



An Overview of Radiology and Oral Medicine

Dr Ashok Sharma¹, Dr Sumit Ghosh², Dr Parnita³, Dr Ayushman⁴

¹Professor, Department of Radiodiagnosis and Imaging, Santosh Deemed To Be University, Pratap Vihar Ghaziabad, U.P India

^{2,3&4} Senior Resident, Department of Radiodiagnosis and Imaging, Santosh Deemed To Be University, Pratap Vihar Ghaziabad, U.P India

ABSTRACT

Although oral medicine and radiography are specialties in many regions of the world, 33 nations and 22 have post-graduate programmes in these fields. Oral and facial abnormalities, especially orofacial symptoms of systemic diseases, are the focus of the field of oral medicine, which is often known as "dental medicine." The latter comprise the symptoms of neurological or psychiatric illness as well as gastrointestinal, dermatological, rheumatological, and hemological diseases. They also include autoimmune and immunodeficiency disorders. The development and expansion of oral medicine and radiography in India are discussed in this paper.

Keywords: Oral Medicine, Oral radiology, Dentistry.

INTRODUCTION

The traditional domains of health between dentistry and medicine are bridged by the dental specialty of oral medicine. Oral medicine is described as "the dental specialty positioned at the interface between medicine and dentistry and is concerned with the diagnosis and management of (non-dental) pathology affecting the oral and maxillofacial region" in international descriptions, which mirror this [1]. The newly established American Board of Dental Specialties (ABDS) in the United States has just recently recognised oral medicine as a speciality. [2] According to the American Dental Association, oral and maxillofacial radiology is a branch of dentistry and a field of radiology that focuses on creating and interpreting images and data from all forms of radiant radiation utilised in disease diagnosis and treatment. [3]

History: Specialists in oral medicine are vital to the early detection and treatment of many mouth disorders. Oral medicine has a long history that dates to the 18th century.

The father of oral medicine is thought to be London Hospital surgeon Sir Jonathan Hutchinson. Dr. William Geis of Columbia University in the United States of America created oral medicine as a separate field of study in the 1920s. In comparison to other nations, India was found to have the biggest increase in the amount of oral medicine services as measured by rising numbers of doctors practising the speciality. In India, oral medicine was first included in the Bachelor of Dental Surgery curriculum about fifty years ago. With assistance from the World Health Organization WHO, Government Dental College in Bangalore was the first dental college in India to teach oral medicine.

In 1970, the Government Dental College in Bangalore was the first to provide the Master in Dental Surgery (MDS), a two-year programme in oral medicine, radiography, and diagnostics. As a result, the Indian Academy of Oral Medicine was established on June 20, 1985, in Bangalore, under the direction of doctors BK Venkataraman and Ramachandra Reddy.

The academy was renamed the Indian Academy of Oral Medicine and Radiology at the Fifth National Conference in Chennai. The Academy now has approximately 2500 life members [4]. This essay aims to outline the difficulties that experts encounter and offers a direction for additional study in this area.

Oral Medicine: The availability and expertise of specialists in oral medicine and radiology, however, appear to be little known among medical professionals. The majority of oral mucosal lesions are referred to general dentists rather than oral medicine and radiology specialists, which results in very few referrals to dentists [5].

Oral Cancer: Oral cancer is of major concern as it is Southeast Asia primarily because of the prevalent oral habits of betel quid chewing, smoking, and alcohol consumption. The detection, diagnosis, and management of oral diseases are complex. Refinements and continued research will undoubtedly improve our ability to detect any disease at the earliest possible stage. [6] The data related to prevalence and incidence of potentially malignant (PML) and malignant lesions of the oral cavity is anybody's guess. The following could be included in the objectives for improvement in future.

1. Compiling population-based statistics on the incidence and prevalence of oral cancers and possibly cancerous lesions of the oral cavity. To conduct a survey like to the recently finished National Mental Health Survey done by the National Institute of Mental Health and Neuroscience [7], dental schools across India may be requested to adopt particular regions of the nation.
2. Smoker's exhibit increased cellular proliferation when compared to non-smokers in an oral CDx brush biopsy

for the detection of oral cancer, which is similar to the findings for cigarette smokers. It is unclear, though, whether bidi smokers are more likely than cigarette smokers to develop OSCC after a malignant change. To ascertain this, additional long-term studies comparing bidi and cigarette users with high sample sizes need to be conducted. [8,9]

Autoimmune Disorders Affecting Oral Cavity

Since a long time ago, the main treatments for oral ulcerative and vesiculobullous lesions of non-microbial origin have been either steroids or immune-modulators. There isn't yet a set process for the hierarchy of selection and application of these medications. In 2011, a Cochrane review revealed no randomised control trials (RCT) that examined the use of steroids or other therapies with a placebo for the treatment of lichen planus or oral lichenoid responses were available as a reference. Similar symptoms have been present in other oral autoimmune disorders. [10,11]

Forensic: The Latin word forensic, which meaning "before the forum," is where the word "forensic" originates. Jones claims that the forum acted as a court of law in ancient Rome since it was a venue for trials and discussions. Odontology, on the other hand, is the study of teeth or dentistry. Therefore, the Federation Dentaire Internationale (FDI) has defined forensic odontology as "that field of dentistry which, in the interest of justice, deals with the right handling and examination of dental evidence and with the proper evaluation and presentation of dental findings." [12] Due to the variation in the physical constitution of people, dental and

craniofacial radiographs are an essential assessment tool in a race, gender, and stature. The development of contemporary technologies like CT, Micro CT, MRI, and OPG has made CBCT useful in forensic odontology. [13]

We all acknowledge the reality of drug-induced diseases of the salivary glands. However, a newly released systematic review of medication-induced illnesses of the salivary glands by the participants of World Workshop on Oral Medicine VI (WWOM VI) indicated that there is very little high-quality data on the impact of medications on the salivary glands. [14-15] The majority of publications of medication-induced oral manifestations either rely on information from drug labels or adverse event reports from patients.

Oral Radiology: Point-of-service head and neck and dentomaxillofacial imaging increasingly use CBCT. In comparison to traditional CT scans, this method offers osseous structures with a reasonably good isotropic spatial resolution at a lower radiation dosage. CBCT has frequently been referred to as the "gold standard" for imaging the oral and maxillofacial region, and in the future decades, it will undoubtedly become a routine element of most practises' operations. [16]

Dental Care for Geriatric and Medically Compromised Patients [4,17]

The number of ambulatory patients with medically compromised condition seeking dental care has increased along with life expectancy and medical health care facilities. The findings of this challenge have steadily improved as a result of the multidisciplinary strategy used to solve it. The following facets of patient care are poorly covered by professionals.

- Dental problems are actively managed in an outpatient setting.
- Patient care in a hospital in-patient setting as part of a team handling medically vulnerable patients.
- Dental problems in terminally sick patients: palliative care.

CONCLUSION

The mother branch of dentistry that deals with the diagnosis and treatment of many human disorders is oral medicine and radiography. In order to raise awareness of the specialty, we must devise a proper plan of action to promote oral medicine's clinical practise and theoretical foundations among patients and all other healthcare professionals. Encourage future dentists to choose a speciality that will be helpful for diagnosis in the near future. Oral medicine and radiology are for people with an academic mindset who also want to conduct research in this field to advance the development of oral medicine and radiology.

REFERENCES

1. Schmidt-Westhausen, A M, and M M Bornstein. "Orale Medizin: Interdisziplinäre Zusammenarbeit zwischen Medizin und Zahnmedizin" [Oral medicine: a specialty placed between medicine and dentistry]. *Bundesgesundheitsblatt, Gesundheitsforschung, Gesundheitsschutz* vol. 54, 9 (2011): 1061-5. doi: <https://doi.org/10.1007/s00103-011-1329-7>
2. Scully, Crispian et al. "Oral medicine (stomatology) across the globe: birth, growth, and future." *Oral surgery, oral medicine, oral pathology and oral*

- radiology vol. 121, 2 (2016): 149-157.e5. doi: 10.1016/j.o000.2015.10.009
3. White SC, Pharoah MJ. Oral Radiology Principles and interpretation. 5th edn, 2004, p IX
 4. Shetty, Shishir Ram, Mansib M. Shaik, and Subhas G. Babu. "Oral medicine and radiology-the Indian scenario." Journal of Contemporary Medical Education 1.1 (2013): 59-61.
 5. Aditya, Amita, Shailesh Lele, and Priyam Aditya. "Need and availability of dentists and specialists in oral medicine and radiology: A survey." Journal of Indian Academy of Oral Medicine and Radiology 26.2 (2014): 158.
 6. Vyas, Tarun, Parnika Kuthiala, and Pradeep Vishnoi. "Oral cancer: Etiology and Its diagnostic aids." International Journal of Drug Research and Dental Science 1.2 (2019): 13-18. <https://doi.org/10.36437/ijdrd.2019.1.2.G>
 7. Gururaj G, Varghese M, Benegal V, Rao GN, Pathak K, Singh LK, Mehta RY, Ram D, Shibukumar TM, Kokane A, Lenin Singh RK, Chavan BS, Sharma P, Ramasubramanian C, Dalal PK, Saha PK, Deuri SP, Giri AK, Kavishvar AB, Sinha VK, Thavody J, Chatterji R, Akoijam BS, Das S, Kashyap A, Ragavan VS, Singh SK, Misra R and NMHS collaborators group. National Mental Health Survey of India, 2015-16: Summary. Bengaluru, National Institute of Mental Health and Neuro Sciences, NIMHANS Publication No. 128, 2016.
 8. Satish B, Tarun V. Application of oral CDx brush biopsy in oral cancer detection. J Dent Res Prac 2019; 1:4-6.
 9. Vyas, Tarun et al. "Quantitative analysis of AgNOR counts and pap stain in exfoliative cytology specimens of oral mucosa in bidi smokers and nonsmokers." Annals of African medicine vol. 17, 4 (2018): 210-214. doi: 10.4103/aam.aam_69_17
 10. Thongprasom K, Carrozzo M, Furness S, Lodi G. Interventions for treating oral lichen planus. Cochrane Database of Systematic Reviews 2011, Issue 7. Art. No.: CD001168. DOI: 10.1002/14651858.CD001168.pub.
 11. McMillan R, Taylor J, Shephard M, Ahmed R, Carrozzo M, Setterfield J, Grando S, Mignogna M, KutenShorrer M, Musbah T, Elia A, McGowan R, Kerr AR, Greenberg MS, Hodgson T, Sirois D. World Workshop on Oral Medicine VI: a systematic review of the treatment of mucocutaneous pemphigus vulgaris. Oral Surg Oral Med Oral Pathol Oral Radiol. 2015; 120(2):132-42.e61.
 12. Vyas, Tarun. "Forensic Odontology: An Overview." International Journal Of Drug Research And Dental Science 2.2 (2020): 1-2.
 13. Vyas T. Radiographic determination: An upcoming aid in forensic radiology. J Int Clin Dent Res Organ 2019; 11:71-5.
 14. Wolff A, Joshi RK, Ekström J, Aframian D, Pedersen AM, Proctor G, Narayana N, Villa A, Sia YW, Aliko A, McGowan R, Kerr AR, Jensen SB, Vissink A, Dawes C. A Guide to Medications Inducing Salivary Gland Dysfunction, Xerostomia, and Subjective Sialorrhea: A Systematic Review Sponsored by the World Workshop on Oral Medicine VI Drugs R D. 2017; 17(1):1-28.

15. Villa A, Wolff A, Aframian D, Vissink A, Ekström J, Proctor G, McGowan R, Narayana N, Aliko A, Sia YW, Joshi RK, Jensen SB, Kerr AR, Dawes C, Pedersen AM. World Workshop on Oral Medicine VI: a systematic review of medication induced salivary gland dysfunction: prevalence, diagnosis, and treatment. *Clin Oral Investig*. 2015; 19(7):1563-80.
16. Vyas T. Applications of CBCT in special reference to dentistry. *J Adv Med Dent Scie Res* 2017;5 (4):67-76.. doi: 10.21276/jamdsr.2017.5.4.15.
17. Vyas, Tarun, et al. "Cleft of lip and palate: A review." *Journal of Family Medicine and Primary Care* 9.6 (2020): 2621. doi: 10.4103/jfmprc.jfmprc_472_20.