

SENSITIVITY OF FINE NEEDLE ASPIRATION CYTOLOGY IN CERVICAL LYMPH NODES IN NASOPHARYNGEAL CARCINOMA

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ABSTRACT: To see the sensitivity of fine needle aspiration cytology (FNAC) in cervical lymph nodes in patients of nasopharyngeal carcinoma (NPC). 32 patients having cervical lymphadenopathy were divided in two groups: A and B. Group A includes 23 patients which were undiagnosed cases of NPC, out of these 19 patients have ENT symptoms and 04 patients having only cervical lymphadenopathy without any ENT symptom. Group B includes 09 post irradiated patients of NPC having detectable cervical lymphadenopathy. Fine needle aspiration (FNA) was performed with 22 gauge needle attached with 10 ml syringe and 128 smears were prepared (04/patient), stained with haemotoxylen and eosin (H&E) stain. Small surgical tissue biopsies were also taken to correlate the histological findings with cytological findings of the smear of same patient. Close resemblance was found between H&Estained cytological smears and tissue sections by observing under light microscope. The commonest pattern observed was undifferentiated carcinoma. FNAC of cervical lymph nodes is an important tool in the diagnosis of NPC, especially in those patients who have no any ENT symptom. FNAC is also helpful in the follow up of post irradiated patients.

KEY WORDS: FNAC, Cervical lymphadenopathy, NPC.

INTRODUCTION

Fine needle aspiration cytology (FNAC) is particularly useful in the diagnosis of metastatic malignancy in lymph nodes. It is a simple, quick and inexpensive method. It causes minimal trauma to the patient and carries virtually no risk of complications.

The nasopharyngeal carcinoma (NPC) tend to grow silently until they have become unresectable and often spread to cervical lymph nodes. The primary lesion in NPC may be asymptomatic or may produce minor or nonspecific symptoms that are ignored by the patient. such as epistaxis, postnasal drip, impaired hearing and otitis media.

In the head and neck, lymph nodes are usually noted rather promptly by the patient or by the others. Most commonly the lymph nodes are enlarged in the cervical area. The most common presenting symptom of NPC is cervical lymph node enlargement. By the time the diagnosis is established, 70 % of patients with a malignant tumor of nasopharynx have enlarged cervical lymph nodes, and 40 % present on account of cervical swelling. The nodes are firm rather than hard, and may be mistaken for tuberculosis.

Although direct aspiration biopsy of the nasopharynx is not frequent, the diagnosis of NPC by FNAC is not common. Initial diagnosis of this carcinoma is more

commonly from aspiration of metastasis to cervical lymph nodes. The purpose of the current study was to see the role of FNAC of cervical lymph nodes for the diagnosis of NPC.

MATERIAL AND METHODES

This study was conducted in the department of pathology and ENT, Peoples Medical College Nawabshah, during January 2002 to December 2003. A total number of 32 patients was included in the study, 24 males and 08 females aged between 31 to 68 years. These patients were collected from out patient department of ENT and also from private clinics. All of the patients were having cervical lymphadenopathy (size of lymph nodes ranges between 1.0 cm to 5.8 cm), the patients were divided into two groups A and B (Table-1). Group A includes 23 patients which were undiagnosed cases of NPC, out of them 19 patients have ENT symptoms and 04 patients have only cervical lymphadenopathy without any ENT symptoms. 07 patients having symptoms of ear problems including unilateral deafness without pain in ear, impaired hearing, tinnitus. and earache. 09 patients having symptoms of nose includes intermittent epistaxis, nasal speech, postnasal drip. 03 patients having discomfort in throat. The second group B includes 09 patients who were known cases of NPC and were received radiotherapy but having detectable cervical lymphadenopathy, all of them already have

lymph node biopsy for the confirmation of metastatic NPc.

FNA of cervical lymph nodes was performed with 22 gauge needle attached with 10 ml syringe and 128 smears were prepared (04 smears / patient). These smears were stained with Hand E stain. Small surgical

cytoplasm. Abnormal mitosis was seen in 75% of cases. Mature lymphocytes were seen intermingling with tumor cells in 87.5% of cases and in 12.5 %of cases they surround the clusters of tumor cells. When comparing cytoplasmic findings with those of tissue sections, both of the findings were have resemblance with each other in each case.

Table-1

Group	Type of Cases			No. of Pt	%
A	Undiagnosed cases of NPC			23	71.9
	1	Without ENT symptoms		04	
	2	With ENT symptoms		19	
		Ear	07		
		Nose	09		
	Throat	03			
B	Pt with known NPC (Post irradiated)			09	28.1
				32	100

Pt = Patient - No. = Number

tissue biopsies of same cases and from same site were also taken to correlate the histological findings with cytological findings of the smear of same patient.

RESULTS

Close resemblance was found between Hand E stained cytological smears and tissue sections by observing under light microscope. The cytological findings observed are mentioned in table-2. The cellularity in most of the smears was high (81.3 %). Tumor cells show clumps in 100% of cases, while sheets in 37.5 % and single scattered malignant cells were present in 71.9 % of cases, the cytological details of tumor cells were best observed at the edges of clumps which were single layer in thickness and revealing best cytologic preservation and were easily assessed. The oval shaped vesicular nuclei were present in 87.5 % of cases, spindle shaped nuclei were observed in 21.9% of cases and bizarre nuclei were seen in 03 patients of group B who had undergone radiotherapy. All of the cases show one to three prominent nucleoli. Cytoplasm was moderate in most of the cases (68.8 %), while 21.9% of cases show scant cytoplasm and 09.4% of cases show abundant

DISCUSSION

The NPC takes one of the three following patterns:

1. Keratinizing squamous cell carcinoma.
2. Non keratinizing squamous cell carcinoma.
3. Undifferentiated carcinoma, that has an abundant non-neoplastic lymphocytic infiltrate and this pattern, is commonly called as lymphoepithelioma.

In current study most of the cases consists of clumps with sheets of tumor cells having oval vesicular nuclei, prominent nucleoli, pale cytoplasm with ill defined borders and frequent abnormal mitosis. In most of cases the mature lymphocytes were found intermingling with tumor cells, these are the features of undifferentiated carcinoma, which was the commonest pattern found in current study, these features also correlated with the histological features of primary NPCas well as those of metastatic NPC in a lymph node biopsy. Such types of similarities are also observed by other researchers in other parts of the world.

Table 2

S. No.	Parameters		No of patients		Total patients	
			G-A	G-B	N0	%
1	Cellularity	High	20	06	26	81.3
		Moderate	2	01	03	09.4
		Low	1	02	03	09.4
2	Architecture	Clumps	23	09	32	100
		Sheets	09	03	12	37.5
		Single cells	19	04	23	71.9
3	Nucleus	Oval	21	07	28	87.5
		Round	02	00	02	06.3
		Spindle	04	03	07	21.9
		Bizarre	00	03	03	09.4
4	Prominent Nucleoli		23	09	32	100
5	Abnormal Mitosis		19	05	24	75.0
6	Cytoplasm	Abundant	02	01	03	09.4
		Moderate	16	06	22	68.8
		Scant	05	02	07	21.9
7	lymphocytes	Intermingling with tumor cells	20	08	28	87.5
		Surrounding cluster of tumor cells	03	01	04	12.5

The FNA of lymph nodes has been widely applied in the diagnosis of suspected malignant lesions. It is a safe, simple, rapid and inexpensive diagnostic procedure, which also save the patient to have an unnecessary operation, since the preferred treatment of NPC is radiotherapy. It is also noted that lymph node dissection in post irradiated cases has been associated with shortened survival.

CONCLUSION

By observing the findings of current study it is concluded that FNAC of cervical lymph nodes is an important tool in the diagnosis of NPC, especially in

those patients who have no any symptom of ear, nose and throat problem. FNA is also helpful in the follow up of post irradiated patients, because surgical dissection is not indicated in such patients.

References

- Orell SR, Sterrett GF, Walters MN, et al. Lymph nodes, in: Manual and atlas of fine needle aspiration cytology; 2nd ED. Edinburgh: Churchill Livingstone, 1992:64.
- Levitt S, Cheng L, DuPuisMH, et al. Fine needle aspiration diagnosis of malignant lymphoma with confirmation by immunoperoxidase staining. Acta Cytologica 1985; 29:895-902.

- Powers CN, Frable WJ, eds. Fine needle aspiration biopsy of the head and neck, Newton: Butterworth-Heinemann, 1996:01, 74, 33-34.
- Cotran RS, Kumar V, Collin T, eds. Robbins Pathologic Basis of Disease, 6th Ed. Philadelphia: W.B. Saunders Company, 1999:764.
- Chan MKM, McGuire D, Lee JCK. Fine needle aspiration cytodiagnosis of nasopharyngeal carcinoma in cervical lymph nodes. Acta Cytological 1989; 33: 344.
- Ho JHC: Nasopharyngeal carcinoma. West J Med 1985; 143: 70-73.
- Neel . HB m. Nasopharyngeal carcinoma. Clinical presentation, diagnosis, treatment and prognosis. Otolaryngol Clin N Am 1985; 18:478-489.
- Russell R.c.G, William's N.S, Bulstrode C.J.K, eds. Baily and love's Short practice of surgery, 23rd ED. London: Arnold, 2000: 678-79.
- Ali my, Shanmugaratnam K. Cytodiagnosis of nasopharyngeal carcinoma. Acta Cytol 1967; 11 :54-60.
- Lee RE, Valaitis J, Kalis O, Sophian A, Schultz E. Lymph node examination by the needle aspiration in patients with known or suspected malignancy. Acta Cytol 1987; 31:563-72.
- Ho mc, Lau WH, Fong M, Chan CL. Treatment of nasopharyngeal carcinoma: current status: in, Pars ad U, Albashi DV, Levine PH, Pearson GR, eds. Nasopharyngeal carcinoma: current concepts. Kuala Lumpur: University of Malaysia, 1983: 398-95.
- Cai WM, Zhang HX, Hu YH, Cu XZ. Influence of the biopsy on the prognosis of nasopharyngeal carcinoma: A critical study of biopsy *from* the nasopharynx and cervical lymph node of 649 patients. Int J Radiat Oncol Biol Phys 1983; 9:1439-44.