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Original Research Article

Study of Cervical Lymphadenopathy in Rapti Zone of Nepal by Fine Needle Aspiration Cytology

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Abstract: Cervical mass in neck region is very common. Mass may be inflammatory to neoplastic. Neoplastic mass may be benign as well as malignant form. It can be present as cervical lymph node, salivary gland lesion and thyroid lesion as well. Initially fine needle aspiration was introduced by hematooncologist Franzen in Sweden. Fine Needle Aspiration Cytology (FNAC) is simple, quick, inexpensive, minimal invasive and out-patient service technique used to diagnose different types of lesions located in the body. The present study was prospective cross-sectional study conducted in patients with FNAC of Cervical lesion at National Path Lab Collection Centre, Ghorahi, Dang, Nepal referred from General and Head and Neck Clinic from January 2016 to July 2016. A total of 96 study participants with palpable superficial cervical lesions between 17 months to 74 years of age were involved in this study. Most commonly lesions were occurred in male with 54.5%.Most common lesion in all sexes were reactive lymphadenitis with 51.5 % followed by tubercular and metastatic 12.1 %and 10.6% respectively. Predominant lesions in both sex were reactive lymphadenitis with slight male preponderance. Most of cases were below 20 year age group. Reactive lymphadenitis is the commonest cause of cervical swelling in all age group except in older age group. FNAC is quick diagnostic test for the all palpable cervical swelling. Non-neoplastic lesion was managed without surgery.
Keywords: FNAC, palpable mass, Nepal.

INTRODUCTION

Evaluation of a palpable mass is a common clinical problem and the condition is commonly encountered by the clinicians. Patient is very much anxious from palpable mass. Cervical mass in neck region is very common. Mass may be inflammatory to neoplastic. Neoplastic mass may be benign as well as malignant form. It can be present as cervical lymph node, salivary gland lesion and thyroid lesion as well [1].

Initially fine needle aspiration was introduced by hematooncologist Franzen in Sweden [2]. Fine Needle Aspiration Cytology (FNAC) is simple, quick, inexpensive, minimal invasive and out-patient service technique used to diagnose different types of lesions located in the body [3]. Diagnostic reliability of FNAC is 80-97 % [4]**.** FNAC can be both diagnostic and therapeutic in cystic swellings with very high sensitivity (90%) and specificity (95%) and lymphadenopathy[5]. FNAC done for malignant lesion by Bopagoda *et al*. which showed sensitivity and specificity were 27% and 87% respectively [6]. Similar research done in head and neck region in Nepal by Swamy *et al*. published showed the sensitivity and specificity of test was 87.5% and 100% respectively [7].

A number of studies have been performed elsewhere for the identification and evaluation of neck mass through FNAC technique. A previously published research from Nepal found that most common site of FNAC were thyroid gland (60%) followed by lymph node (20%),salivary gland (16%)and soft tissue lesion (4%) respectively [7]. Similarly, study done by Adhikari *et al*. showed commonest site were for FNAC was lymph node (55.6%) thyroid gland (30.7%), soft tissue (10.3%) and salivary gland were (3.4%) and commonest diagnosis were of each lesion was tuberculosis 36(55.4%), colloid goiter 21(58.4%), abscess 3(25%) and few of salivary gland lesion with Pleomorphic adenoma and warthin tumor [8].

Based on the above explanation, there is still the literature gap in these areas of research in Nepal. With this backdrop, the current study aimed to assess the prevalence and nature of cervical lesion in the population of mid western region of Nepal.

MATERIAL AND METHODS

The present study was prospective cross-sectional study conducted in patients with FNAC of Cervical lesion at National Path Lab Collection Centre, Ghorahi, Dang, Nepal referred from General and Head and Neck Clinic from January 2016 to July 2016. A total of 96 study participants with palpable superficial cervical lesions between 17 months to 74 years of age were involved in this study. Out of the total study participants, 30 cases were excluded from the study as these cases had anterior midline neck swelling, acellular material, special stain except performed AFB stain.

Routine FNAC was performed without any complication. Aspiration of enlarged lesion was performed by free hand using a 22-25 G needle. Both air-dried and wet-fixed slides smears were prepared. The air-dried smears were stained by Romanowsky (Giemsa stain). Wet fixed slide were stained by Papanicolau stain. Suspected tubercular lesion aspirates were stained by AFB stain. Results of FNAC were interpreted according to FNAC finding and available clinical finding using SPSS16. A written informed consent was taken from each of the participants.

RESULT

Table 1 demonstrates the sex-wise distribution of the study participants. Out of 66, slightly more than half (54.5%) were of male.

Table-1: Distribution of cervical lesion among different sex (N=66)

Sex	Frequency	Percent (%)
Male	36	54.5
Female	30	45.5
Total	66	100

Variation of cervical lesion among study participants has been presented in table 2. Slightly more than half (51.5%) had reactive lymphadenitis followed by 12.1% and 10.6% respectively, tubercular lymphadenitis and metastatic lesion. Few of the study participants had suppurative lymphadenitis, granulomatous lymphadenitis.

Table-2: Variation of cervical lesion (N=66)

Diagnosis	Frequency	Percent (%)
Tubercular Lymphadenitis	8	12.1
Reactive Lymphadenitis	34	51.5
Metastatic lesion	7	10.6
Necrotizing granulomatous Lymphadenitis	2	3.0
Suppurative lymphadenitis	6	9.1
Granulomatous Lymphadenitis	5	7.6
Cystic lesion	2	3.0
Lymphoma	2	3.0
Total	66	100.0

Sex distribution of different lesion has shown in **table 3** with more common lesion in both sex is reactive lymphadenitis 55.6% and 46.7% respectively in male and female

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Table-3: Distribution of cervical lesion in different sex

Diagnosis	Male Frequency (%)	Female Frequency (%)
Tubercular Lymphadenitis	4 (11.1)	4 (13.3)
Reactive Lymphadenitis	20 (55.6)	14 (46.7)
Metastatic lesion	3 (8.3)	4 (13.3)
Necrotizing granulomatous lymphadenitis	1 (2.8)	1 (3.3)
Suppurative lymphadenitis	2 (5.6)	4 (13.3)
Granulomatous Lymphadenitis	4 (11.1)	1 (3.3)
Cystic lesion	1 (2.8)	1 (3.3)
Lymphoma	1 (2.77)	1 (3.33)
Total	36	30

Table 4 shows most of the participants of below 20 years age group with 35 participants and dominant sex was male 21 out of 35.Most favorable diagnosis was reactive lymphadenitis.

Table-4: Variation of cervical lesion according to age group

Age Group	Sex	Diagnosis	Frequency	Percent (%)
below 20 years	Female	Tubercular Lymphadenitis	2	14.3
		Reactive Lymphadenitis	8	57.1
		Metastatic lesion	1	7.1
		Suppurative lymphadenitis	1	7.1
		Cystic lesion	1	7.1
		Lymphoma	1	7.1
		Total	14	100.0
	Male	Tubercular Lymphadenitis	3	14.3
		Reactive Lymphadenitis	16	76.2
		Granulomatous Lymphadenitis	1	4.8
		Lymphoma	1	4.8
		Total	21	100.0
20-59 years	Female	Tubercular Lymphadenitis	2	13.3
		Reactive Lymphadenitis	6	40.0
		Metastatic lesion	2	13.3
		Necrotizing granulomatous lymphadenitis	1	6.7
		Suppurative lymphadenitis	3	20.0
		Granulomatous Lymphadenitis	1	6.7
		Total	15	100.0
	Male	Reactive Lymphadenitis	4	33.3
		Metastatic lesion	2	16.7
		Suppurative Lymphadenitis	2	16.7
		Granulomatous Lymphadenitis	3	25.0
		Cystic lesion	1	8.3
		Total	12	100.0
60 years and above	Female	Metastatic lesion	1	100.0
	Male	Tubercular Lymphadenitis	1	33.3
		Metastatic lesion	1	33.3
		Necrotizing Granulomatous Lymphadenitis	1	33.3
		Total	3	100.0

DISCUSSION

FNAC is simple, rapid and minimal invasive technique to diagnose any palpable superficial swelling in body [3]. In a total of 66 cases of cervical swelling, less than one fourth were diagnosed as malignant whereas majority of them were diagnosed as non-neoplastic lesion.

Among non-neoplastic lesion slightly more than the half cases were reactive lymphadenitis, few cases were having tubercular lymphadenitis, suppurative lymphadenitis, Granulomatous lymphadenits and with equal distribution necrotizing granulomatous lymphadenitis and cystic lesion. A study performed by Kataria *et al*. also revealed the similar findings with reactive cervical lymphadenopathy (30.3%), cystic lesion (6.1%) [5]. similarly, the current study is consistent with the study from Nepal done by Shakya *et al*. [10]. Others study conducted by Adhikari *et al*., Sahid *et al*. and Khan et al were show contrasting result with present study with predominant lesion of tubercular lymphadenitis with frequency of (55.4%), (66.9%) and (52%) respectively [5, 8, 11].

If there is collection of epitheloid cells and giant cells are found then it is put under category of granulomatous lesion whether necrosis are visible or absent. If acid fast bacilli stain are positive then put under category of tubercular lymphadenitis, similarly AFB(TB) negative suppurative case were categorized under suppurative lesion [3].

LIMITATIONS

This study cannot correlate with cause and effect relationship.

CONCLUSION

FNAC is simple and quick minimal invasive technique without any complication it prevents unnecessary surgery of non-neoplastic lymphadenitis and helpful for reduction of cost of patient management.

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