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# TO STUDY COMPARING USG AGAINST OTHER DIAGNOSTIC MODALITIES E.G. CLINICAL PALPATION AND CT SCAN TAKING HPE AS GOLD STANDARD DIAGNOSTIC TECHNIQUE.

Dr. Navneet Kala (Resident)<sup>1</sup>, Dr. Jubin Sonane<sup>2</sup> (Resident), Dr. Abhinav Pandey<sup>3</sup> (Resident) &

Dr. Rajgovind Sharma<sup>4</sup> (Prof. & Head)

Dept. of Surgery, SMS, Medical College & Hospital, Jaipur<sup>1,2,3&4</sup>

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Address for Correspondence: Dr. Abhinav Pandey, Dept. of Surgery, SMS Medical College and Hospital, Jaipur Conflict of Interest: No conflict of interest.

## Introduction:

These days, the world is afflicted with various types of non-communicable diseases, which are also known as modern epidemics. Cancer is one among them. Head and neck cancer (HNC) is the sixth most common malignancy reported worldwide and one with high mortality ratios among all malignancies. The Indian subcontinent accounts for one-third of the world's burden<sup>1</sup>.

Head and neck cancer is one of the most physically and emotionally devastating cancers and often leaves the patient disabled and disfigured. They not only affect the physical health but also hit the patient mentally, emotionally and socially. Head and neck cancer refers to a group of biologically similar cancers originating from the upper aerodigestive tract. About 90% of head and neck cancers are of the squamous cell variety<sup>1</sup>. Early-stage head and neck cancers have high cure rates, but most of the patients present with advanced disease. Cure rates decrease in advanced cases, whose probability of cure is inversely related to tumor size and even more to the extent of regional involvement. Even after successful treatment, they leave the patient with physical and vocal disabilities.<sup>2</sup>

Head and neck cancers describe a range of tumors that arise in the head and neck region, which includes the oral cavity, pharynx, larynx, nasal cavity, paranasal sinuses, thyroid, and salivary glands. The worldwide incidence of head and neck cancer exceeds half a million cases annually, making it one of the most common cancers worldwide.

## **Material & Method**

All cases of squamous cell carcinoma of oral cavity admitted in Department of General Surgery (Division of surgical oncology), Plastic Surgery, Otolaryngology at S.M.S. Hospital, Jaipur from December 2012 to September 2013 who got treated primarily by surgery were included.

detailed history regarding various epidemiological factors, exposure to known carcinogens and history of any preoperative treatment was taken ruling out cases with history of neo adjuvant chemo-radiation. A detailed clinical examination was followed with regards to tumor location, tumor size, infiltration into surrounding tissues, regional lymph node enlargement and distant metastasis. Histopathological diagnosis was established with the help of biopsy from tumor. Metastasis to neck nodes was examined clinically, by USG and; CT examination done at Dept. of Radiology, SMS hospital; and compared with final biopsy report from surgically removed specimen taking it as gold standard. Histopathological examination of surgically removed specimen is carried out at dept. of pathology either of SMS hospital or SDM hospital, Jaipur.

Staging was done with help of clinical examination as well as investigations like CT scan. Treatment protocol was decided after staging and it was ascertained that patient had not received any neoadjuvant chemo radiation or down staging procedure. Type of surgical procedure was decided and preparation made according to reconstructive procedure planned.

Counselling of the patient and his family was done with respect to the functional and cosmetic consequences of surgery.

Finally a comparison of neck nodes status was done with histopathology report of node status of surgically removed specimen.

A total of 65 patients including males and females in age range of 20-72 years were selected on basis of selection criteria mentioned ahead and a cross-sectional observational study conducted.

# Patient selection criteria:

Patients are selected on basis of following criteria:

#### Inclusion criteria:

Primary SCC of the following anatomic areas<sup>8</sup> who have undergone surgery with curative intent for the same:

- Buccal Mucosa
- Lip
- Tongue
- Cheek
- Floor of mouth
- Alveolus
- Retromolar trigone
- Hard palate.

## Exclusion criteria:

- Neo adjuvant chemotherapy
- Primary or neo adjuvant radiotherapy or both
- Has not undergone any surgical procedure with curative intent;
- Advanced inoperable disease.

#### Results

Table 1: COMPARISON OF PALPATION, USG AND CT EXAMINATION WITH HP EXAMINATION

Technique.	True positive	True negative	False positive	False negative
Palpation	22(33.33%)	19(28.79%)	5(7.58%)	20(30.30%)
USG	35(53.03%)	23(34.85%)	1(1.52%)	7(10.61%)
СТ	34(51.52%)	23(34.85%)	1(1.52%)	8(12.31%)

Total patients operated-65

Total neck sides examined-66

Table 2: RESULT OF PALPATION, USG AND CT EXAMINATION

Technique	Sensitivity	Specificity	PPV (%)	NPV	Accuracy
	(%)	(%)		(%)	(%)
Palpation	52.38	79.17	81.48	48.72	62.12
USG	83.33%	95.83	97.22	76.67	87.88
СТ	80.95%	95.83	97.14	74.19	86.36

PPV-positive predictive value

# NPV- negative predictive value

# Discussion

India has the highest rates of cancers of the oral cavity as compared to any country in Asia. Oral cancers rank number one among men and number three among women in India. Oral cancer constitutes 12% of all cancers in men and 8% of all cancers among women. The Indian subcontinent accounts for one-third of the world's burden. The differing social customs are responsible for regional variations in disease. The habit of chewing betel nut leaves rolled in lime and tobacco in jarda, khaini, pan results in prolonged contact of the carcinogens with buccal mucosa & is thought to be the principal cause of oral cancers in India.

Cervical metastasis by a tumor is a firm statement of its aggressive nature. Nothing is more controversial than the management of cervical metastatic disease. It us well recognised that the presence of cervical metastasis is the most important prognostic factor in oral cavity/ head and neck SCC, accounting for 50% reduction in 5-yr survival rate for ipsilateral cervical lymph node metastasis<sup>3,4</sup> and 75% in of bilateral metastasis<sup>5,6</sup>. Therefore evaluation of cervical lymphadenopathy is important for patients with oral cavity SCC. Fortunately, great strides have been made in understanding the intricate processes related to metastatic disease. Most tumors have a predictable pattern of neck metastasis. The main routes of cervical lymph node metastasis is through the first station nodes<sup>7,8</sup> level I and II, followed by second station nodes which include the level III, IV, and V.

The present study was conducted on 65 patients from Dec 2012 to Oct 2013 in the department of surgical oncology, plastic surgery, Otolaryngology, radiology and pathology of S.M.S hospital and department of pathology of SDM Hospital. Cross sectional observational study was done. The overall profile of this study compares our data with other studies.

Sharma et al<sup>9</sup>, in their study among patients from eastern Rajasthan, concluded that prevalence of head and neck malignancies was 15%. Prevalence among male patients was higher at 20.65% while in female patients, prevalence oh head and neck malignancies was 8.92%. Carcinoma tongue was most frequent (22.3%) followed by carcinoma oropharynx (19.07%) & carcinoma larynx(14.13%).

In our study 51 (78.46%) cases were male & 14 (21.54%) cases were female with a M:F ratio of 3.64:1. Mehrotra et al (2003)<sup>10</sup> showed in their study of 303 cases that 76.57% were males and 23.43 % were females with a male to female ratio of 3.27:1. In our own institute, Shrivastava et al (2006)<sup>11</sup> in their study of 56 cases shown that 73% cases were male & 27% were females with a M:F ratio of 2.7:1 . Another study at our institute by Sharma et al<sup>9</sup> showed M: F ratio 2.22:1. Thus it is clear that the incidence of oral cancers in males is more than twice of the incidence in females. This can be explained owing to the higher intake of tobacco & alcohol in males as compared to females.

# Conclusion

USG is better than clinical palpation because of greater sensitivity, specificity and predictive accuracy in detecting metastatic cervical lymph nodes and hence guiding neck node dissection in oral cavity squamous cell carcinoma.

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