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Cytological diagnosis of molluscum contagiosum with an unusual clinical presentation at an unusual site

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Abstract

Background: Molluscum contagiosum, is a common skin infection caused by a pox virus usually present as raised nodule with umbilicated centre. Cytologic diagnosis has been documented in very few case reports as the lesion is subjected to fine needle aspiration rarely and awareness of the cytological features of Molluscum contagiosum is limited. The cytological diagnosis is further challenging in clinically unsuspected lesions.

Main observations: A 45-year-old female patient presented with 10 months history of a nodular nipple lesion which ulcerated after local application of caustic pencil. There was no associated breast lump. Cheesy material was expressed from the ulcer on the nipple and crush smeared on slides for cytological evaluation.

Cytology smears revealed nucleate and anucleate squames in an inflammatory background. Characteristic intracytopalsmic and extracytopalsmic molluscum bodies were seen.

Conclusion: The nipple is an unusual site of presentation for Molluscum contagiosum. Ulcerated lesions are rarer. In the present case, the cytological examination facilitated the diagnosis in a clinically unsuspected case. Cytology can be a useful rapid diagnostic aid in planning the management of these patients and help in avoiding unnecessary biopsies.

Introduction

Molluscum contagiosum (MC) a highly contagious skin infection that usually affects the face and trunk of children, adolescents and immunocompromised patients. The characteristic skin lesion appears as raised nodule with umbilicated centre.

Awareness of the cytological features of MC is limited by scanty literature as the lesion is subjected to fine needle aspiration rarely.[1,2] The cytological diagnosis is further challenging in clinically unsuspected lesions with unusual gross features.[3,4,5]

We report a case of MC with unusual presentation at unusual site which has not been reported before. The purpose is to highlight the value of cytology as a non invasive technique in the diagnosis of a clinically unsuspected case.

Case report

A 45-year-old female presented with a nipple ulcer. She was apparently well till 10 months ago when she noticed a small warty growth on tip of left nipple. It started as a raised, painless nodule with central umbilication. Three months later it became itchy and painful. She consulted a pharmacist who gave her a caustic pencil to burn the lesion. On applying caustic pencil, this lesion soon became ulcerated and started oozing cheesy material and sometimes blood.

On examination at breast clinic a tiny, crusted ulcer was noted on nipple surface measured 0.3x0.2 cm. The ulcer base was pink and margins were ragged covered with hemorrhagic exudate. General physical and systemic examination was normal. She had no other lesions or lumps in the breast, and there was no history of any similar lesions

elsewhere on her body. There was no lymphadenopathy anywhere particularly axilla.

She gave history of occasional risky sexual behaviour, but was HIV negative as per her last test done three months prior to the presentation. A clinical diagnosis of malignant ulcer was made and she was referred for cytologic evaluation.

In the cytology clinic, on pressing the nipple, cheesy material was expressed from the ulcer. The material was crush-smeared onto two glass slides, one of which was immediately fixed in 95% alcohol and stained by the Papanicolaou method, and the other air-dried and stained by Giemsa method.

Cytology smears showed many superficial keratinized nucleated squamous cells and anucleate squames scattered singly and in loose clusters. The background consisted of keratin debris, foamy macrophages and dense acute inflammatory exudate.

Several round to oval dense bodies were noted in the cytoplasm of many of these keratinized squamous cells in both Papanicolaou (Fig. 1A) and Giemsa (Fig. 1B) stained smears. These were eosinophilic to basophilic, homogenous or heterogenous enclosed in a well defined membranous sac and showed a clear halo surrounding the outer sac (Fig. 2A). Some were large enough to occupy the entire cell pushing the faintly visible nucleus of the host cell to the periphery (Fig. 2B). Some extruded extracellular MBs were also noted.

The bodies represented molluscum bodies (MB) also known as Henderson-Patterson bodies. A cytological diagnosis of molluscum contagiosum was rendered. The patient was referred for appropriate therapy and has not come for follow up.

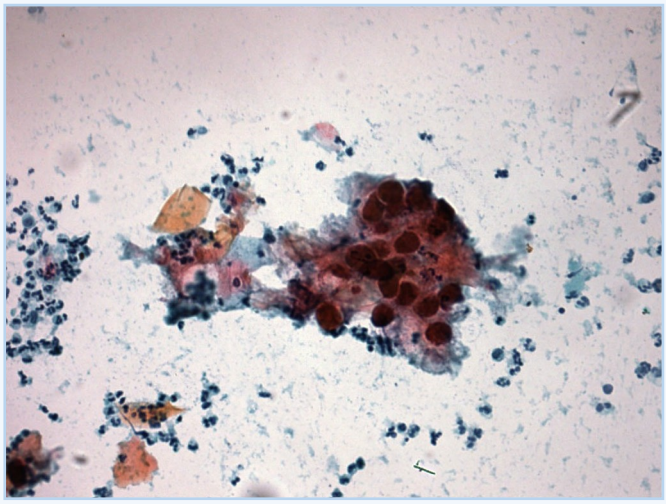

Figure 1A

Cytology smear showing numerous dense round eosinophilic bodies clustered together surrounded by superficial keratinized squamous cells and neutrophils (Papanicolaou stain, 200x).

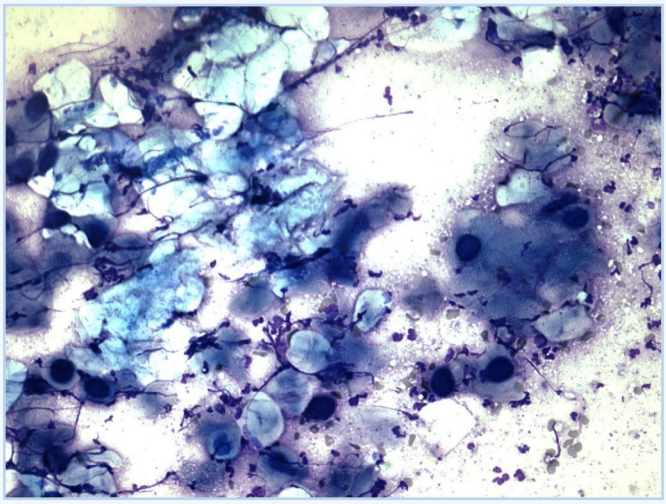

Figure 1B

Cytology smear showing many anucleate squames with grey blue cytoplasm. Few dense round basophilic bodies are scattered around (Giemsa, 200x).

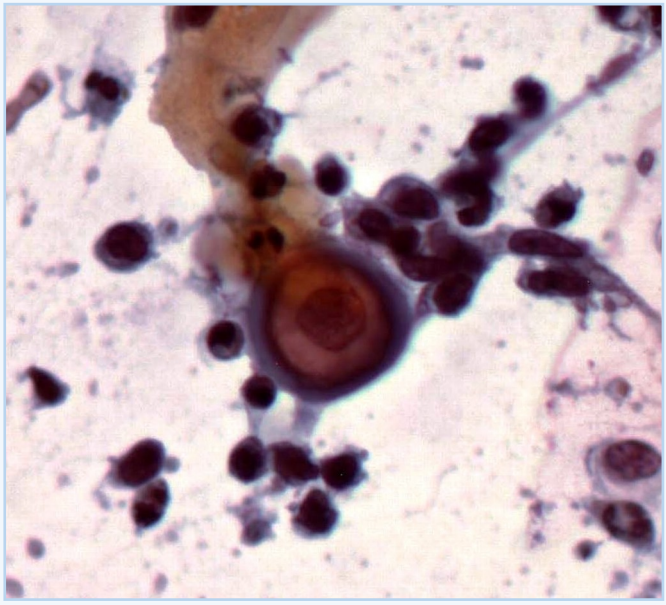

Figure 2A

A molluscum body surrounded by a clear halo (Papanicolaou stain, 400x).

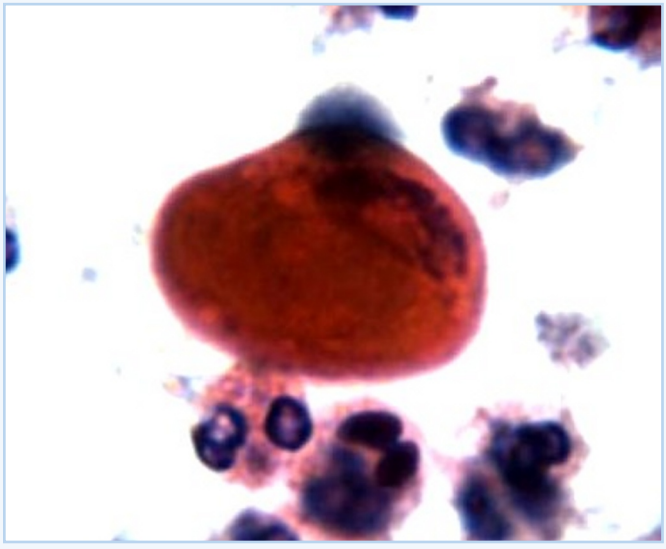

Figure 2B

Peripherally compressed nucleus of the squamous cell by an intracytoplasmic molluscum body (Papanicolaou stain, 1000x).

Discussion

MC is caused by a virus Molluscum contagiosum virus which is a member of the family Poxviridae (genus Molluscipoxvirus). It is the principal poxvirus causing human disease. Spread is mainly by direct skin-to-skin contact, and occurs predominantly in children, adolescents, sexually active adults, in individuals with impaired cellular immunity and in association with HIV and HPV infections.[6]

In immunocompetent hosts, MC is a benign, self-limited skin infection. However, in patients with underlying immune dysregulation, which is characterized by a T helper 2 (Th2) cytokine switching pattern within the skin, the lesions may be more diffuse, remain for longer periods of time, and may be more resistant to therapy. This most probably reflects the local deficits in cellular immune reactions within the skin, which are mediated primarily by a T helper 1 (Th1) cytokine pattern.[2] Antibody to pox virus may be seen in 60% patients with skin lesions but are less frequent in AIDS patients.[7,8]

Nonsexual transmission in healthy adults has been reported and typically occurs at a site of trauma or other cutaneous injury. It has predilection for head and neck, flexural areas, and genital areas. Sexually transmitted lesions in adults are usually seen on the lower abdomen and genitalia. There was no known predisposing factor in this patient.

The characteristic lesion is commonly described as a firm, fleshy, dome shaped umbilicated waxy papule measuring 2-8 mm in diameter and MC is easy to recognize clinically. Papules of MC are usually asymptomatic, but they can be pruritic or tender to touch. Extensive lesions are noted in patients with AIDS.[9]

It is a self limiting condition, most cases gradually resolve without treatment. It is a common practice to consult pharmacist who act as a first line health care provider to many patients in cities as well as rural areas in Africa. Caustic pencil for warty lesions is often prescribed by pharmacists. This should never be used on the breasts because the tissue is so sensitive and takes so long to heal. In this patient ulceration of nipple is a complication that precluded a correct clinical diagnosis.

The nipple is an extremely unusual site of involvement, and forms an important differential diagnosis for dermatoses of the nipple, including malignant nipple lesions. Dermatoses of the nipple and areola are quite rare, and infectious dermatoses at this site commonly include viral warts, molluscum contagiosum and scabies. Gross appearances of these lesions are very similar, therefore the differential diagnosis is of great clinical importance. Early lesions of dermatoses are scaly and erythematous, with possible etiologies ranging from eczema or inflammatory skin disorders, to Paget's disease of the nipple. The management implications are widely varied for this range of disorders, from topical applications to surgical interventions.[10]

Cytologic sampling is easy and non invasive as the lesions are usually multiple and have central pore from which white keratinous material can be expressed. The molluscum bodies are formed of viral particles and can be seen on routine Papanicolau and Giemsa stained cytology smears thus clinching the accurate diagnosis.[1,5] Failure to recognize these bodies may lead to misinterpretation of these lesions as epidermal inclusion cyst. Awareness of characteristic cytological features can help in reaching a correct diagnosis even in a clinically unsuspected case.[11] The previous experience of the cytopathologist with cytodiagnosis of MC was helpful in the present case reported here.[5]

Conclusion

The finding of molluscum bodies is pathognomonic, allowing appropriate management of the lesion without the need of a biopsy or any further investigations. Cytology is a rapid, non invasive tool in the diagnosis of molluscum contagiosum, useful in a patient with an unusual presentation.

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