

Fine Needle Aspiration Cytology Findings in Lymphnodes of Hiv Patients

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Abstract:

Back Ground: Fine needle aspiration cytology findings in lymphnodes of HIV patients.

Aim: The aim of the study is to find the various fine needle aspiration cytology findings in lymphnodes of HIV patients.

Material And Methods: Retrospective studies done from 2014 to 2015 for a period two years.

Results: Total 100 cases were reported out of 100 cases, 62 are males and 38 are female.

Conclusion : Lymphadenopathy is one of the clinical manifestation of HIV. Fine needle aspiration cytology is an useful tool to identify the cases of lymphadenopathy and there by allow the clinician to segregate the cases for further evaluation.

Key Words: FNAC, Lymphnode, HIV patient

I. Introduction:

Acquired Immunodeficiency Syndrome caused by Human Immunodeficiency virus infection is one of the major public health problem. It is a major pandemic in South East Asian Countries.(Ref1 }The epicenter for HIV/AIDS pandemic in South East Asia.(Ref 2)Lymphnode involvement is the earliest sign to occur in HIV infected individuals as the virus primarily effects the lymphocytes. It is seen in all stages of HIV infection and remains the most consistent sign throughout the course of the disease.(Ref 3)The purpose of present study is to find the various cytological patterns of lymphnode in HIV infected patients and segregation of HIV infected lymphadenopathy for further evaluation.

II. Materials And Methods

This study includes a total of 100 fine needle aspirates obtained retrospectively from patients who came to our pathology department who are reactive for HIV by Elisa with lymphnode enlargement during the period of Jan 2014 to Dec 2015. The patients who are reactive for HIV by Elisa with clinically palpable lymphnode both male and female patients of all age group are included in the study. The patient who are non reactive HIV are excluded, disposable 27-22 gauge needle having 30-50 mm length attached 5-20 m disposable plasticsyringe which gives adequate negative pressure is used. Dry, clean,glass slides which are free from grease are used for smearing,90% ethanol in cop lin jar is used as fixative. The smears are stained with Hematoxylin and Eosin stain.

III. Results

Table – 1 Age distribution of HIV

| Age in years | Number | Percentage(%) |
|--------------|------------|---------------|
| 0-10 | 0 | |
| 11-20 | 7 | 7 % |
| 21-30 | 29 | 29 % |
| 31-40 | 44 | 44 % |
| 41-50 | 17 | 17 % |
| 51-60 | 1 | 1 % |
| > 60 | 2 | 2 % |
| | 100 | |

Among the 100 cases the youngest patient was 11 years old and the oldest patient was 63 years old. The common age group affected was 31-40 years.

Table – 2 Sex distribution of HIV

| Sex | Number | Percentage (%) |
|--------|------------|----------------|
| Male | 62 | 62 % |
| Female | 38 | 38 % |
| | 100 | |

Among the 100 cases males (62%) are commonly affected than females (38%).

Table – 3 Age and Sex distribution of HIV

| Age in years | Male | | Females | |
|--------------|-----------|-----|-----------|-----|
| | No | % | No | % |
| 0-10 | -- | -- | -- | -- |
| 11-20 | 4 | 4% | 3 | 3% |
| 21-30 | 15 | 15% | 14 | 14% |
| 31-40 | 27 | 27% | 17 | 17% |
| 41-50 | 14 | 14% | 3 | 3% |
| 51-60 | 1 | 1% | 0 | 0% |
| > 60 | 1 | 1% | 1 | 1% |
| | 62 | | 38 | |

Among the 100 cases males are more commonly affected than females. Among the males the predominant age group affected was 31-40 years. Among the females the predominant age group affected was 31-40 years.

Table – 4 Region of Lymphnodes Involved

| Region of Lymphnodes | Number | Percentage(%) |
|----------------------|------------|---------------|
| Cervical | 65 | 65% |
| Axillary | 15 | 15 % |
| Inguinal | 4 | 4 % |
| Sub mandibular | 4 | 4 % |
| Sub mental | 2 | 2 % |
| Sypraclavicular | 10 | 10 % |
| | 100 | 100% |

Among the 100 cases 65% have involvement of cervical group. The next predominant site involved in Axillary node followed by supraclavicular lymphnode.

Table – 5 FNAC findings in Lymphnodes of HIV patients

| FNAC findings | Number | Percentage(%) |
|---------------|------------|---------------|
| Tuberculosis | 68 | 68% |
| Reactive | 9 | 9% |
| Sappurative | 18 | 18% |
| Lymphoma | 2 | 2% |
| Metastasis | 3 | 3% |
| | 100 | 100% |

Tuberculous Lymphadenitis was the most common pattern observed in FNAC. This pattern seen in 68 Cases. The next common pattern observed is sappurative Lymphadenitis.

Table –6 Patterns of Tuberculosis in FNAC

| Pattern | Number |
|---------------------------------------|-----------|
| Caseating Granulomatous Lymphadenitis | 30 |
| Granulomatous Lymphadenitis | 26 |
| Cold Abscess | 12 |
| | 68 |

Among 68 cases of Tuberculous Lymphadenitis the most common pattern observed is caseating granulomatous Lymphadenitis followed by granulomatous Lymphadenitis.

Table – 7 Age & Sex wise distribution of Tuberculosis

| Age in years | Male No. | Female No. | Total |
|--------------|----------|------------|-------|
| 0-10 | 0 | 0 | 0 |
| 11-20 | 2 | 5 | 7 |
| 21-30 | 7 | 10 | 17 |
| 31-40 | 17 | 10 | 27 |

| | | | |
|--------------|-----------|-----------|-----------|
| 41-50 | 11 | 1 | 12 |
| 51-60 | 1 | 0 | 1 |
| > 60 | 4 | 0 | 4 |
| Total | 42 | 26 | 68 |

The most common age group affected is 31-40 years. More common in males followed by female.

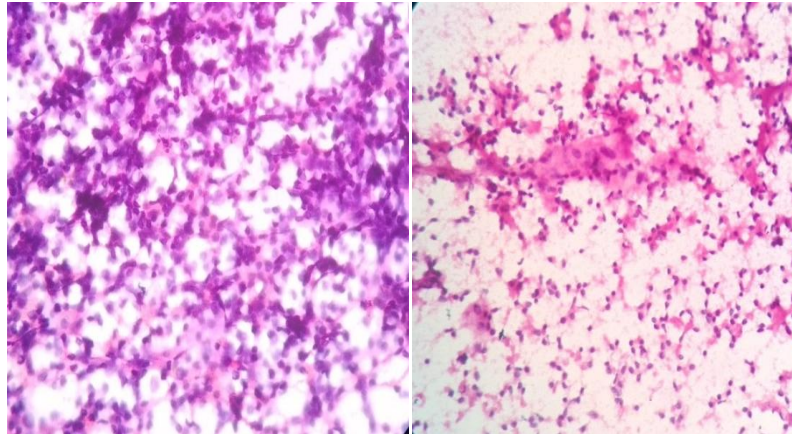


Figure::1 H&E stain 100X showing neoplastic Lymphocytes in lymphoma

Figure::2 H&E stain 400 x showing Epithelioid cells in Tuberculosis.

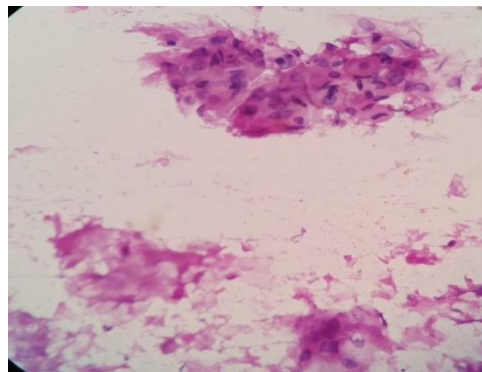


Figure::3 H&E stain 400 x showing plemorphic cells
Secondary deposit from squamous cells carcinoma

IV. Discussion

A clinical study was under taken to study the FNAC findings in Lymphnode of HIV patients. In this study 100 HIV positive cases are included. This study demonstrated the utility of fine needle aspiration cytology of Lymphnode in the diagnosis and segregation to aid in the management. Among the cases the younger are 13 years and older are 62 years. The commonest age group affected is third decade of life followed by second decade. Out of 100 patients 62 are males and 38 are females. The male to female ratio is 1.63 : 1. In the study done by Shobana etal and Bates etal (Ref⁴) the males are commonly affected than females. It is inferred that males in their reproduction age groups are more commonly affected than females. In our study Cervical Lymphnodes are commonly involved. This was similar to study observed by Bates et al, Parikh V. Ret al (Ref⁵), Vanisri etal (Ref⁶) and Shenoy et al (Ref⁷). The causes of Lymphadenopathy in our study.

| | | | |
|--------------|---|-----|-------|
| Tuberculosis | - | 68% | |
| Reactive | - | 9% | |
| Sappurative | - | 18% | |
| Lymphoma | - | 2% | |
| Metastasis | - | 3% | |
| | | | ----- |
| | | | 100% |
| | | | ----- |

Comparison of Results of FNAC in Various Studies

| Causes of Lymphadenopathy | Parikho R. et al 2012 | Vani Sri et al 2008 | Present Study |
|---------------------------------|-----------------------|---------------------|---------------|
| Tuberculous infection | 40.54 % | 58.33 % | 68% |
| Acute sapparative lymphadenitis | 27.03 % | 2.70 % | 18 % |
| Reactive lymphadenitis | 18.92 % | 36.10 % | 9 % |
| Lymphoma | 2.70 % | 2.70 % | 2 % |
| Metastatic deposits | Nil | Nil | % |

In our study as well as in the study performed by Parthik V. Ret al and Vanisri et al Infections caused by mycobacterium tuberculosis is the most common cause in HIV patients with lymphadenopathy. This is because of increased prevalence of tuberculosis in our country and also because of the defective Immune function in patients with HIV. Tuberculous lymphadenitis observed in 68 cases. It is mainly in third decade. Males are commonly affected than females. The smears of tuberculous lymphadenitis is grouped in to three categories.

- 1) Caseating granulomatous lymphadenitis - 30
- 2) Granulomatous lymphadenitis - 26
- 3) Cold abscess - 12

Comparison of patterns of tuberculosis observed FNAC in various studies :

| S.No. | Pattern of tuberculosis | Author and year of study | | | |
|-------|---|--------------------------|--------------------|------------|---------------|
| | | Parikhu R. et al 2002 | Vanisri et al 2008 | Guru et al | Present study |
| 01. | Smears with caseating granulomatous lymphadenitis | 40% | 50% | 46.87 | 30% |
| 02. | Smears with epithelioid granulomas | 26.67 | 30% | 3.10% | 26% |
| 03. | Caseous necrosis | 33.33 | 20% | 45.03 | 12% |

In our study the smears with caseating granulomatous lymphadenitis is the most commonest pattern. It is similar to study observed by Parikhu R. et al, Vanisri et al and Guru et al where the caseating granulomatous lymphadenitis is the predominant pattern. In the present study the next commonest pattern is smears with epithelioid granulomas. Acute sapparative lymphadenitis is the second common lesion followed by reactive lymphadenitis. It is similar to study conducted by Parikhu. Ret al. In the present study two cases are diagnosed as lymphoma. This was similar to study observed by Parikhu. Ret al and Vanisri et al. In the present study three cases are diagnosed as metastatic deposits one is from squamous cell carcinoma. In Guru et al study there are three cases of metastatic deposits. All are adenocarcinoma deposits. In the study conducted by Parthik U. Ret al and Vanisri et al there are no cases of metastasis.

Summary

Total 100 patients are included in the study. Out of 100 cases 68 are male patients and 32 are female patients. Cervical group of lymphnodes are commonly involved. Tuberculous lymphadenitis is the predominant lesion. Caseating granulomatous lymphadenitis is the most common pattern in tuberculous patients.

V. Conclusion

Lymphadenopathy is one of the clinical manifestations of HIV. Fine needle aspiration cytology is a useful tool to identify the causes of lymphadenopathy and thereby allows the clinician to segregate the cases for further evaluation. This study revealed five causes of lymphadenopathy in HIV patients. These are tuberculous lymphadenitis, reactive lymphadenitis, sapparative lymphadenitis, metastatic deposits and lymphoma. Fine needle aspiration cytology is a useful screening tool for evaluating the cause of lymphadenopathy. Thus FNAC eliminates the need for surgical excision. It allows early treatment for specific conditions and thereby reduce morbidity and mortality.

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