



Spectrum of Metastatic Cervical Lymphadenopathy on Fine Needle Aspiration Cytology in Greater Gwalior Region: A 6 Month Prospective Study

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ABSTRACT

Aim: This study were performed to find out the spectrum of metastatic cervical lymphadenopathy in the patients presented to the department of Pathology, G.R.M.C., Gwalior (M.P.), a tertiary care hospital. In this 6 month prospective study, a total of 116 cases were examined, there were 24 cases in which the primary origin of metastatic malignancy could not be found out. There were male predominance in the study with M:F ratio of 2.31:1. Majority of the patients were 60-80 years age group. Maximum cases (n=77) were from Oro-pharyngeal region with squamous cell carcinoma, mostly well differentiated type. This was followed by papillary carcinoma of thyroid and ductal cell carcinoma of breast. It was concluded that most prevalent metastatic tumor to cervical lymph nodes in our region is squamous cell carcinoma especially in males which is most likely due to heavy addiction of tobacco chewing and smoking in this gender.

KEYWORDS : Metastatic, Cervical, Lymphadenopathy, Squamous cell Carcinoma, Necrosis, Mucoepidermoid carcinoma, Papillary carcinoma.

Introduction:

Cervical lymph nodes are the common site of metastases for different cancers especially from Oro-pharyngeal region. Prompt clinical suspicion and the diagnosis of cervical lymph node enlargement is important as to differentiate between inflammatory lesions and metastatic or primary neoplastic tumor.

FNAC (Fine needle aspiration cytology) has now gained popularity and used vastly for the initial diagnosis and management of patients presenting with lymphadenopathy.¹ If used by proper technique and diagnosed by experienced cytopathologists, FNAC is very much favourably comparable to tissue biopsy though, biopsy still a gold standard for diagnosing the cause of lymphadenopathy . Cervical Lymph node metastasis is very common in the region of greater Gwalior region mainly due to the heavy consumption of tobacco products and alcohol. The aim of the present study is to find out the spectrum of the malignancies metastatic to the cervical lymph nodes in greater Gwalior region in the cases presented for FNAC.

Material and Method:

The present study was carried out for the duration of 6 months, (August 2015 to Jan 2016) at Cytopathology Section, Department of Pathology, Gajra Raja Medical College and JAH Group of Hospitals, Gwalior (M.P.) ; a tertiary care hospital. A total of the 116 cases were studied with suspected metastatic cervical lymphadenopathy, which came for Fine Needle Aspiration Cytology, during the period. Every patient was examined clinically, and all radiological and other investigations were concerned prior to the aspiration. Cytopathologic smears were stained with Giemsa and Papanicolaou stain as well as Hematoxylin & Eosin stains as per requirements. Inadequate smears and the cases with improper clinical history were excluded from the study. Every smear were examined by a panel of expert consultants, proper record were maintained, data gathered, compiled and analyse to make out the results.

Results:

Of the 116 cases examined with metastatic cervical lymphadenopathy, 69.8% (n=81) were males and rest 30.2% (n=35) were female (M:F= 2.31:1). [Chart no.1 about to here] .

Major age group in the study was 60-80yrs with 50% (n=58) cases, followed by 40-60 yr age group which were 40.50% (n=47) of the total 116 cases. No case was recorded from the age group less than 20 years. [Table no.1 about to be here]

55.43% (n=65) cases presented with single enlarged cervical lymph node, mostly with firm to hard in consistency, fixed to the underlying structures ,remaining 44.57% (n=51) presented with multiple enlarged nodes. 23.9% (n=28) were having history of change in voice in recent past.

In maximum number of cases 66.4 % (n=77) the primary of the metastatic cervical lymph nodes were came out to be arising from Oro-pharyngeal region, followed by thyroid 5.2% (n=06) and breasts 2.6% (n=3). Cases where no definite origin of malignancy were found out despite the thorough investigations and clinical suspicion as well as cytopathological evidences accounted to be 20.7% (n=24)[table no. 2 about to be here]

Of the total 92 cases of known primary origin, most of the cases i.e. 86 % (n=79) metastatic lymphadenopathy were of squamous cell type arising chiefly from oro-pharyngeal region followed by Adenocarcinoma. Papillary carcinoma of thyroid was the chief metastatic malignancy from thyroid origin. Ductal cell carcinoma were the common type from the breast origin and also two cases reported from salivary glands , both were of mucoepidermoid carcinoma. Small cell carcinoma lung were the main tumor metastasized from lung.

Of the squamous cell carcinoma, metastasizing to the cervical lymph nodes, maximum were well differentiated 57% (n=45), and 32.9% (n=26) were moderately differentiated followed by 10.1% (n=08) number of cases were poorly differentiated. [Chart no. 2 about to be here].

Out of total 116 cases, 80 cases (68.96%) had history of addiction of either tobacco chewing, smoking or alcohol consumption. Maximum cases gave history of tobacco/Gutkha chewing as well as cigarette/bidi smoking simultaneously. [Table no.3 about to be here]

Most striking feature with the squamous cell origin metastasis was the presence of cystic degeneration with necrosis which accounted to 53.16% (n= 42) in the present study. This feature was more often with the long history of tobacco chewing with smoking.

Discussion:

Lymph node fine needle aspiration cytology has a very important role in the diagnosis of malignant lymphadenopathies as an routine outdoor procedure in developing countries like India.²

In the present study the frequency of malignant metastasis was found to be higher in males in comparison to females (M:F = 2.31: 1). This may be because of increased incidence of various addictions in Males. Similar observations were made by Steel et al³ and Haque and Talukder⁴

A large number of cases (84.7%) in present study had metastatic Oro-pharyngeal origin malignancy. A similar result were reported by Chhotray and Acharya², and Frable WJ⁵ in their studies.

Among the metastatic tumors to cervical lymph nodes, squamous cell carcinoma was the most common tumor followed by adenocarcinoma in the present study which is similar to studies conducted by, and Pilloti et al⁶, Frable WJ⁵ and Chhotray and Acharya² where squamous cell carcinoma predominated over adenocarcinoma.

In the present study, primary site of malignancy could be identified in approximately 79.3 % of cases of metastasis with the help of FNAC and clinical data. This is similar to Facundo et al⁷ were able to find primary in 59% cases in his study.

The presence of necrosis and keratinisation is an important clue to the diagnosis of metastatic SCC, which is better appreciated on Pap stain. In the present study, majority of the cases showed cytological features of necrosis and cystic degeneration in SCC.

2 cases of small cell carcinoma lung metastatic to cervical lymph nodes showed neoplastic cells in aggregates and flat sheets with high nucleo-cytoplasmic ratio and nuclear moulding in a background of lymphocytes which was similar to the study of Pilloti et al⁶.

In the present study mucoepidermoid carcinoma of salivary gland metastatic to cervical lymph nodes was seen in 2 patients, Sheahan et al⁸ also noted that FNAC helped in diagnosis of metastatic mucoepidermoid carcinoma.

Conclusion:

In metastatic squamous carcinoma (SCC), mouth/oropharynx was the most common site of primary cancer. Hence, FNAC can play a very important role in early diagnosis and timely intervention in metastatic cancers. Also there is a firm need to educate the population of our region against the ill-effects of Tobacco /Gutkha chewing, Smoking and Alcohol consumption especially in the rural area. Also Clinicians need to be much suspected to explore the possibility of metastatic deposits in cervical lymph nodes especially with the history of any addiction.

Charts and Tables

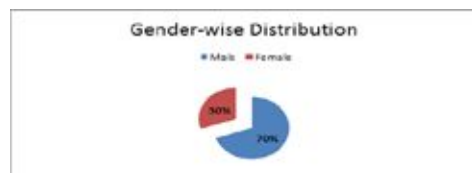


Table no. 1: Age wise distribution

S. No.	Age Group (in yrs)	Total no. Of cases	Percentage
01	<20	Nil	Nil
02	20-40	08	6.9%
03	40-60	47	40.5%
04	60-80	58	50.0%
05	>80	03	2.6%
06	Total	116	100%

Table2: Frequency of primary tumor metastasised to cervical lymph nodes.

S. No.	Origin of metastasis	Total no. Of cases	Percentage	Major type of tumor
01	Oro-Pharyngeal	77	66.4%	Squamous cell Ca.
02	Thyroid Ca.	06	5.2%	Papillary Ca.
03	Breast Ca.	03	2.6%	Ductal cell Ca.

04	Salivary Gland	02	1.7%	Mucoepidermoid Ca.
05	GIT	02	1.7%	Adenocarcinoma
06	Lung	02	1.7%	Small Cell Ca.
07	Unknown	24	20.7%	-----
08	Total	116	100%	-----

Chart No. 2 : Stage of differentiation of SCC

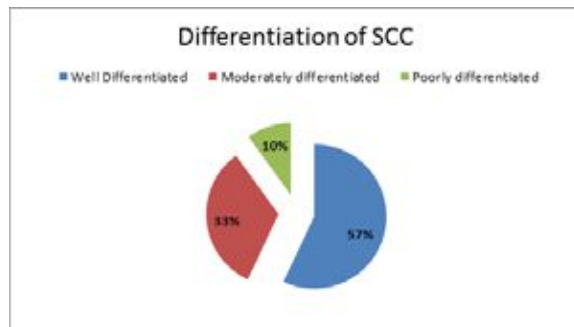


Table No. 3: Spectrum of addiction

S. No.	Type of addiction	Total no. Of cases	Percentage
01	Only Tobacco / Gutkha Chewing	12	10.34%
02	Only Smoking Cigarette /Bidi	14	12.07%
03	Only Alcohol consumption	06	5.17%
04	Smoking + Tobacco chewing	38	32.75%
05	Tobacco chewing+ alcohol	05	4.31%
06	Alcohol + Smoking	02	1.72%
07	Alcohol+ Tobacco chewing +Smoking	03	2.59%
08	No Addiction	36	31.05
09	Total	116	100%

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