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DIAGNOSTIC ACCURACY OF FNAC IN CERVICAL LYMPHADENOPATHY

General Surgery

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ABSTRACT

Introduction:- To study the role of FNAC in diagnosing cervical lymphadenopathy as compared to open biopsy for histopathological examination. **Material And Methods:-** The present study is carried out at SVS Medical College And Hospital, Mahabubnagar, over a period of two years from November 2020 to March 2022. The study consists of 50 consecutive cases, diagnosis is based on pathological findings. **Inclusion Criteria -** Patients more than 12 years of age and Patients presenting with cervical lymph node enlargement. **Exclusion Criteria -** Patients less than 12 years of age, All other neck swellings other than cervical lymphadenopathy. Patients where FNAC and/or Biopsy of the node could not be carried out were excluded. **Results :-** According to Age Distribution - Out of 50 cases, maximum number of cases were in the age group of 21-30 years, Next common in the age group of 12- 20 years, Thus the second and third decade constituting 30 of the 50 cases (60%), Lowest age recorded was 12 years of age and highest 82 years of age. According to Sex Distribution - Out of the 50 cases studied, 28 cases were males and 22 cases females, The male to female ratio was 1.27 : 0.78. According to Sensitivity and Specificity - accuracy of 98.50% for tuberculous lymphadenopathy to histological correlation. **Conclusion:-** Cervical lymphadenopathy is an important disease, commonly come across, and always calls for meticulous attention, analysis and treatment. FNAC being inexpensive, quick in getting the results and easy to perform as an out patient procedure under local anesthesia, is one of the important and essential diagnostic procedure. FNAC can be deemed as a frontline investigation. If it is diagnostic it can avoid unnecessary excision biopsy for the cases which can be managed conservatively.

KEYWORDS

FNAC, Cervical Lymphadenopathy, Neck Swellings, Specificity, Sensitivity, Diagnostic Accuracy.

INTRODUCTION

Lymphadenopathy is a very common clinical manifestation of many diseases, defined as an abnormality in the size or character of lymph nodes, caused by the invasion of either inflammatory cells or neoplastic cells into the node. The lymph nodes are bean shaped discrete nodules of 1mm – 20mm.Each node is formed by a cortical sinus and a medullary sinus. It has an afferent vessel reaching it and efferent vessels leaving. Neck consists nearly 1/3rd of the total lymph nodes of the body. The analysis of lymph node enlargement in the neck is not an easy task and the diagnosis of the condition is a problem because most of the diseases resemble each other. Improper diagnosis and the treatment may convert a potentially curable disease into an incurable one. A swelling in the cervical region can be a diagnostic challenge. A study of the role of FNAC in diagnosing these conditions after correlating with a lymph node biopsy confirmation has been undertaken.

The lymphnodes which are feasible for assessment by FNAC are
Level 1 – submental and submandibular lymphnodes
Level 2 – upper jugular
Level 3 – middle jugular
Level 4 – lower jugular
Level 5 – posterior triangle
Level 6 – pretracheal and paratracheal nodes

CAUSES FOR LYMPHNODE ENLARGEMENT IN NECK

I. INFLAMMATORY

1. ACUTE LYMPHADENITIS
(a) Non-specific
(b) Specific – e.g. streptococcus, staphylococcus, cat scratch disease, measles, plague, infectious, mononucleosis, toxoplasmosis, CMV infection

2. CHRONIC LYMPHADENITIS
(a) Non-specific
(b) Specific – e.g. Tuberculosis, Syphilis, Tularaemia, Brucellosis, Filariasis, Sporotrichosis, Actinomycosis, HIV

II. Neoplastic

1. Benign
2. Malignant
(a) Primary – Lymphomas/leukaemias
(b) Secondary
– Squamous cell carcinoma from larynx, pharynx, upper 1/3rd of oesophagus, cheek, scalp, tongue
– adenocarcinoma from GI cancers, thyroid, breast, testis, kidney
– from unknown origin
– Malignant melanoma/sarcoma

III. MISCELLANEOUS

OBJECTIVES

To study the role of FNAC in diagnosing cervical lymphadenopathy as compared to open biopsy for histopathological examination.

MATERIAL AND METHODS

The present study is carried out at SVS Medical College And Hospital, Mahabubnagar, over a period of two years from November 2020 to March 2022. The study consists of 50 consecutive cases, diagnosis is based on pathological findings.

Inclusion Criteria

- Patients more than 12 years of age.
- Patients presenting with cervical lymph node enlargement.

Exclusion Criteria

- Patients less than 12 years of age.
- All other neck swellings other than cervical lymphadenopathy.
- Patients where FNAC and/or Biopsy of the node could not be carried out were excluded.

EQUIPMENT REQUIRED:-

- Standard needle used is 22 or 23 G
- Standard 10-20 ml plastic syringe and syringe holder.
- Slides, cover slips, mounting media.
- Fixatives like 95% alcohol, 10% buffered formalin and glutaraldehyde.

TECHNIQUE :

Informed consent is taken. Following local skin disinfection, needle

attatched to syringe is passed through skin into target tissue. Lesion is immobilised by two fingers. Having entered lesion, syringe plunger is withdrawn at least 2/3rds to apply a negative pressure and the needle is advanced several times back and forth quickly along the same track within the lesion. The needle is then withdrawn and the contents expelled on slides. This can be repeated 2-3 times in other directions. For most aspirates it is advantageous to prepare air dried Giemsa stained smears as well as 95% alcohol wet fixed smears for staining by Papanicolaou and H&E stains. ZN staining was done on air dried smear.

RESULTS

Table No 1 : Showing Age Distribution

AGE GROUP IN YEARS	TOTAL	PERCENTAGE
12-20	12	23
21-30	18	36
31-40	7	14
41-50	6	12
51-60	4	9
>60	3	6
TOTAL	50	100

- Shafiullah et al. had 72% cases in the age group of 12-30 years, which is comparable with the present study.
- Out of 50 cases,
- maximum number of cases were in the age group of 21-30 years
- Next common in the age group of 12- 20 years
- Thus the second and third decade constituting 30 of the 50 cases (60%).
- Lowest age recorded was 12 years of age and highest 82 years of age

Table No 2 : Showing Sex Distribution Of Cases Studied

SEX	NUMBER OF CASES	PERCENTAGE
MALE	28	55
FEMALE	22	45
TOTAL	50	100

- Out of the 50 cases studied, 28 cases were males and 22 cases females.
- The male to female ratio was 1.27 : 0.78
- Purohit S.D et al and Tripathy S.N et al are comparable with this study

Table No 3 : Showing Histopathological Diagnosis In 50 Cases

HISTOPATHOLOGICAL DIAGNOSIS	NUMBER OF CASES	PERCENTAGE
TUBERCULAR LYMPHADENITIS	25	51%
CHRONIC NON SPECIFIC LYMPHADENITIS	8	16%
REACTIVE LYMPHADENITIS	8	15%
SECONDARIES	4	8%
HODGKIN'S LYMPHOMA	1	2%
NON HODGKIN'S LYMPHOMA	4	8%
TOTAL	50	100

- Similar observations were made by Jha B.C. et al., [68] who studied 94 cases, of which tuberculosis was confirmed in 63.8% cases. The findings observed by Jindal N. et al., 69 Nataraj G. et al.,70 rora B. et al. 71 are also comparable with the present study

Table No 4 : Showing The Sensitivity And Specificity Of FNAC In Diagnosing Cervical Lymphadenopathy

HISTOPATHOLOGICAL DIAGNOSIS	SENSITIVITY	SPECIFICITY
TUBERCULOSIS	91%	100%
CHRONNIC NON SPECIFIC LYMPHADENITIS	84.6%	86.4%
MALIGNANT SECONDARIES	88%	100%
LYMPHOMAS	90%	100%

The study done by Gupta K.A. (1990) has also reported accuracy of 76.78% for tuberculous lymphadenopathy to an histological correlation.

A similar study done by Bhargava P has reported accuracy of 98.50% for tuberculous lymphadenopathy to histological correlation.

The study done by Sarda AK reported accuracy of 96.00% for tuberculous lymphnadenopathy.

DISCUSSION

- Majority of the patients (73%) were between 12-40 years age group.
- Out of the 50 cases studied, 28 cases were males and 22 cases females with a male to female ratio was 1.27 : 0.78
- All cases were taken for Fine Needle Aspiration Cytology (FNAC), but in 4 cases FNAC was inconclusive.
- In the present study the sensitivity for various lesions are as below.
- Tuberculosis-91% Chronic Non-Specific Lymphadenitis 84.6% Malignant secondaries- 88%, Lymphomas- 90%
- Out of the 25 histopathologically confirmed cases of tuberculous cervical lymphadenitis, a diagnosis of tuberculosis was made in 21 cases by FNAC.
- The other 4 cases were diagnosed as chronic non specific lymphadenitis.
- Thus among the lesions affecting neck lymph nodes tubercular etiology was the most common.

FNAC

- rapid diagnosis by FNAC can shorten or avoid hospital admission
- speed a patient's route to an appropriate specialist.
- FNAC can be learnt relatively quickly
- Requires no expensive equipment.
- The technique is relatively painless for patients with minimal morbidity
- Local anaesthetic is not generally required.
- The ability to provide rapid diagnosis has undeniable economic saving
- Method of choice for patients who are anaesthetic risks.
- For cysts and abscesses, the technique can be both diagnostic and therapeutic
- In cases of metastasis of unknown origin, FNAC is useful adjunct to diagnostic procedures and can point to primary depending upon the cell type
- In patients with enlarged lymph nodes and previous documented malignancy FNAC can obviate the further surgery performed merely to confirm the presence of metastasis.

EXCISION BIOPSY

Open biopsy followed by histopathological examination is the final answer for the diagnosis of the lymphadenopathy.

Limitations

poor patient compliance
consumption of time
co-operation of anesthetist & surgeon
risk of anaesthesia and surgery
it distorts the surgical planes and may increase risk of induction of tumour spread especially in metastatic upper and middle cervical lymph nodes which are potentially curable with radiotherapy or node dissection

CONCLUSION

- Cervical lymphadenopathy is an important disease, commonly come across, and always calls for meticulous attention, analysis and treatment.
- FNAC being inexpensive, quick in getting the results and easy to perform as an out patient procedure under local anesthesia, is one of the important and essential diagnostic procedure.
- FNAC can be deemed as a frontline investigation.
- If it is diagnostic it can avoid unnecessary excision biopsy for the cases which can be managed conservatively.
- If FNAC is negative, it does not rule out the disease and should be followed by open biopsy for histopathological confirmation.

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