

## Original Article

# Metastatic Neck Node - A Study of 60 Cases

Md. Mazibur Rahman<sup>1</sup>, Mohammad Idrish Ali<sup>2</sup>, Md. Momenul Haque<sup>3</sup>, Md. Harun-Ar-Rashid Talukder<sup>4</sup>, Masroor Rahman<sup>5</sup>, Md. Tariqul Islam<sup>6</sup>

### Abstract

**Objectives:** To find out the incidence, distribution, level and staging of cervical nodal metastasis.

**Methods:** This is a retrospective study carried out in the Department of Otolaryngology Head and Neck Surgery, BSMMU and Dhaka Medical College Hospital, Dhaka, from January 2005 to December 2005. Total 60 cases were studied. The diagnosis was made by detailed history, clinical examination, investigation. Analyzed data presented by various tables, graphs and figures.

**Results:** In this study primary lesion was identified in 88.33% cases and undetected cases were 11.7%, 81.13% were squamous lining and 18.87% non-squamous. Highest frequency of metastatic node was found with carcinoma larynx (36.66%). Male and age of 41-50 years was had highest incidence. About 43.33% had dysphagia, 38.33% had hoarseness of voice, 13.33% respiratory distress, 8.33% strider and 8.33% had referred otalgia. The disease was unilateral 81.67%, 63.33% multiple node involvement, highest involvement in level II & III and stage N<sub>2</sub> larynx was commonest site of involvement.

**Key words:** Clinical study, Metastatic neck node.

### Introduction

A common denominator to all malignancies is in their ability to metastasize. Why & how this phenomena occurs has been the subject of much research and investigation. We do

know however that metastasis is not a random event.<sup>1</sup> Some tumors have the propensity to extensive local invasion without metastasis, where as others metastasize early in their development.<sup>2</sup>

1. Assistant Professor, Department of Otolaryngology Head & Neck Surgery, NMC, Dhaka.
2. Medical Officer, Department of Otolaryngology Head & Neck Surgery, BSMMU, Dhaka.
3. EMO, Department of Otolaryngology Head & Neck Surgery, DMCH, Dhaka.
4. Residential Surgeon, Department of Otolaryngology Head & Neck Surgery, SSMCH, Dhaka.
5. Research Assistant, ENT Department, BSMMU, Dhaka
6. RS, Department of ENT, NICRH, Mohakhali, Dhaka.

**Correspondence:** Dr. Md. Mazibur Rahman, Assistant Professor, Department of Otolaryngology Head & Neck Surgery, National Medical College, Dhaka, Mobile: 01711-232350

Cervical region is very rich in lymphatic supply and containing about 300 lymph nodes which may get involved in the clinical course of head and neck malignant diseases.<sup>3</sup>

Metastatic cervical lymph nodes are the commonest cause of cervical lymph adenopathy in adult and elderly.<sup>4</sup>

The incidence of metastatic neck node is quoted in different countries are almost similar. One study in USA revealed about 90% cases of known and 10% cases of unknown primary and another study in UK showed 89.3% cases of known and 10.3% cases of unknown primary.<sup>5,6</sup> Another Bangladeshi study showed 93.2% cases of known primary and 6.8% cases of unknown primary sites.<sup>7</sup>

Metastatic cervical lymph nodes may occur from various primary sites. 85% of the tumours deposited in the neck nodes originate from above the clavicle and 15% below the clavicles.<sup>8</sup> About 90% of the supraclavicular primaries are squamous, common sites are nasopharynx, base of the tongue, tonsils, piriform fossa and larynx.<sup>9,10</sup> A small percentage of the supraclavicular primaries may be nonsquamous origin arising from thyroid gland, salivary gland and skin of head and neck region. Infraclavicular primary foci may be found in the chest (Ca lung, Ca breast) or abdomen (carcinoma of stomach, colon, ovary, testis). Unknown primary sites are fossa of Rosenmuller, base of the tongue, piriform fossa, tonsil and retromolar trigon.

In general, lesions in well-lateralized primary sites (piriform fossa, lateral floor of the mouth) tend to metastasize to the ipsilateral site of the neck and lesion in the more midline position (supraglottic larynx, base of the tongue, posterior pharyngeal wall) show higher incidence of bilateral metastasis.<sup>11</sup> A thorough knowledge of neck and neck lymph node group is essential to identify the site of primary tumour.<sup>12</sup>

Historically, more than 60% of metastatic neck node, primary sites can be identified by taking comprehensive history and initial physical examination.<sup>7,8</sup> However, further evaluation by endoscopy and biopsy is required for confirmatory diagnosis and effective management. Fine needle aspiration cytology is helpful in demonstrating metastatic carcinoma in lymph node. This technique is not valuable as a routine but may be helpful in the evaluation of a difficult clinical situation. The treatment options for metastatic neck disease are radiotherapy, surgery (a variety of procedures) or a combination of two.<sup>13</sup>

The 5 years survival rate of the metastatic neck is by approximately 50%. The survival

rate reduced further when multiple nodes are involved as extra nodal spread<sup>5</sup>. With further progression the incidence of distant metastasis also increases dramatically making the disease incurable.<sup>6</sup> So early treatment of the primary tumors and lymph nodes are essential for good loco-regional control and reduce the incidence of distant metastasis and improve survival.

Metastatic cervical lymph node is a common ailment in clinical practice in otolaryngology in Bangladesh. So, this study has been undertaken to show different types of Head and Neck cancer metastasizing to cervical lymph nodes and also to note the age and sex distribution and clinical presentation of patients with metastatic neck nodes.

#### Methods

It is a retrospective study carried out in-patient Department of Otolaryngology Head and Neck surgery, BSMMU and Dhaka Medical College Hospital, Dhaka, from January 2005 to December 2005.

Total 60 cases were selected with metastatic neck node consisting of different age and sex. Metastatic neck node with a known primary both squamous and nonsquamous origin in head and neck region and those with an unknown primary were included in this study.

After taking a comprehensive history every patient was examined thoroughly with particular emphasis to ear, nose and throat region. Neck was examined very carefully for the presence of a primary disease as well as the side, size, number and level of lymph node involvement, their consistency and mobility. All cases were advised for FNA biopsy of enlarged neck node. Cases revealed metastatic deposits in enlarged neck gland in FNA biopsy entered into this series and relevant investigations like CT scan, MRI etc. Data were collected in a pre-designed data

collection sheet and analyzed by using standard statistical methods.

### Results

Analyzed data presented by various tables, graphs and figures.

**Table- I**

*Incidence of known primary and unknown primary (n= 60)*

Type of primary tumor	No. of patients	Percentage (%)
Known primary	53	88.33
Unknown primary	07	11.67

**Table- II**

*Histopathological diagnosis of primary tumor (n= 53)*

Type	No. of patients	Percentage (%)
Squamous	43	81.43
Non squamous	10	18.87

**Table- III**

*Distribution of known primary sites (n= 53)*

Type	No. of patients	Percentage (%)
Larynx	22	36.66
Pyriform fossa	09	15.00
Nasopharynx	04	6.67
Base of the tongue	03	5.00
Buccal mucosa	02	3.33
Oral tongue	01	1.67
Nose	01	1.67
Tonsil	01	1.67
Thyroid gland	08	13.33
Parotid gland	02	3.33

**Table- IV**

*Sex distribution of metastatic neck node*

Sex	No. of patients	Percentage (%)
Male	47	78.33
Female	13	21.67

**Table- V**

*Distribution and status of involved lymph nodes (n= 60)*

	No. of patients	Percentage (%)
Distribution of nodes		
Unilateral	49	81.67
Bilateral	10	16.67
Contralateral	01	1.66
No. of node involvement		
Single	22	36.67
Multiple	38	63.33
Consistency		
Hard	32	53.33
Firm to hard	24	40.00
Firm	03	5.00
Soft	01	1.67
Mobility		
Mobile	36	60.00
Fixed	24	40.00
Size of lymph nodes		
< 3 cm	16	26.67
3-6 cm	20	33.33
> 6 cm	24	40.00

**Table- VI**

*Staging of lymph nodes (n= 60)*

Stage	No. of patients	Percentage (%)
Stage – N1	20	33.33
Stage – N2	24	40.00
Stage – N3	16	26.67

**Table- VII**

*Primary sites in bilateral neck metastases  
(n= 10)*

Stage	No. of patients	Percentage (%)
Larynx	03	30
Thyroid gland	02	20
Nasopharynx	01	10
Base of the tongue	01	10
Unknown primary	03	30

### Discussion

Metastatic neck disease is commonly encountered in our country. It is difficult to give an exact incidence of metastasis neck disease as only few studies are available in our country and most of the studies were carried out with cervical lymphadenopathy where metastatic neck node was described as one of the commonest cause of cervical lymph node enlargement in adult<sup>9</sup>.

In the present series altogether 60 cases of metastatic neck node had been studied. A Primary lesion could be identified in 53 (88.33%) cases. However primary sites remained undetected in 7 (11.7%) cases. A study in our country with the metastatic neck node shows 93.2% cases of known primary & 6.8% cases of unknown primary sites<sup>23</sup>. However, two studies carried out abroad showed similar rate of incidence. One in the Liverpool, England showed 89.3% cases of known & 10.3% cases of unknown primary and another in USA revealed about 90% cases of known & 10% cases of unknown primary<sup>14,17</sup>.

Among the primary sites 43 (81.13%) cases were seen to arise from squamous lining of upper aerodigestive tract & 10 (18.87%) cases were having a nonsquamous origin arising from thyroid gland (13.33%) & parotid gland (3.33%). The study shows that

metastasis from thyroid gland carcinoma is not a very uncommon entity. The incidence of metastatic neck node of thyroid origin in other series varied from 6.25% to 9.5%. In the present series metastatic neck node of thyroid origin was found in 8 (13.33%) cases. The higher incidence in the present series might be due to the fact that there was no selectivity for either the site of primary tumour or the histologic type.

Among the non-squamous origin, 8 (13.33%) cases were found to arise from Ca-thyroid & 2 (3.33%) cases from Ca-parotid. The study carried out with metastatic neck node at home abroad show a diverse picture. In a study with metastatic neck node in the parurent of Otolaryngology Mount Sina Hospital & Sunnybrook Medical center, Toronto, 40% cases were found to arise from Ca tongue, 20% from Ca larynx, 20% cases Ca floor of mouth, 7% from Ca tonsil, 3% from Ca palate & 10% from miscellaneous sites. The absence of selectivity for primary sites was the reason behind it as noted by them.<sup>15</sup>

Another study with metastatic neck node in Khartoum Teaching Hospital, Sudan, most common primary site was found nasopharynx.<sup>18</sup> It might be due to their social habits and genetic predisposition. Other studies showed highest incidence of metastasis from Ca-pyiform fossa<sup>16</sup>. While in another study highest incidence was seen from Ca larynx.

Fourty seven (78.33%) patients were males & 13 (21.67%) were females with a ratio being 3.5:1 of ages ranging from 20 years to 96 years, which is in fair agreement with almost all the studies revealing metastatic nodes to be more frequent in males above the age of 40. Five (8.3%) cases presented in second decades. Three (5%) of which took origin from carcinoma of nasopharynx, two (3.3%) from

papillary carcinoma of thyroid gland and one (1.6%) from the carcinoma of parotid gland not at all unlikely for these sites to present with neck node in early age. In a study carried out in our country 8 1.85% patients were found to be male & 18.75% patients to be female with the ratio being 4.3:1 and all were above 40 year of age<sup>14</sup> another study, out of 21 cases, 18 (85.7 1%) patients were male & 3(14.29%) patients were female with highest incidence in 4th and 5th decade<sup>9</sup>. Male predominance is also proved in another study being male 74.7% and female 25.3%.

The disease was unilateral in 49 (8.67%) cases, bilateral in 10 (16.67%) cases & contralateral in 1 (1.66) % case of carcinoma of larynx. This is supported by other works done with metastatic neck disease in our country with high incidence of unilateral metastatic neck node<sup>9</sup>. In a work on metastatic neck disease done by G. B snow and his team in Netherland Cancer Institute, Amsterdam, ipsilateral enlargement of lymph node demonstrated in 87% cases. That work also showed bilateral enlargement in 8.6% & contralateral enlargement in 3.6% cases.

The primary sites in bilateral neck metastases were 3 (30%) in larynx, 2 (20%) in thyroid gland, 1 (10%) case in nasopharynx, 1 (10%) in base of the tongue and 3 (30%) unknown primary.

### Conclusion

Enlarged cervical node in an elderly patient should always be considered as metastatic until proved otherwise. Because delay in the diagnosis will eliminate the best opportunity for effective treatment with curative intention.

### References

1. Fidler IJ. The biology of cancer metastasis and implication for therapy, *Current prob. Surgery* 1987; 24: 137-190.
2. Loren W, Savoury, Jack L. Gluckman, *Cervical Metastasis, Otolaryngology*, vol. 3, 3<sup>rd</sup> edition. WB Sounder's Company.
3. Al-Follouji MAR. *Cervical lymph nodes. Post graduate surgery. The candidates guides*, 2<sup>nd</sup> edition. Oxford: Butterworth-Heinemann, 1998.
4. Neck dissection: past, present and future? Ferlito A, Rinaldo A, Robbins KT, Silver CE. *ENT Clinic, University of Udine, Italy. A.ferlito@uniud.it J Laryngol Otol.* 2006; 120(2): 87-92.
5. Malleka Afroz, *Metastatic Neck Node- A clinical study of 60 cased (Dissertation BCPS)* 2003.
6. Frederick MC, Guirt, Sr. *Differential diagnosis of neck masses, Otolaryngology Head and Neck Surgery*, Vol. 3, 3<sup>rd</sup> ed. 88lp- 1686-1697.
7. Jones AS and Others. Squamous carcinoma presenting as an enlarged cervical node, *cancer* 71: 1756.
8. Martin H, Romieu C. Cervical lymph node metastasis as the first symptom of cancer, *Surg. Gynaecol Obstet* 78: 133.
9. Hadi HIA. *Cervical lymphadenopathy- A clinicopathological study of 100 cases (Dissertation BCPS)* 2000.
10. *International Journal of Oral and Maxillofacial Surgery.* 2004; 33: 253-7 (Churchill Livingstone).
11. Goepfert H. *Biology of Head and Neck Cancer, Cancer Bull.* 1987; 39(2): 73-79.
12. Ramnes GJ. *Lymph node of the Head and Neck. In: Cunningham's Text book of anatomy, 11<sup>th</sup> edition: Oxford University press, 1991; 958-964.*

13. Scott Brown's otolaryngology, Alan G. Karr, 6<sup>th</sup> edition, Laryngology and Head and Neck Surgery.
14. Walter JB and Israel MS. Spread of Malignant tumours. In General Pathology, 4<sup>th</sup> ed. London, Churchill Livingstone, 1974; 365-373.
15. Ali S, Riwari RM and Snow GB. False positive and false negative neck nodes, Head Neck Surgery, 1985; 8: 78-82.
16. Sako K. Fallibility of palpation in diagnosis of metastasis to nodes; Surg. Gynaecol Obstet, 1964;118:989.
17. Spiro RH and Other. Cervical node metastasis from epidermoid carcinoma of the oral cavity and oropharynx. Am J Surg. 1974; 128: 562.
18. Lefebvre JL, Conche-Dequeant B, Van JT. Cervical lymph nodes from an unknown tumour, Am J Surg. 1990; 160: 443-456.