

Original Research Article

Study of Fungal Lesions Presenting as Forearm Swelling

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Abstract

Background: Subcutaneous swellings clinically present as soft tissue mass, keratinous cysts or abscess and some follow trauma. Here we studied 26 forearm subcutaneous swellings of which, six cases of fungal lesions were diagnosed.

Material and Methods: It is a prospective study conducted for a period of four months between October 2019 to January 2020 in Department of pathology, Government Siddhartha Medical College, Vijayawada. FNAC was done on all cases and stained with Haematoxylin and Eosin, special stains like Periodic Acid Schiff (PAS) was used where ever necessary. Data was analysed and tabulated based on the clinical and cytological features.

Results: Six out of 26 were positive for fungal elements and maximum showed Candida Species.

Keywords: Fungal abscess; Forearm swelling; PAS.

Introduction

Fungal infections are more common in subtropical and tropical countries. Fungal infections are more in India as it is a Sub tropical country.¹ They are most common in humid climates, rather than arid areas. They most often result after some penetrating injury or trauma.² They are usually localised and nontender, and clinically mimic benign lesions. Diagnosis is made by Cytology and Histopathology.

Aim: Study of subcutaneous swellings with FNAC and clinical correlation.

Objectives:

1. To perform FNAC on all cases of subcutaneous swelling.

2. To correlate with clinical features.
3. To correlate with Histopathology, and to do special stains.

Materials and Methods

This is a prospective study conducted between October 2019 to January 2020. In the department of Pathology, Siddhartha Medical College, Vijayawada. We have 26 cases presented with chief complaints of swelling on forearm. FNAC was done for all cases, smears were made and stained with Haematoxylin and Eosin, special stains like PAS was done for further confirmation and to study the morphology of the fungal elements. Clinical and cytomorphological features were collected and analysed.



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Results

In four months study period we encountered 26 cases of forearm subcutaneous swelling.

- Of 26 cases, six cases (23.07%) are positive for fungal elements, four of six shows candida species and the remaining two were positive for *Aspergillus*, most commonly involved were women (Four out of six).
- The patients age has fallen between 43 to 79 yrs.
- Out of four women two were home makers and one of the remaining two was agricultural worker, the later was sanitation worker for Primary School.
- Both male patients were agricultural workers by occupation.
- Out of 26 cases 11 are known diabetic patients and 2/11 are positive for fungal elements.

Chart 1: Occupation of those positive for fungal elements.

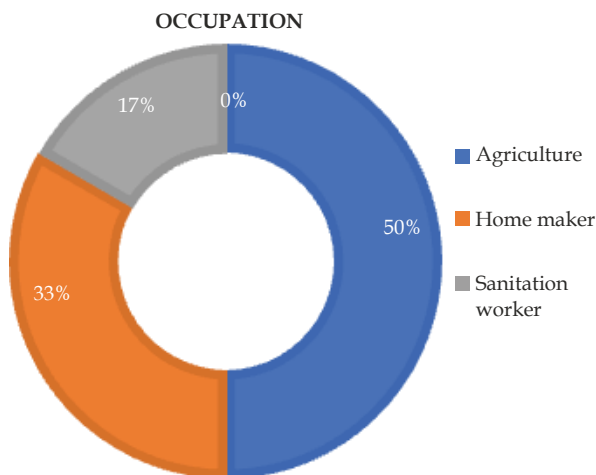


Table 1: Cytological diagnosis of all cases & the cases positive for fungal elements.

S. No.	Cytological Diagnosis	No. of Cases	Total Positive for Fungal Elements	Diabetic patients Positive for Fungal Elements
1.	Abscess	7	4	1
2.	Lipomas	6	0	0
3.	Keratinous cysts	5	2	0
4.	Ganglions	4	0	1
5.	Dermoid cysts	4	0	0
Total		26	6	2

Table 2: Species of fungal Positive cases elements.

S. No.	Fungal Cases	No of Cases (%)
1.	Candida species	4/6(66.7%)
2.	Aspergillus Species	2/6(33.3%)
3.	Total positive	6/26(23%)

Discussion

In four months study period we encountered six fungal lesions, presented as subcutaneous swellings. Patients are asymptomatic and presented with chief complaint of forearm swelling. FNAC was done and smears are prepared and stained with Haematoxylin and eosin.

Microscopy

Aspirated purulent material and slides were made, and H and E stain was done, the smears showed degenerative polymorphs, multi-nucleated giant cells, lymphocytes, fibrinous strands, fungal elements against necrotic background.

- PAS stain was done on all the cases and 6/26 were positive for fungal elements.
- Of six, four cases were positive for *Candida* species. *Candida* shows wide morphological phenotypes, most species those invading tissue forms both pseudo hyphae and true hyphae, pseudo hyphae are actually chains of blasto-conidia that are not separated from one another.³ True hyphae have no constrictions at the septa.

Remaining two cases show morphological features of *aspergillus*. *Aspergillus* has septate hyphae with dichotomous branching at 45 degrees angle.

- Histopathology was done and correlated Age group of the present study is 43 to 79 years, where Latha K Abraham⁴ it was 60 to 70 years.

11/26 were diabetic, where Kempson and Sternberg⁵ study showed three out of seven patients with diabetes.

Gayathri priyadarshini et al⁶ has showed six out of eight (75%) as *Hyalohyphomycosis* (*aspergillus*), where its two out of six(33.3%) in our study.

FNAC is simple, fast, cost effective method to demonstrate fungal elements with the help of PAS.⁷

Jaiswal et al⁸ described the role of FNAC in subcutaneous swellings.

In present study most common species found is *Candida* and followed by *Aspergillus* which is similar to Kempson and Sternberg Etal where 23% (3/7) have showed fungal elements and all of them are *Candida* species.

Guptha et al⁹ showed 19.9% (9/47) fungal positive cases of them 77.7%(7/9) cases

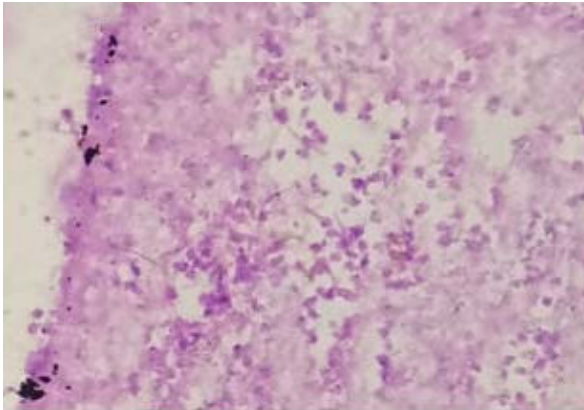


Fig. 1: Histopathology Positive for fungal elements (H & E stain 40X).

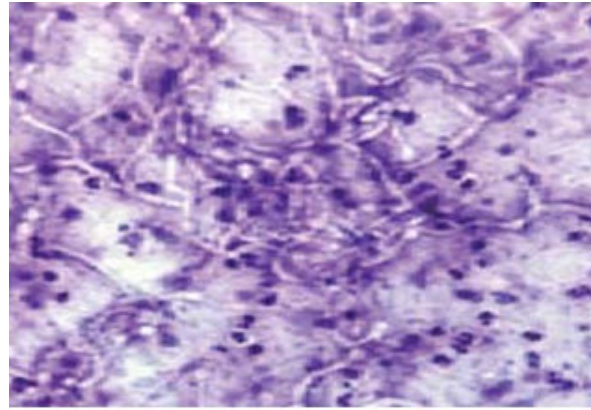


Fig. 2: Cytology (H & E stain 10X).

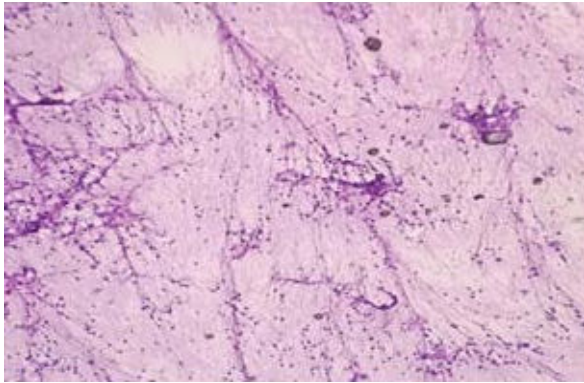


Fig. 3: Cytology, positive for fungal elements(H&E).

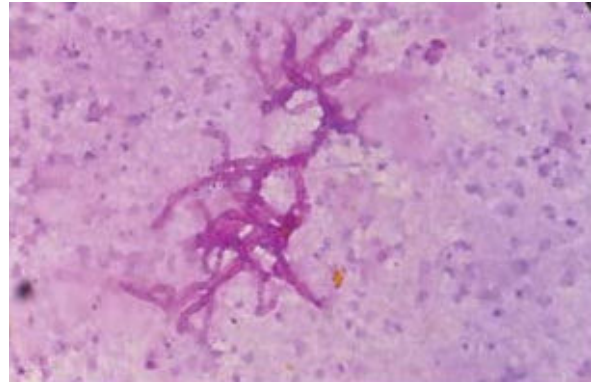


Fig. 4: Aspergillus positive for PAS 40x.

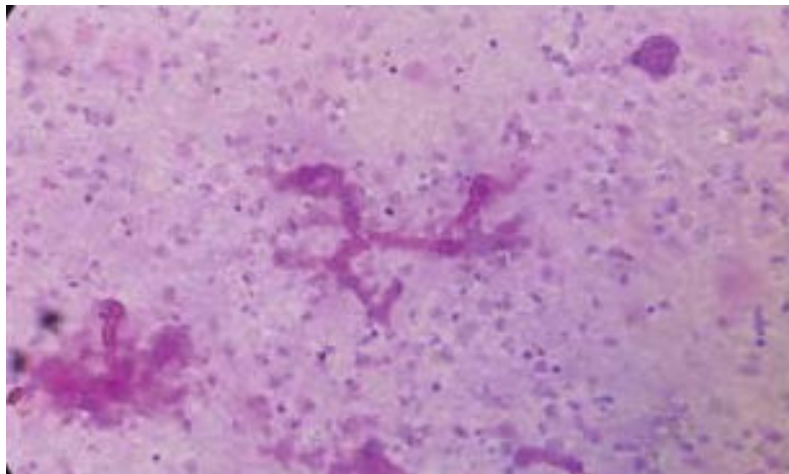


Fig. 5: Candida positive for PAS (40X).

showed Candida and 33.3%(2/7) cases showed Aspergillus which are in support to present study results. Dorko et al study¹⁰ showed 21.1%(7/34) fungal positive cases and all of them showed Candida species.

Conclusion

- Fungal etiology should be considered as differential diagnosis of all suppurative lesions, especially forearm swellings irrespective of trauma history.
- FNAC serves as diagnostic tool in such cases for early intervention and proper treatment, thereby avoiding surgery.

- Our study emphasize on importance of FNAC.

References

1. Sharma NL, Mahajan V, Sharma R C, Sharmaa. Subcutaneousphaeohypomycosis in India.
2. O' Donnell Pj, Hutt MS Subcutaneouspheomycosisa histopathological study of nine cases.
3. Larone's Medically important fungi, thomas J. Walsh M.D, Randall . Hayden, Davise H. Larone.
4. LathaK Abraham, ElizabethJoseph, Sunitha Thomas, Anna Mathai: Subcutaneous phaeohyphomycosis: a clinicopathological study.
5. Kempson RL, Sternberg WH Chronic Subcutaneous abscess caused by pigmented fungi.
6. Gayathri priyadarshini, Renu G'body Varghese, Manjri phansalkar, Anitha Ramdas, Authy K, Thagaih G: subcutaneous fungalcysts masquerading as benign lesions.
7. Kempson RL, Sternberg WH Chronic Subcutaneous abscess caused by pigmented fungi.
8. JaiswalS Vij M, Prasad N, Kaul A, Marak RS, Pandey R: Diagnostic pitfalls in cytological diagnosis of subcutaneous fungal infections in renal transplant receipients.
9. Dorko, E.; Baranova, Z.; Jenca, A.; Kizek, P; Pilipcinec, E; Tkacikova, L Diabetes millitus and candidiasis.
10. Guptha, A; Guptha, A, Varma, A. Candida glabarata candidemia: an emerging treat in critically ill patients Indian J. Crit Med.

