International Journal of Research and Review
www.ijrrjournal.com E-ISSN: 2349-9788; P-ISSN: 2454-2237

Original Research Article

Aspiration Cytology of Metastatic Cervical Lymph Node: A Tertiary Health Centre Based Study

Pranshu Sharma[1], Pranveer Singh Rao[2], Khushbu Talreja[3]

[1,2]Assistant Professor, Department of Pathology, Ananta Institute of Medical Sciences, Rajsamand
[3]Senior Resident, Department of Pathology, Government Medical College, Kota

Corresponding Author: Pranveer Singh Rao

ABSTRACT

Objective: the present study was conducted to assess the prevalence and cytological pattern of various metastatic cervical lymph nodes in the southern part of Rajasthan, India.
Material and Methods: The prospective study was conducted in a tertiary healthcare centre of southern Rajasthan, India during the period of 1 year from August 2018 to August 2019. 100 patients with cytologically diagnosed metastatic cervical lymph node were included in the study. Review of all cytological reports were done according to standard guidelines and the diagnosis was classified and correlated with patient age and sex to explore the pattern and association.
Results: Age of the patients' ranges from 29 to 70 years with the mean age of 54.16 years. Maximum patients (80%) were from the age group > 50 years. Among the 100 study participants, 83% were male and 17% were females (Male: Female ratio- 4.89:1). Primary site was known in 89% cases while primary was occult in 11% cases. Out of 89 cases of known primary, 32 cases had primary in oral cavity followed by 24 cases having primary in larynx. On cytological examination, squamous cell carcinoma was found to be the most common type of tumour type (71%) followed by Adenocarcinoma (20 %).
Conclusion: Fine needle aspiration cytology is an effective, economical and reliable method in diagnosing metastasis with good degree of certainty. Squamous cell carcinoma is most common type of metastatic tumour which commonly affects older individuals after the fifth decade with male preponderance.

Keywords: Metastasis, Carcinoma, Lymph Node, cytology, Cytology.

INTRODUCTION

Lymphadenopathy is a sign of inflammation, infections, primary or metastatic tumours. This is commonly seen involving the head, neck and inguinal region. [(1)] Carcinoma metastatic from the head and neck region is the most important of these and must remain prominent in the mind of the clinician. [(2)] Even though the cause of cervical lymphadenopathy may vary, enlarged cervical nodes in an elderly patient must be considered as metastatic until proved otherwise. [(3)]

Fine needle aspiration of neck lymph nodes is quick, safe, very cost effective and simple technique, well tolerated by the patients, without any complication, done on an outpatient basis and repeatable. India is eminently suited for this procedure. [(4)] Metastatic lesions confirmed by FNAC also give clue to the nature and site of primary. [(5)] A correct diagnosis helps in early management thus reducing mortality and morbidity. The present study was performed to know the prevalence of various metastatic cervical lymph nodes in our region. As there is paucity of literature on these matters from

our region, this study will highlight for the same the cytomorphological patterns of neck node metastasis.

MATERIAL AND METHODS

Nature of study and study population: The present study was a prospective study performed in the department of Pathology of Ananta Institute of Medical Sciences, Rajsamand, Rajasthan during the period of 1 year from August 2018 to August 2019. 100 slides of cytologically diagnosed metastatic cervical lymph nodes among the various suspected patients referred for FNAC were included in the present study.

Study period: 1 year from August 2018 to August 2019

Sample size: 100 cases of metastatic cervical lymph nodes

Procedure: A well informed and written consent was taken from all the study participants before starting the study. Approval from institutional ethical committee was also taken. Brief clinical history including age, sex, site, side were taken from all the participants and thorough clinical examination was also carried out. The FNAC was performed by experienced faculty using 20-24 gauze needles without local anaesthesia. Needle was inserted up to the desired depth into the lymph node and adequate quantity of cellular material was withdrawn. A minimum of two well labeled glass smears were prepared. The smears were air dried and stained with Romanowsky stain according to standard procedure. Review of all cytological reports were done according to standard guidelines and the diagnosis was classified and correlated with patient age and sex to explore the pattern and association. All the information collected from the results of present study was correlated with previous studies done in the similar field and results were compared & correlated.

Patients with the diagnosis other than metastatic lymph node and those who refused to give consent were excluded from the study.

RESULTS

100 patients with metastatic cervical lymph nodes were included in present study. Age of the patients ranges from 29 to 70 years with the mean age of 54.16 years. Maximum patients were from the age group > 50 years. (Table 1)

Table 1 Age wise distribution of the study participants

S.No.	Age-group	Number	Percentage
1	< 30 years	01	01
2	31-50 years	19	19
3	>50 years	80	80
	Total	100	100

Among the 100 study participants, 83% were male and 17% were females (Male: Female ratio- 4.89:1). Primary site was known in 89% cases while primary was occult in 11% cases. Out of 89 cases of known primary, 32 cases had primary in oral cavity followed by 24 cases having primary in larynx. (Table 2)

Table 2 Distribution of primary site of the metastatic tumour

S.no.	Primary site	Number of cases	Percentage
1	Oral cavity	32	35.99
2	Larynx	24	26.96
3	Oropharynx	11	12.35
4	Nasopharynx	7	7.86
5	Lung	7	7.86
6	Breast	6	6.74
7	Thyroid	1	1.12
8	Prostate	1	1.12
	Total	89	100%

On cytological examination, squamous cell carcinoma was found to be the most common type of tumour type (71%) followed by Adenocarcinoma (20 %). (Table 3)

Table 3 Cytological diagnosis of cervical lymph node metastasis.

S.No.	Tumour type	Number of cases	Percentage
1	Squamous cell carcinoma	71	71
2	Adenocarcinoma	20	20
3	Undifferentiated carcinoma	6	6
4	Small cell carcinoma	2	2
5	Follicular carcinoma	1	1
	Total	100	100

DISCUSSION

In present study, age of the patients' ranges from 29 to 70 years with the mean age of 54.16 years and maximum number of patients were from the age group > 50 years.

Similar results were obtained in similar studies done in the past. In a study performed by Mehrotra et al in 2005, the commonly affected age group was 50-60 years. [(6)] Ghartimagar et al studied the utility of FNAC in metastatic lymph node in 2011 and found that most commonly affected age group was > 60 years. [(4)] Similarly, in a study by Virendra T et al, the most commonly affected age group was 50-60 years. [(7)]

The male: female ratio in present study was 4.89:1. In the study by Virendra T et al the ratio was 4:1. [(7)]The ratio was 2.9: 1 in the study done by Bhattacharjee et al in 2006. [(8)] The male: female ratio was almost equal in another study done by Engzell et al in 1971 (1.07:1). [(9)]

The most common primary site for metastasis in present study was oral cavity (32%). Izhar N. Bhagwan (2007) and Karabi Kohar et al (2008) also found the oral cavity as the most common primary site for cervical lymph node metastasis. [(10, 11)] In a study performed in china by Chih Hsu et al in 1971, the most common site for cervical lymph node metastasis was nasopharyngeal carcinoma. [(12)] We all know; the incidence and mortality of nasopharyngeal carcinoma are highest in china because of their specific diet and genetic inheritance. In a study performed by Malika Afroz, the most common primary site was larynx. [(13)]

In present study, the most common type of tumour was squamous cell carcinoma (71%) followed by adenocarcinoma (20%). Other types were undifferentiated carcinoma (6%), small cell carcinoma (2%) and follicular carcinoma (1%).

In squamous cell carcinoma, tumour cells are seen arranged in sheets or scattered singly. The cells had dense cytoplasm with hyperchromatic nuclei owhile cynophilic cytoplasm with pyknotic nuclei in PAP stain. Necrotic material is often present in the background and keratinization may also be found.

In adenocarcinoma, the tumour cells are arranged in acinar or papillary arrangements or singly scattered. Cells are cuboidal to columnar with moderate amount of cytoplasm and pleomorphic nuclei with prominent nucleoli. Intracellular mucin secretion is present.

In undifferentiated carcinoma, there is pattern less solid, sheet like growth of tumour cells. There are no nests, papillae, glands, trabeculae or spindle pattern, no squamous or mucinous metaplasia, no or minimal neuroendocrine differentiation. In present study, the undifferentiated carcinomas were mainly from the nasopharynx.

Metastatic small cell carcinoma was seen in 2 cases of present study where the primary was found to be in lungs. In small cell carcinoma, the cells have scanty cytoplasm with large nuclei. Nuclei usually demonstrate the classical “salt and pepper” chromatin with indistinct nucleoli and frequent molding.

One case of metastatic follicular carcinoma with suspected primary in thyroid was also encountered in present study.

Squamous cell carcinoma has been found as the most common verity in other studies done in the past by Ustun et al, [(14)] Izhar N. Bhagwan [(10)] and Kiran Alam et al. [(15)] In contrary to our result, adenocarcinoma was the most common variety in a study performed by Ghartimagar D. et al. [(4)]

CONCLUSION

Fine needle aspiration cytology is an effective, economical and reliable method in diagnosing metastasis with good degree of certainty. Squamous cell carcinoma is most common type of metastatic tumour which commonly affects older individuals after the fifth decade with male preponderance. Unnecessary use of invasive methods like surgical biopsy can be avoided with the use of FNAC.

Conflict of interest: No conflict of interest exists. No financial relationship exists between authors and products or procedures related to the article.

REFERENCES

1. Arora B, & Beena KR. Utility of FNAC in lymphadenopathies. J of Cytology 16 (2), 61-66, 1999.
2. Jesse RH : Management of the suspicious cervical lymph node postgrad.Med.1970,48; 99-102.
3. Shah JP: Unknown primary site evaluation of the patient in Head and Neck. Cancer 1985, 283-285.
4. Ghartimagar D, Ghosh A, Ranabhat S, Shrestha MK, Narasimhan R, Talwar OP. Utility of fine needle aspiration cytology in metastatic lymph nodes. J Pathol Nepal 2011;1:92-95.
5. Davil L Kinsey. A study of metastatic carcinoma of the neck Ann Surg. 1957; 148: 366-372.
6. Mehrotra et al. Trends of prevalence and Pathological Spectrum of head & neck cancers in North India: Indian Journal of cancer 2005; 42: 89-93 http://dx.doi.org/10.4103/0019-509X.16698
7. Virendra T, Nitesh M, A. Gupta. Fine needle aspiration cytology of metastatic neck lymph nodes: a review of 100 cases. NJIRM 2013; Vol.4 (5), Sept-Oct: 76-80.
8. Bhattacharjee Abhinandan et al : Head & neck neoplasm in North-East India. 2006 Vol. 54.
9. Engzell U et al : Aspiration biopsy of metastatic carcinoma in lymph node of neck: a review of 1101 cases. Acta Otolaryngol 1971; 72: 138-147. http://dx.doi.org/10.3109/00016487109122466
10. Izhar N. Bagwan, Shubadha V. Kane, Roshni F. chinoy : Cytologic evaluaiton of the enlarged neck nodes. FNAC utility in metastatic neck disease. The internet journal of pathology, 2007, Vol. 6, No. 2
11. Karabi Kohar et al : Pitfalls in the cytodiagnosis of metastatic squamous cell carcinoma in the head and neck 2008; Vol. 25 (4) : 119-122
12. Chih Hsu C et al : Efficacy of FNA & sampling of lymph node in 1484 Chinese patient. Diagn Cytopathol 1990;6: 154-159
13. Malika Afroz et al : Metastatic necknodes â€“ a clinical study of 60 cases. Bangladesh Journal of Otorhinolaryngology 2009; 15(1) : 26-30.
14. Ustun et al cystic lymph node aspiration. Diagn. Cytopathol 2002; 27: 387-392.
15. Kiran Alam et al. Fine needle aspiration cytology, a handy tool for metastatic lymphadenopathy, 2010. Internet Journal of Pathology.

How to cite this article: Sharma P, Rao PS, Talreja K. Aspiration cytology of metastatic cervical lymph node: a tertiary health centre based study. International Journal of Research and Review. 2019; 6(10):343-346.

******