



SUBCUTANEOUS FUNGAL ABSCESS MIMICKING BENIGN NEOPLASM : SERIES OF CASES

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ABSTRACT

BACKGROUND: Subcutaneous fungal lesions may clinically present as an abscess or Subcutaneous nodules. They usually present with history of trauma or thorn prick. We present 37 such fungal infections which were clinically suspected as benign neoplasm. FNAC plays an important role as first line investigation in the diagnosis and helps in early treatment.

METHODS AND MATERIAL: This is a retrospective and prospective study conducted for a period of 20 months between January 2017 to August 2018 in the Department of Pathology, KAKATIYA MEDICAL COLLEGE/MGM, Warangal.

All the cases were subjected for Fine Needle Aspiration Cytology and stained routinely with Hematoxylin and Eosin; special stains like PAS was done for all cases to demonstrate fungal elements; Material was sent for Microbiological culture and biopsied sections were processed and sent for Histopathological examination where ever feasible. We have analysed and tabulated the data based on clinical, occupational, cytomorphological features.

RESULTS: Among the 37 cases studied, a slight female preponderance was observed. Age group ranged from 40-75 years. Majority of them i.e 28/37 are agricultural labors

CONCLUSION: FNAC plays a very important role in the diagnosis of subcutaneous fungal infections.

KEYWORDS : Subcutaneous nodules, Fungal infections, H and E, PAS,

INTRODUCTION:

Subcutaneous fungal infections are common in tropical and subtropical countries like India. They often occur following traumatic penetration of causative fungi. The lesions are usually localised and present as non tender swellings thereby clinically mimicking benign lesions. They are diagnosed by cytology, cultures and histopathology.

OBJECTIVES:

Our aim is to present 37 such cases with clinical suspicion of benign neoplasm along with review of literature.

METHODS AND MATERIALS:

This is a retrospective and prospective study conducted between January 2017 to August 2018, in MGM hospital, Warangal.

We had 37 such cases who had a prior clinical suspicion of benign neoplasm. All these cases were subjected to Fine Needle Aspiration Cytology. Smears were stained routinely with Hematoxylin and Eosin. Special stains like Periodic Acid Schiff (PAS) was done for better appreciation of fungal elements. Material was sent for Microbiological culture and ,biopsied tissue processed for Histopathological examination where ever feasible. The demographic, clinical, cytomorphological details were collected and analysed.

Results : Case reports:

- The patients' age group was ranging from 40 to 75 years.
- Majority of them, that is 28/37 were Agricultural workers.
- 29/37 had a previous history of thorn prick irrespective of occupation.
- There was a slight female preponderance.
- 9/37 were Diabetics.

Occupation

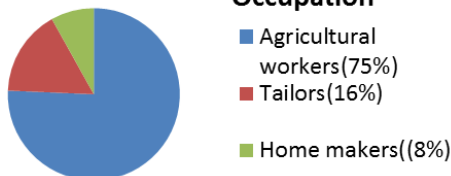


Chart 1

All of them presented with a non tender, slow growing, soft to cystic mass on extremities, measurements ranged from 1x1 to 3x3 cms. Duration of symptoms ranged from 1 to 3 years.



Fig 2

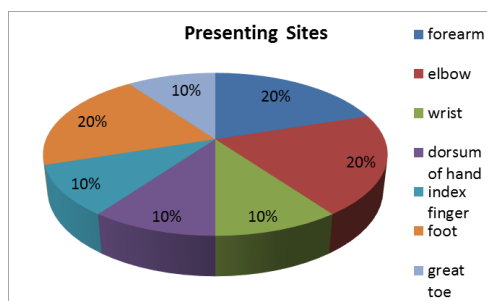


Chart 2

Upper limbs are more involved than the lower limbs. Of the 37 cases; 13 cases were clinically diagnosed as Keratinous cysts, 11 as Lipomas, 7 as Ganglions and 6 as Dermoid cysts

Microscopy:

- On FNAC purulent material / pus was aspirated from all the cases. On H & E staining, the cytosmears revealed degenerative polymorphs, lymphocytes, multinucleated giant cells, fibrinous strands, macrophages and fungal elements on a necrotic background.
- PAS staining enhanced the fungal elements with branching hyphae, some of them showed septations. One of the smears showed brown to black pigmentation with necrotizing granulomatous inflammation.

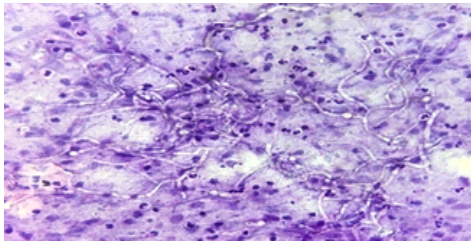


Fig 3 BRANCHING SEPTATE FUNGAL HYPHAE ON NECROTIC BACKGROUND: H&E 200X

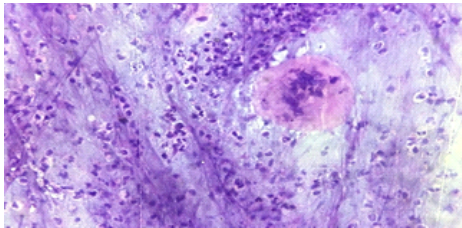


Fig 4 DENSE NEUTROPHILIC COLLECTION AND A FRAGMENT OF FUNGAL HYPHAE WITHIN THE CYTOPLASM OF MULTINUCLEATED GIANT CELL AND INFLAMMATORY CELLS: H&E 200X

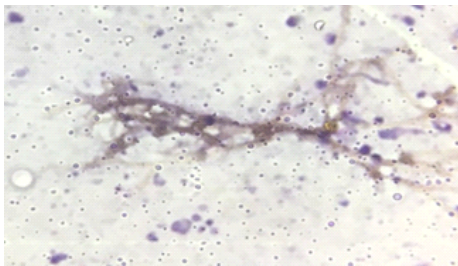


Fig 5 PIGMENTED HYPHAE: H&E 400X

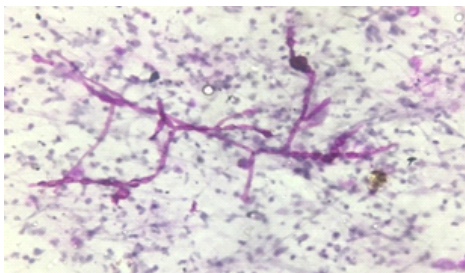


Fig 6 ENHANCED FUNGAL HYPHAE: PAS STAIN

HISTOPATHOLOGY:

- 2/37 biopsied specimens were processed and were sent for histopathologic examinations.
- H and E stained sections revealed capsulated lesion composed of fibrocollagenous tissue with dense neutrophilic infiltrate, histiocytes, multinucleated giant cells and areas of necrosis. one

- of them was non pigmented and one showed pigmentation.
- PAS staining on biopsied specimen revealed septate branching fungal elements.

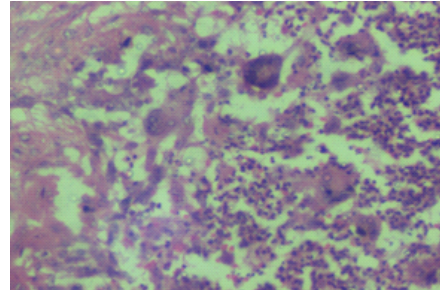


Fig 7 H AND E STAIN 400X: PERIPHERY OF THE ABSCESS SHOWING FOREIGN BODY TYPE OF MULTINUCLEATED GIANT CELL WITH NEUTROPHILS.

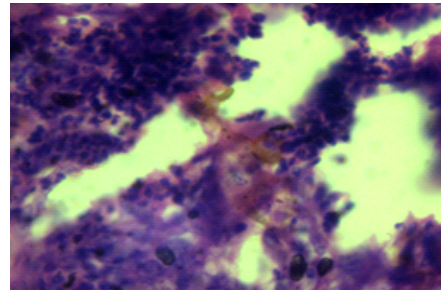


Fig 8 DENSE NEUTROPHILIC INFILTRATE WITH PIGMENTED FUNGAL HYPHAE

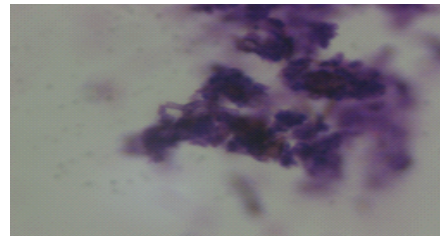


Fig 9 PAS STAIN 400X: NON PIGMENTED BRANCHING HYPHAE

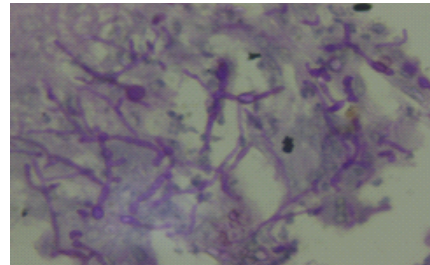


Fig 10 PAS STAIN 400X: SEPTATE BRANCHING FUNGAL HYPHAE

Microbiology:

- KOH mounting was done in cases with suspicion and positive cases were sent for culture.

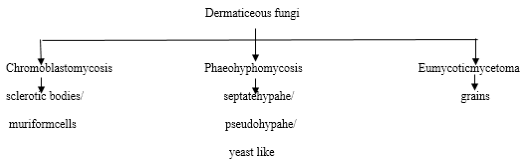


Fig 11 KOH MOUNTING: ELICITING FUNGAL ELEMENTS

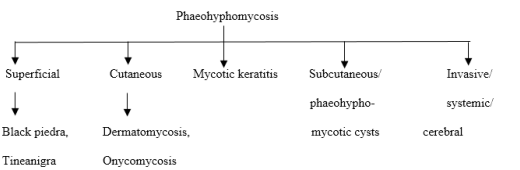
- Out of 13 cases, 9 of them showed dermaticeous fungi
- 7 with hyphae, yeast like growth, probably phaeohyphomycosis.
- 2 with black pigmentation, septate hyphae probably phaeohyphomycosis.(pigmented)
- 4 with septate hyphae, non pigmented, hyalophomycosis.

DISCUSSION:

Subcutaneous fungal cysts are mostly preceded by penetration injury. Most common Subcutaneous mycoses are Dermaticeous fungi, Zygomycosis, Hyalophomycosis, Sporotrichosis, Rhinosporidiosis.



Phaeohyphomycosis was introduced by Ajello in 1974, classified by McGinnis in 1983, modified by Rippon



Patients are usually adults. Clinically present with asymmetric, asymptomatic, well defined, soft to cystic swellings. The cases were clinically thought to be benign neoplasms.

Table 1

S. no	Authors	No. of. cases	Clinical presentation (no. of. cases)
1.	Present study	37	Keratinous cyst(13) Lipoma(11) Ganglion(7) Dermoid cyst(6)
2.	Latha K. Abraham et al.,	7	Subcutaneous nodules(7)
3.	Gayathri Priyadarshini et al., ²	8	Cystic lesions(8)
4.	Ziefer and Connor ³	25	Cysts
5.	Kempson and Sternberg ⁴	7	
6.	O'Donnell et al., ⁵	9	Cyst(8) Recurrent ulcer(1)
7.	Sheik et al., ⁶	21	Cyst(21)
8.	Sharma et al., ⁷	23 (review)	Cyst(3) Abscess(2) Ulcer(7) Scaly lesion(3) Verrucous growth(1) Sinus(1) Warty plaques(1) Keratotic, macerated(2) Papulo plaques(1) Nodule(2)

FNAC from all these revealed fungal elements and were related with PAS and microbiological cultures to identify the organism. This helps in early intervention and management. Histopathology is confirmative

Table 2

	Our study	Latha K Abraham ¹	Ziefer and Connor ³	Kempson and Sternberg ⁴	Gayatri et al ²
Age	40-75yrs	60-80yrs	-	-	-
Thorn prick history	29/37	-	4/25	-	-
Diabetes history	9/37	-	-	3/7	-
Site	26/37-on upper limbs, 11/37-on lower limbs.	-	3/4 th were on hands and feet.	-	-
no. of. cases subjected to FNAC	37/37	1/7	-	-	2/8
No. of cases subjected to Histological examination	2/37	7/7	-	-	8/8

- FNAC revealed fungal elements and was related with PAS and microbiological cultures to identify the organism. This helps in early intervention and management.
- Cultures are confirmative. HPE may also help in diagnosis.
- Jaiswal et al¹⁰ have described the role of FNAC in subcutaneous fungal lesions. FNAC is a simple, fast, minimally invasive, and cost effective method to differentiate between benign neoplasms and fungal lesion. There by helping in early intervention with anti fungals and avoiding unnecessary usage of antibiotics or excisions.

CONCLUSION:

- Fungal etiology should be considered in the differential diagnosis of all chronic suppurative; granulomatous /non granulomatous lesions especially presenting on extremities with/without a prior history of thorn prick.
- FNAC serves as diagnostic tool in such cases, cultures help in further confirmation, allowing early intervention with antifungals thereby avoiding unnecessary surgery.
- Our study reiterates the importance of FNAC.

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