

ROLE OF FINE NEEDLE ASPIRATION CYTOLOGY FOR THE DIAGNOSIS OF TUBERCULOSIS AND FREQUENCY OF ITS PRESENTATION AS COLD ABSCESS IN LOWER SINDH

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ABSTRACT

This study was carried out to evaluate the role of Fine Needle Aspiration Cytology (FNAC) for the diagnosis of Tuberculosis and to estimate the frequency of its presentation as cold abscess in lower Sindh.

A total number of 73 patients were included in this study. These patients were all referred to a private clinic for FNAC of swellings in lymphoid regions, chest wall, Abdomen, breast and lower back. Duration of study was six months from January to June 2013. Fine needle aspiration was done and smears were made for cytopathological diagnosis. All patients were clinically followed up to see the response to treatment.

Age range was 2 to 70 years. Mean age being 29 years. Lesions were more common in females (72.60 %). Out of 73 patients majority n=26 (35.26 %) presented with cervical lymphadenopathy, n=11 (15.06%) presented with a supraclavicular mass, n=10 (13.70 %) had submandibular swelling and n=06 (8.21%) had axillary lymphadenopathy. Other sites included preauricular / retro parotid areas, chest wall swelling and breast, each accounting for 4 (5.48 %) cases. Less common sites were Lumbar area on back, posterior auricular area and swelling on thumb, n=1 each (1.36 %). Cytopathological analysis showed n=30 (41.10 %) diagnosed as Tuberculous lymphadenitis while n=23 (31.51 %) were labeled as cold abscess, n=17 (23.29%) were reported tuberculosis with extensive Caseation necrosis and n=3 (4.10%) were reported as Tuberculous Mastitis. All patients were put on ATT with clinical follow up.

Fine needle aspiration is a very useful, cost effective method for early and rapid diagnosis of tuberculosis and cold abscesses. This obviates the need for incisional / excisional biopsy and patients can directly be put on ATT with strict clinical follow up.

Key Words: Fine needle aspiration cytology, Role, Tuberculosis, Cold Abscess.

INTRODUCTION

Tuberculosis is a disease which is present world-wide but is prevalent in developing countries and is claiming many lives in India and Pakistan.¹ Majority of the patients suffer from pulmonary or intestinal tuberculosis.² Many patients present with enlargement of cervical, axillary or inguinal lymph nodes^{3,4} while some present with cold abscesses in neck, groin and chest wall.⁵ Rarely calvarial tuberculosis can present as cold abscess of the scalp.⁶ The diagnostic modalities include Radiology, Mantoux test, Serological diagnosis,

Sputum examination, body fluid examination and FNAC followed by biopsy if FNAC is not conclusive.⁷ Many studies have been carried out to estimate the frequency of pulmonary and extra pulmonary tuberculosis^{3,4} and efforts are being made to control its spread¹ but its frequency seems to be increasing and more patients are presenting with lymphadenopathy and cold abscesses. We carried out this study to evaluate the role of FNAC for early diagnosis of Tuberculosis and to study the frequency of the disease presenting as cold abscess.

METHODOLOGY

A total number of 73 patients were included in this study. All patients were referred to a private FNAC clinic in Hyderabad, Sindh, Pakistan between January

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to June 2013. The duration of study was 6 months. A detailed history was taken with clinical examination and findings were recorded on a printed Performa. Fine needle aspiration was carried out and a cytopathological diagnosis was made. Amount of necrotic material aspirated from cold abscesses was also recorded.

RESULTS

The age range was 2 to 70 years with an average age of 29.58 years. The youngest patient was a two year old female child with a cold abscess on front of chest wall and the oldest patient was a 70 year old male presenting with a supraclavicular mass reported as Tuberculosis with extensive Caseation necrosis on FNAC. Majority of the patients 35.62% presented between 21 to 30 years of age while few patients presented in old age groups. Table 1 shows the number of patients in various age groups.

Out of 73 patients 53 (72.60) were females while 20 (27.40%) were males. This indicates that in our set up Tuberculosis is more common in females.

Most common site of involvement was cervical lymph nodes 35.62% while the second common site was supraclavicular lymph nodes 15.06%. Among the common extra-lymphatic sites mass on chest wall or breast lumps were common sites each accounting for 5.48%. Lymph nodes were involved in 60 (82.19%) patients while the extralymphatic sites accounted for 17.8% of cases. (Table 2)

A total of 30 (41.10%) cases were reported as Tuberculous Lymphadenitis. These showed tiny bits of caseous material, epithelioid cells and chronic inflammatory cells. 23 (31.51%) were reported as Cold Abscess. All of these showed masses of caseous material, epithelioid cells and chronic inflammatory cells mixed with neutrophils on a proteinaceous background. 17 (23.29%) were reported Tuberculosis with extensive Caseation

TABLE 1: AGE DISTRIBUTION

Age group	No. of patients	Percentage
0-10	05	06.85%
11-20	16	21.92%
21-30	26	35.62%
31-40	14	19.18%
41-50	10	13.69%
51-60	01	01.37%
61-70	01	01.37%
Total	73	100%

TABLE 2: DISTRIBUTION ACCORDING TO THE SITE OF LESION

Site of lesion	No. of cases	Percent-age
Cervical Lymph Node	26	35.62%
Supraclavicular Lymph Node	11	15.06%
Submandibular Lymph node	10	13.70%
Axillary Lymph Node	06	08.21%
Retroparotid Lymph Node	04	05.48%
Swelling on chest wall	04	05.48%
Breast Lump	04	05.48%
Upper thigh / Groin	02	02.73%
Post. Auricular Lymph Node	01	01.36%
Swelling Thumb	01	01.36%
Lumbar area on Back	01	01.36%
Suprasternal Notch	01	01.36%
Abdominal Lymph Node	01	01.36%
Inguinal Lymph Node	01	01.36%
Total	73	100

TABLE 3: DISTRIBUTION ACCORDING TO CYTOPATHOLOGICAL DIAGNOSIS

Diagnosis on FNAC	No. of patients	Per-centage
Tuberculous Lymphadenitis	30	41.10%
Cold Abscess	23	31.51%
Tuberculous Lymphadenitis with Extensive Caseation Necrosis	17	23.29%
Tuberculous Mastitis	03	04.10%
Total	73	100

Site of cold abscess	No. of patients	Percent-age
Supraclavicular area	05	21.73%
Submandibular area	04	17.40%
Front of Chest wall	03	13.04%
Neck (mid cervical)	03	13.04%
Upper Thigh / Groin	02	08.69%
Inguinal area	01	04.35%
Parotid area	01	04.35%
Breast	01	04.35%
Suprasternal Notch	01	04.35%
Lumbar area (Back)	01	04.35%
Axilla	01	04.35%
Total	23	100

necrosis. These showed large masses of caseous material with chronic inflammatory cells and epithelioid cells. (Table 3)

Majority of the cold abscesses were found in supraclavicular and submandibular areas. The amount of necrotic material aspirated was between 5ml. to 500 ml. From cervical area and chest wall the volume of aspirate was less as compared to the groin and lumbar area. Three of the patients were referred by attending consultant surgeon for repeat aspiration to reduce the discomfort and to prevent surface ulceration. These patients had large masses at groin, lumbar and supraclavicular areas. Swellings on front of chest wall and suprasternal notch were unusual sites probably extension from pulmonary Tuberculosis. (Table 4)

DISCUSSION

The incidence of tuberculosis as reported by World Health Organization in a global tuberculosis report shows 231 cases per 100,000 people in Pakistan while in some European countries the incidence is 3-8 people per 100,000 people. This is a very high incidence even as compared with India (181/100,000 people).¹¹ Efforts are being made for its early detection and early treatment.⁷ Laboratory findings are inconclusive in majority of the patients while FNAC provides early diagnosis for cervical lymphadenopathy.

Our study shows the usefulness of FNAC for the early diagnosis of extra pulmonary tuberculosis. It is a rapid, cost effective method and patients can be put on ATT with clinical follow up. This obviates the need for a biopsy. Our study shows that the age group most vulnerable to be between 21 to 30 years while other studies carried out in Pakistan show a similar age group of 20-40 years.⁸ In our study Tuberculosis was more common in females. Other studies also show a higher frequency in females while in India and European countries it is more common in males.⁹ The most common site for extra pulmonary Tuberculosis is lymph nodes accounting for 60% of cases majority being cervical lymph nodes. This is a much higher incidence as compared with another study carried out in northern Pakistan which shows 35.8% lesions in lymph nodes. Tuberculosis presenting clinically as cold abscess in our study accounts for 31.51% of cases while other studies show a lower incidence of 13.6% of cases as paravertebral abscess⁹ and 10% presenting with neck abscess.¹⁰ This indicates that a large number of patients

in lower Sindh are presenting with cold abscess. Our study shows FNAC as a very useful technique for the early diagnosis of tuberculosis at extra pulmonary sites and patients were directly put on ATT with clinical follow up. Another study shows confirmed diagnosis on FNAC in 82% of cases while in 18% a biopsy was done for confirmation of diagnosis.¹⁰

It was concluded that FNAC is a very rapid, cost effective, painless procedure for the early diagnosis of extra pulmonary tuberculosis and it obviates the need for a biopsy in most of the patients. A trial of ATT followed by excision biopsy is advocated if the symptoms do not subside. Present study also shows a high frequency of tuberculosis presenting as cold abscess.

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