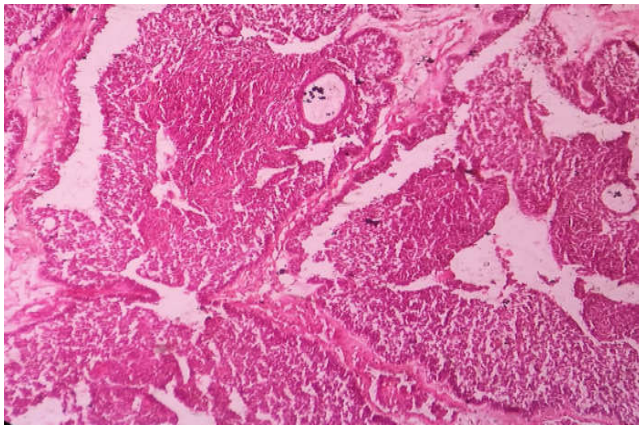

Fig.1. H & E (10X) Showing Ameloblastoma exhibiting basaloid follicular appearance with central portion composed of loose stellate reticulum

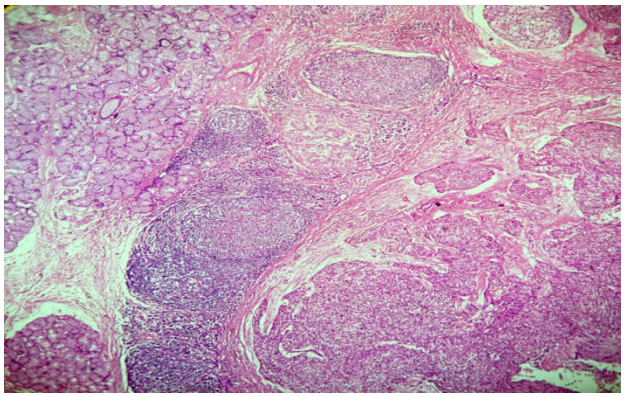

Fig.2 H & E (10x) Polymorphous low grade adenocarcinoma showing well circumscribed infiltrating tumor infiltrating into residual salivary gland tissue and connective tissue

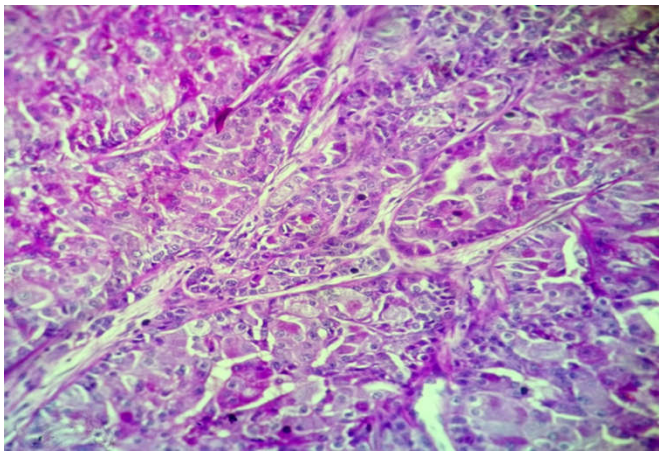

Fig.3. H&E (40x) Mucoepidermoid carcinoma showing squamoid cells along with foamy cells

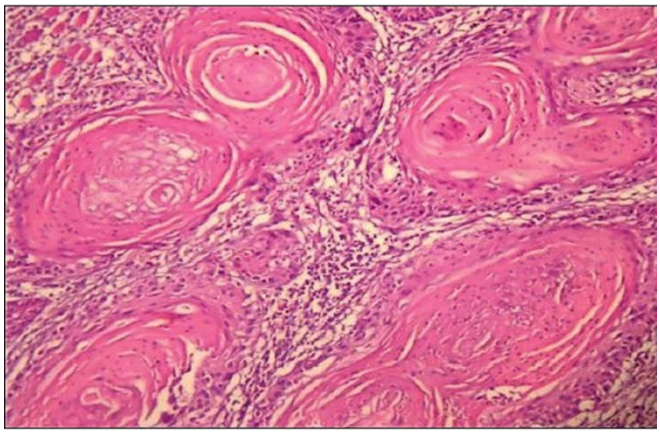

Fig.4. Well differentiated SCC showing well formed keratin pearls

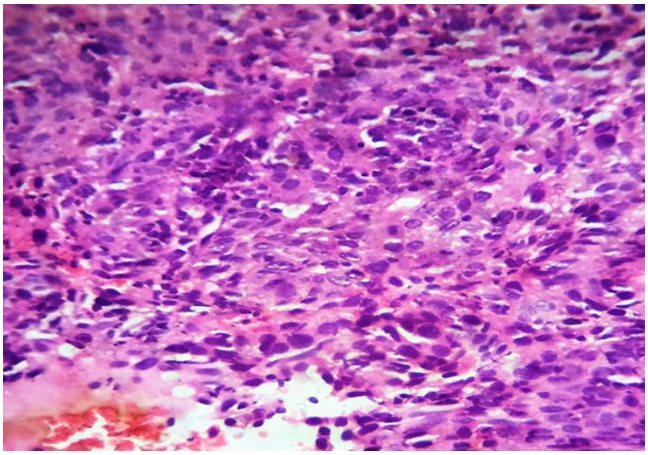

Fig.5. Moderately differentiated SCC showing moderate nuclear Pleomorphism

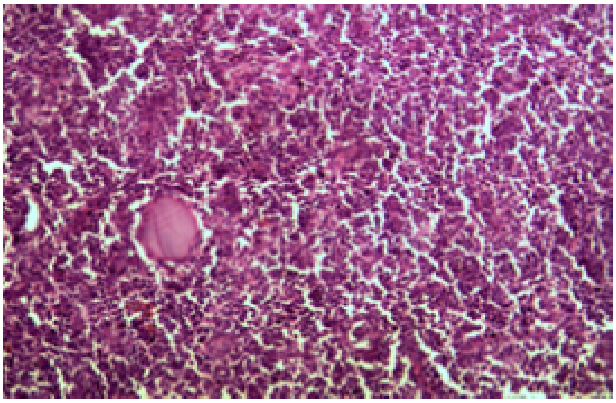

Fig.6. H & E(10X) Lymphoma showing monotonous population of Lymphocytes

Poorly differentiated squamous cell carcinoma was the most common histological grading constituting 50% of all the SCC followed by moderately differentiated (30.4%) and well differentiated SCC (17.6%). A single case of Non-Hodgkin's lymphoma was also present.

DISCUSSION

This prospective study was done to assess the distribution of oral cavity lesions among biopsy specimens received over a period of one year in the Dept. of Histopathology. Oral lesions are caused by a wide range of factors such as ageing, trauma, infections, neoplasia, systemic diseases, chemical and thermal agents, eating habits such as tobacco, betel nut, alcohol etc.

These includes a variety of lesions comprising of benign lesions such papillomas, retention cysts, premalignant conditions such as leukoplakia and malignant lesions such as oral squamous cell carcinoma and minor salivary gland tumors. In our study the age ranged from 2 to 77 years with a mean age of 45.7 years. This was in concordance with the studies conducted worldwide. In our study men had oral mucosal lesions more frequently than in females which was similar to the studies conducted by Pudasini *et al*. (2011). In our study malignant lesions were more common in males with male to female ratio of 2.4:1, which was similar to the findings of the study conducted by Iype *et al*. (2001). The peak incidence of malignant lesions were seen in the age group of 5th decade followed by the 7thdecade. Only a single case was seen in the 2nd decade as reported by Lund (1991). In our study benign neoplastic lesions accounted for 20 cases (37%) while malignant neoplastic lesions accounted for 34 cases (62.9%) which was in concordance to the study conducted by Modi *et al*. (2013). Malignant neoplastic lesions were more common in males than in females with M: F ratio of 2.4:1 which was in concordance with the findings of Pudasaini, Brar *et al*. (2011).

According to the site of development of oral cavity lesions, most common site affected was the tongue amounting to 19 out of 24 cases of SCC amounting to 79.1%. The cases confirmed as squamous cell carcinoma were graded according to the Anneroth grading system, Broder's and Bryne's from well differentiated to undifferentiated tumours according to Anneroth grading system as follows. In 1920 AC Broders initiated the first quantitative grading system for the cancer of lips. It was suggested that the tumors be graded according to the differentiation of tumor cells and keratinization. Its graded into four grades. Grade I- Well differentiated (75-100% cells differentiated), Grade II- Moderately differentiated (50-75% cells differentiated), Grade III- Poorly differentiated (25-50% cells differentiated), Grade IV-Anaplastic (0-25% cells differentiated). Our study showed SCC cases present in grade I/II and III, but no grade IV cases were seen. Jakobsson (1973) multifactorial grading system was based on the structure, differentiation, nuclear pleomorphism, mitosis, mode and staging of invasion. Based on jakobsson many modified grading systems were made by various researchers. Anneroth (Anneroth, 1984) in 1987 used a new grading system based on three parameters- nuclear pleomorphism, keratinization and mitosis for the oral SCCs. (Table 1) Pattern of invasion, stage of invasion and lymphoplasmacytic infiltration were graded in most invasive margins and scored 1 to 4.

The sum of the scores were then grouped as

Grade I- 6-12, grade II- 13-18, grade III- 19-24. The results were then compared in the metastasizing and non-metastasizing groups. In 1992, Bryne *et al* proposed a new deep invasive cell grading system based on the nuclear pleomorphism and keratinization based on the Anneroth grading system. Number of mitosis and the stage of invasion was not used as was in the previous studies. Only the cells at the invasive margin of the tumour were graded.

The total sum of the scores were grouped as

Grade I- 4-8, grade II- 9-12, grade III-13-16. The results were compared in the metastasizing and non-metastasizing groups. Around 25-50% of schwannomas occur in the head and neck with only 1% occurring in the oral cavity. Most commonly occurs in the tongue. Other sites of intraoral schwannomas are hard palate, buccal mucosa and lips. Our study included a single case of schwannoma in the buccal mucosa in a young female. Histopathologically the tumor tissue was well encapsulated and comprised of typical Antoni A and Antoni B areas (Agrawal, 2013).

Conclusion

From the present study it was observed that majority of the oral cavity lesions are benign in nature; however, malignant lesions are reported in greater frequency. Any mass lesion especially in the oral cavity should be biopsied to rule out malignancy. Submucosal fibrosis was observed in the younger age group, which is known for malignant transformation. Tuberculosis of the vestibule as a primary lesion is very rare. Schwannoma of the hard palate is also rare. Better efforts for increasing the awareness among the mass regarding the harmful effects of tobacco should be exercised. Health professionals need to play a vital role in this regard.

None of our cases had a special risk factor or habit. It was consistent with some previous studies, whereby no major risk factor (smoking and/or drinking) were present. The ability to control oral cavity malignancies depends on two cornerstones: prevention and early diagnosis. Continuing educational campaigns are needed on the local, state, and national level in order to educate the public about the risk factors and early signs/symptoms associated with these diseases. Individuals also need to be encouraged to seek regular professional oral examinations by a dentist and/or physician. Finally, health care workers must be encouraged to perform oral cavity examinations as part of their patient care regime, and to be knowledgeable about early signs of benign, premalignant as well as malignant lesions of the oral cavity.

Conflict of Interest

There is no conflict of interest**.**

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