ORIGINAL RESEARCH PAPER

Volume-7 | Issue-1 | January-2018 | PRINT ISSN No 2277 - 8179

INTERNATIONAL JOURNAL OF SCIENTIFIC RESEARCH

RETROSPECTIVE STUDY OF LATERAL NECK SWELLINGS IN TERTIARY HOSPITAL AND THE ROLE OF FNAC IN THE DIAGNOSIS

Medical Science

Dr.V Bhanumathi Associate professor of surgery, Mediciti institute of medical sciences, Ghanpur, Medchal distrist, Telangana

Dr.S.Venkata Ramana Rao* Professor of ENT, Mediciti institute of medical sciences, Ghanpur, Medchal distrist, Telangana *Corresponding Author

ABSTRACT

MATERIALS AND METHODS: We have undertaken retrospective descriptive study of neck swellings admitted during the period of 3 years in MediCiti Institute of Medical Sciences, Ghanpur, Medchal Dist. They are categorized into midline thyroid related swellings and lateral neck swellings of non-thyroid origin. In 5 years, between the period of 2011-2016, out of 215 neck swellings, midline thyroid swellings are 104 and 111 are lateral neck swellings of non-thyroid origin. Common neck swelling is of reactive hyperplasia of the lymph node followed by tuberculous cervical lymphadenitis.

KEYWORDS

Lateral neck swellings, FNAC, Tuberculous cervical lymphadenitis, reactive hyperplasia.

INTRODUCTION:

In surgical practice, different type of neck swellings are encountered. The clinical evaluation and the appropriate diagnosis of lateral neck masses is difficult due to heterogeneity of the lesions involved[1,2] . Lateral neck swellings contribute to significant no. of neck swellings. These neck swellings are of different origins, some are of lymph nodes, lipomas, salivary gland tumours, cystic swellings like branchial cyst, lymph cyst, neurofibromas and sweat gland adenomas[1,3]. The lymph nodal pathologies are of non specific lymphadenitis, tuberculous cervical lymphadenitis, secondaries of the neck, lymphomas etc. All these pathological entities require different types of treatment based on FNAC reports, ultrasound, CT scan study and excision biopsy report wherever necessary. Some cases like secondaries of neck and lymphomas after conclusive FNAC report does not require excision and go for appropriate management like chemoradiation etc.

The diagnosis of neck masses is based on patients history and physical examination followed by investigations like ultrasonography , CT scan , fine needle aspiration or further follow up[4,5].Fine needle aspiration is simple quick and cost effective which is used to diagnose the nature of the neck mass. It can be performed with or without the assistance of ultrasound. The technique has few contraindications and risks and ideal for ambulatory setting[1,3,6,7]. It is useful in differentiating the nature of neck mass whether inflammatory or neoplastic. If neoplastic whether it's a benign or malignant there by guides the management. Ideally FNAC may be performed for all lateral neck swellings as the histopathological examination requires further investigations ref [1]. Hence the FNAC is widely used in the management of thyroid sand breast tumors throughout the world.[8,9,10].

RESULTS:

In our study of 1,82,587 OPD patients, swellings of thyroid origin are 104 with an incidence of 0.057%. The incidence of lateral neck swellings which are 111 in this salivary gland neoplasms are excluded from the study. So the number of lateral neck swellings other than thyroid and salivary gland is 106 in number with an incidence of 0.058% of general OPD with male to female ratio 0.7:1. All these cases underwent fine needle aspiration followed by biopsy if necessary. The fnac and histology reports indicate majority of neck masses are benign neck masses 95 in number and with incidence of 89.6% with male to female ratio of 1:1.5 and malignant neck masses are 11 in number with 10.4% incidence and with male to female ratio of 1.2:1. Among benign lateral neck swellings, tuberculous cervical lymphadenitis is commonest swelling presented with incidence of 58.49% and with male to female ratio of 1:1.81 with peak age incidence of 10-19yrs followed by nonspecific lymphadenitis with incidence of 20.75%with male to female ratio 1:1.2 and with peak age incidence of 30-39yrs.

TABLE 1: ANALYSIS OF LATERAL NECK SWELLINGS:

Type of neck swelling	No. of cases	F	M	M:F	Peak age incidence	Percentage
Benign	95	57	38	1:1.5	--	89.6%
Tuberculous lymphadenitis	62	40	22	1:1.81	10-19yrs	58.49%
Nonspecific lymphadenitis	22	12	10	1:1.2	30-39yrs	20.75%
Lipoma	3	1	2	2:1	30-39yrs	2.83%
Branchial cyst	2	1	1	1:1	10-19yrs	1.8%
Lymph cyst	2	0	2	-	20-29yrs	1.8%
Neurofibroma	2	1	1	1:1	30-39yrs	1.8%
Hamartoma	1	1	0	-	60-69yrs	0.9%
Sweat gland adenoma	1	1	0	-	20-29yrs	0.9%
Malignant	1	5	6	1.2:1	--	10.3%
Non-Hodgkins lymphoma	5	1	4	4:1	10-19yrs	4.5%
Hodgkins lymphoma	3	3	0	-	40-49yrs	2.7%
Secondaries neck	3	1	2	2:1	50-59yrs	2.7%

Analysis of the results of fine needle aspiration cytology with histopathological reports indicate sensitivity of 93.5% and with specificity of 75% in case of tuberculous cervical lymphadenitis. In case of nonspecific cervical lymphadenitis sensitivity is 90% with specificity of 66.6%. In case of malignant lesions of lateral neck swellings like Non Hodgkins lymphoma, Hodgkins lymphoma, Secondaries in neck the sensitivity ranges from 60-66.6% with specificity of 50%.

Table 2: Comparative analysis of FNAC with Histo-pathology

Type of neck swelling	True positive	True negative	False positive	False negative	PPV (%)	NPV (%)	Sensitivity (%)	Specificity (%)
Tuberculous lymphadenitis	58	3	1	4	98	60	93.5	75
Nonspecific lymphadenitis	20	2	1	2	95	50	90	66.6
Lipoma	2	1	1	1	66.6	50	66.6	50
Branchial cyst	2	1	1	1	66.6	50	66.6	50
Lymph cyst	1	1	1	1	50	50	50	50
Neurofibroma	1	1	1	0	50	100	100	50
Hamartoma	1	1	1	0	50	100	100	50
Sweat gland adenoma	1	1	1	0	50	100	100	50
Non-Hodgkins lymphoma	3	1	1	2	75	33.3	60	50
Hodgkins lymphoma	2	1	1	1	66.6	50	66.6	50
Secondaries neck	2	1	1	1	66.6	50	66.6	50

Discussion:

The initial description of FNAC was given by Kun in 19th Century and perfected by Martin and Elis. Scandinavian authors described major advancements of technique of FNAC and criteria for differential diagnosis[1,11,12,13].FNAC is the first line of investigation for cervical lesions and it is minimally invasive and with good cost/efficiency ratio[14,15].the processing of FNAC is quicker than histology[16]. The lateral neck swellings which are diagnosed clinically are divided into lymphadenopathies like specific eg. Tuberculous cervical lymphade nopathy and non-specific lymphadenitis and tumors of other anatomical structures like branchial cysts, lipoma, lymph cyst, neurofibroma, hamartoma etc.

The number of lateral neck swellings other than thyroid and salivary gland is 106 in number with an incidence of 0.058% of general OPD with male to female ratio 0.7:1 compared to results reported by Manjula et al[17].Many reports found uneven data regarding sex distribution of lateral neck masses. In the extensive study conducted on 850 case Modi et al[18] found male to female ratio of 1:1.06 whereas Ahmad et al0[19] found male to female ratio of 1:2.12. Majority of lateral cervical neck swellings are from lymphnodes 95 out of 106, like both specific and non-specific lymphadenitis as well as malignant conditions like lymphomas and secondaries with incidence of 89.6%. Similar lymphnode where reported by other authors[3,18,20].

The FNAC and histology reports indicate majority of neck masses are benign neck masses 95 in number and with incidence of 89.6% with male to female ratio of 1:1.5 and malignant neck masses are 11 in number with 10.4% incidence and with male to female ratio of 1.2:1. Among benign lateral neck swellings, tuberculous cervical lymphadenitis is commonest swelling presented with incidence of 58.49% and with male to female ratio of 1:1.81 with peak age incidence of 10-19yrs followed by nonspecific lymphadenitis with incidence of 20.75%with male to female ratio 1:1.2 and with peak age incidence of 30-39yrs. Analysis of the results of fine needle aspiration cytology with histopathological reports indicate sensitivity of 93.5% and with specificity of 75% in case of tuberculous cervical lymphadenitis. In case of nonspecific cervical lymphadenitis sensitivity is 90% with specificity of 66.6%. In case of malignant lesions of lateral neck swellings like Non Hodgkins lymphoma, Hodgkins lymphoma, Secondaries in neck the sensitivity ranges from 60-66.6% with specificity of 50% The treatment of lateral cervical neck masses in case of branchial cyst, lymph cyst, neurofibroma, hamartoma involved simple excision of mass. In case of tuberculous cervical lymphadenitis lymph node excision is done followed by anti-tuberculous treatment. Lymphomas are treated by chemoradiation.

Conclusion:

The lateral neck swellings which are diagnosed clinically are divided into lymphadenopathies like specific eg. Tuberculous cervical lymphadenopathy and non-specific lymphadenitis and tumors of other anatomical structures like branchial cysts, lipoma, lymph cyst, neurofibroma, hamartoma etc. The FNAC and histology reports indicate majority of neck masses are benign neck masses with incidence of 89.6% with male to female ratio of 1:1.5 and malignant neck masses with 10.4% incidence and with male to female ratio of 1.2:1. Among benign lateral neck swellings, tuberculous cervical lymphadenitis is commonest swelling presented with incidence of 58.49% and with male to female ratio of 1:1.81 with peak age incidence of 10-19yrs followed by nonspecific lymphadenitis with incidence of 20.75%with male to female ratio 1:1.2 and with peak age incidence of 30-39yrs. Analysis of the results of fine needle aspiration cytology with histopathological reports indicate sensitivity of 93.5% and with specificity of 75% in case of tuberculous cervical lymphadenitis. In case of nonspecific cervical lymphadenitis sensitivity is 90% with specificity of 66.6%. In case of malignant lesions of lateral neck swellings like Non Hodgkins lymphoma, Hodgkins lymphoma, Secondaries in neck the sensitivity ranges from 60-66.6% with specificity of 50%.

REFERENCES

1. Johnson JT. Fine-needle aspiration of neck masses. eMedicine, Updated: Jan 2014http://emedicine.medscape.com/article/1819862-overview Accessed November 4, 2015.
2. Cerilli LA, Wick MR. Fine needle aspiration biopsies of the head and neck: the surgical pathologist's perspective. Int J Surg Pathol 2000; 8:17–28. [PubMed]
3. Soni S, Pippal SK, Yashveer B, Srivastava P. Efficacy Of Fine Needle Aspiration Cytology in Diagnosis of Neck Masses. World Articles in Ear, Nose and Throatwww.waent.org, September 2010, Vol 3–1.
4. O'Brien CJ. Tjandra JJ, Clunie GJA, Kaye AH, Smith JA, editors. Neck swellings.Textbook of Surgery 3rd ed.Oxford, UK: Blackwell Publishing Ltd; 2006. 605–612.
5. BC Decker, Inc, Roseman BJ, Clark OH. 3 Neck Mass. in ACS Principles and Practice. Vol 2: Head and Neck. 2008; 1–13.
6. Akhavan-Moghadam J, Afaaghi M, Maleki AR, et al. Fine needle aspiration: an atraumatic method to diagnose head and neck masses. Trauma Mon 2013; 18:117–121.[PMC free article] [PubMed]
7. Kim DW. Ultrasound-guided fine-needle aspiration for retrojugular lymph nodes in the neck. World J Surg Oncol 2013; 11:121. [PMC free article] [PubMed]
8. Palestini N, Papotti M, Sapino A, et al. Fine-needle aspiration biopsy of the thyroid: review of a 7-year experience. Int J Surg Pathol 1994; 1:171–175.
9. Troxel DB. Diagnostic pitfalls in surgical pathology uncovered by a review of malpractice claims: part 11. Breast fine needle aspirations. Int J Surg Pathol 2000; 8:229–231. [PubMed]
10. Tallini G, Gallo C. Fine-needle aspiration and intraoperative consultation in thyroid pathology: when and how? Int J Surg Pathol 2011; 19:141–144. [PubMed]
11. Kocjan G. Introduction and Historical Perspective, in Fine Needle Aspiration Cytology—Diagnostic Principles and Dilemmas. 2006; Berlin, Heidelberg: Springer, 1–5.
12. Ansari NA, Derias NW. Origins of fine needle aspiration cytology. J Clin Pathol 1997;50:541–543. [PMC free article] [PubMed]
13. Diamantis A, Magiorkinis E, Koutselini H. Fine-needle aspiration (FNA) biopsy: historical aspects. Folia Histochem Cytobiol 2009; 47:191–197. [PubMed]
14. Muddegowda PH, Srinivasan S, Lingegowda JB, et al. Spectrum of cytology of neck lesions: comparative study from two centers. J Clin Diagn Res [serial online] 2014; 8:44–45. [PMC free article] [PubMed]
15. O'Donnell ME, Salem A, Badger SA. Fine needle aspiration at a Regional Head and Neck Clinic: a clinically beneficial and cost-effective service. Cytopathol 2009; 20:81–86.[PubMed]
16. Kocjan G. FNAC Technique and Slide Preparation, in Fine Needle Aspiration Cytology—Diagnostic Principles and Dilemmas. 2006; Berlin, Heidelberg: Springer, 7–33.
17. Manjula K, Prasad CSBR, Gayathri BN, et al. Cytomorphological study of lateral neck swellings. J Clin Diagn Res [serial online] 2011; 5:1016–1019.
18. Modi P, Oza H, Bhalodia J. Utility and adequacy of fine needle aspiration cytology in head and neck lesions: a hospital based study. Int J Sci Stud 2014; 2:100–105.
19. Ahmad T, Naeem M, Ahmad S, et al. Fine needle aspiration cytology (FNAC) and neck swellings in the surgical outpatient. J Ayub Med Coll Abbottabad 2008; 20:30–32. [PubMed]
20. Ishar T, Gupta RK, Khajuria A. Role of FNAC in diagnosis of non-thyroidal head and neck lesions. JK Sci 2012; 14:9–13.