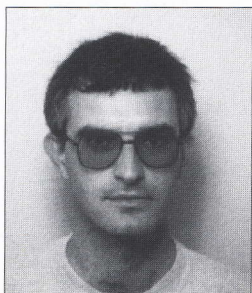


Rapid Cytological Diagnosis of Skin Diseases in the Family Physician's Office

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Curriculum Vitae

Dr Amichai was born 33 years ago in Israel and qualified as a medical doctor at the faculty of medicine of the Technion Israel (1990). During four years of residency he has published 30 papers in medical journals. He has also presented papers at national and international conferences.

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Summary

Tzanck smear is a useful test which can be easily performed and interpreted by the family physician for the rapid diagnosis of several skin diseases. This simple technique is explained and evaluated.

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Introduction

Cytologic diagnostic studies reported by Tzanck in 1947 are used widely by physicians with access to pathologic services.¹ Tzanck smear can be used in the rapid diagnosis of skin diseases including infections, especially viral, bullous diseases and skin malignancies.

Methods

This simple technique, known as the Tzanck smear, was summarised by Blank.¹ One should gently uncover the blister and remove any excess purulent material. The base must be scraped very gently, either by a flat bladed probe or with a dull scalpel. The material obtained should be smeared on a clean slide. It is important not only to avoid gross purulent contamination but also excessive bleeding. After the material has been placed on the slide, it is fixed to the slide by gently placing it in a bath containing 90% alcohol for 30 minutes. Alternatively, the material can be fixed by carefully spraying the surface of the slide with hair-spray

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which contains approximately 80% ethanol. The slide is stained with the standard Papanicolaou reagents and is then examined by light microscope under low and high magnification to search out the fields of diagnostically important material and to learn the general character of the lesion. The cytologic details can be seen under high power, or in special circumstances under oil immersion. Permanent fixation can be made by clearing with xylol and cover slipping.^{1,2}

Cytological Findings

Cytologic studies are most useful in the diagnosis of viral diseases, especially of the herpes group. The characteristic findings is giant multinucleated epithelial cells (Fig 1). This procedure is especially useful when the clinical appearance is not typical in cases of non-mucosal herpes simplex, generalised herpes zoster and early lesions of varicella. Unfortunately, it is impossible to differentiate between these diseases by cytologic technique alone as all of the diseases of the herpes group have identical cytological findings.^{1,3,4}

The cytologic diagnostic procedure also has much value in rapid diagnosis of molluscum contagiosum, especially when the clinical appearance is not classical. The diagnosis is made by the presence of regular, large oval eosinophilic bodies (Fig 2). The Shelly's procedure can also be performed, by squashing the pasty core of the lesion between two microscope slides, staining it and then looking for the virions.⁵ In other infections of the poxvirus group, such as orf⁵ and vaccinia⁶, eosinophilic intracytoplasmic inclusion bodies are seen during the early stage of the diseases.

The diagnosis of leishmaniasis is

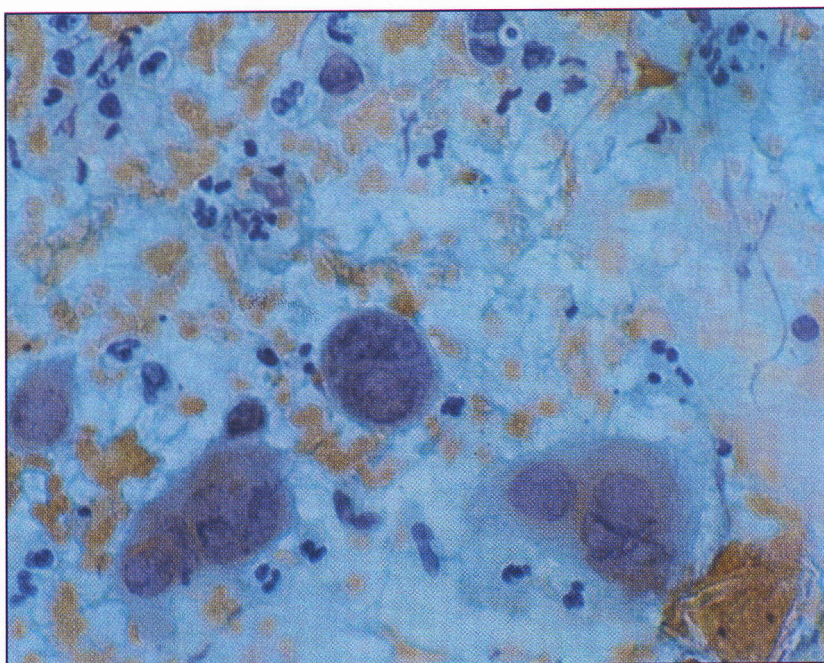


Fig 1 – Multi-nucleated giant cells in herpes.

established by demonstrating the parasite in Giemsa-stained smears and touch preparations, showing large macrophages which are filled with numerous leishmania organisms (Leishmania-Donovan bodies) which appear bright red⁶ (Fig 3).

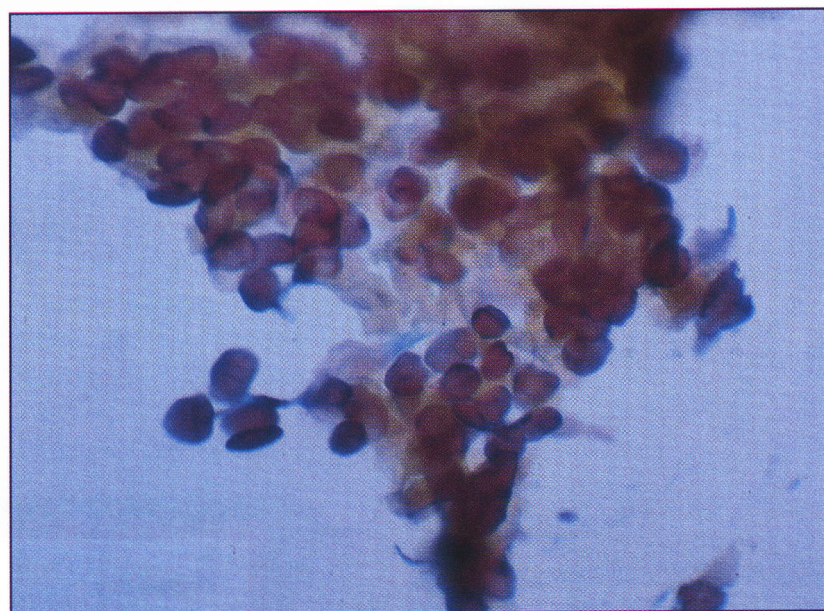


Fig 2 – Large oval eosinophilic bodies in molluscum contagiosum.

Pemphigus is a blistering autoimmune disease in which cytologic examination is sometimes useful. Examination of an early blister can show rounded acantholytic cells with large hyperchromatic nucleoli and homogenous cytoplasm and represent detached epidermal cells. In other

blistering diseases such as bullous pemphigoid and dermatitis herpetiformis the cytologic diagnosis is less valuable. Furthermore, in all the autoimmune blistering disease groups it is necessary to perform a skin biopsy for histology and direct-immunofluorescence studies.⁴

Cytologic examination has also been used in preliminary evaluation of basal cell carcinoma and squamous cell carcinoma⁴.

Conclusion

Cytologic examination is a very valuable procedure in dermatologic diseases which are seen frequently by the general physician. This technique is relatively easy to perform, process and interpret. It requires only few materials, staining dyes and a light microscope. Careful attention to the details of the technique and choosing the right lesion are necessary to achieve the maximal effective results. In most cases this procedure can be used and interpreted by any family physician. However, when dealing with skin diseases with serious consequences like pemphigus or suspected malignancies, the Tzanck smear should, obviously, be interpreted by an experienced pathologist.

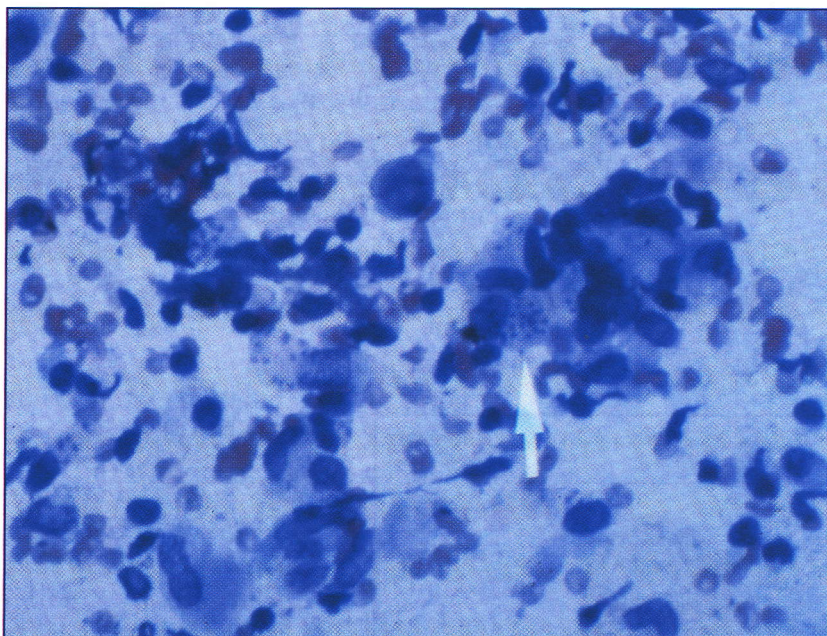


Fig 3. – Large macrophages filled with numerous leishmania organisms in leishmaniasis.

Most useful in viral diagnoses.

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