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CASE REPORT

Utility of Tzanck Smear in Rapid Diagnosis of Molluscum Contagiosum: A Case Report

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ABSTRACT

Molluscum contagiosum (MC) is a self-limiting cutaneous viral disease caused by a double stranded DNA virus belonging to pox viridae family. The lesions are highly contagious and present as elevated pearl like papules with characteristic central umbilication. It can affect children, sexually active adults and immunocompromised individual.1 It is classically a clinical diagnosis and does not pose difficulty in diagnosis unless the presentation is atypical. Thus, the cytological features of MC are rarely described and reported, more so with Tzanck smear.[1] We are presenting a case of MC in a 27- year- old male which was diagnosed on Tzanck smear. We are presenting this case to emphasize on rapid diagnosis of MC using Tzanck smear.

KEYWORDS

• Molluscum contagiosum • Tzanck smear • Pearly papules

KEY MESSAGES

Molluscum contagiosum (MC) is generally diagnosed based on clinical presentation, though atypical cases can mimic other papular lesions. Given its contagious nature, early detection is crucial. In such cases, a simple Tzanck smear can confirm the diagnosis by identifying characteristic molluscum bodies. This report underscores the seldom-discussed cytological features of MC, highlighting the smear's utility for swift diagnosis, aiding in infection control, lesion reduction, and timely treatment.

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INTRODUCTION

Molluscum contagiosum (MC) is a self-limiting viral skin disease, commonly affecting children, sexually active adults, and immunocompromised individuals. The lesions typically present as pearly, elevated papules with central umbilication, making clinical diagnosis straight forward and often eliminating the need for a Tzanck smear.[1] As a result, the cytological features of MC, particularly those identified via Tzanck smear, are rarely reported. However, early diagnosis is key to preventing transmission, limiting lesion count, avoiding complications like infections or scarring, and ensuring proper treatment.

The Tzanck smear can swiftly confirm the diagnosis by identifying pathognomonic intracytoplasmic basophilic molluscum bodies. Through a case of a 27-year-old male diagnosed with MC via Tzanck smear, we aim to highlight the cytological features of MC and the smear's utility for rapid, effective diagnosis.

CASE HISTORY

The index case involves a 27-year-old male who presented with multiple pearly papules, each about 1-2 cm in size, located around the left axilla for a duration of three months. These papules were non-tender and exhibited the characteristic central umbilication, which is typical of molluscum contagiosum (MC) lesions (Figure 1). The patient had no other lesions in the body and no significant past medical history. The results of routine blood tests, including HIV, hepatitis B surface antigen (HBsAg), and hepatitis C virus (HCV) tests, were non-reactive, ruling out co-infection with these conditions. Based on the clinical presentation, a diagnosis of molluscum contagiosum was made.

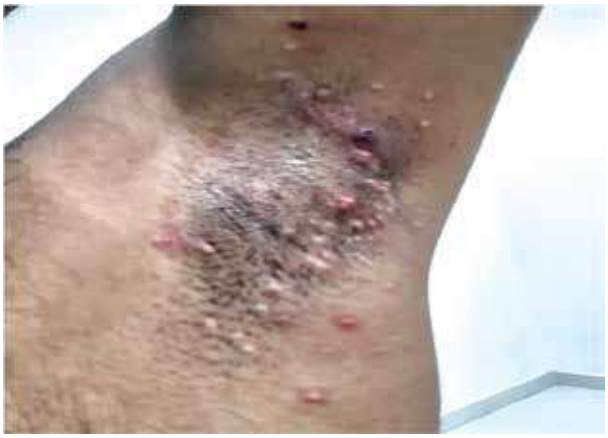

Figure 1: Clinical photograph showing clustered papules with central umbilication in the arm pit

After obtaining informed consent from the patient, the lesions were deroofed under aseptic conditions, and smears were prepared from the material scraped from the base of the lesions. These smears were air-dried and sent for cytological examination. The Tzanck smears were stained using Giemsa stain to better visualize the cellular components. Microscopic examination of the smears revealed basophilic bodies, known as molluscum bodies, which appeared both singly and in clusters (Figure 2a, 2b). Additionally, cells with intracytoplasmic inclusion bodies, which displaced the nucleus to the periphery, were observed. With these features a diagnosis of molluscum contagiosum is made on Tzanck smear. Needle extirpation of lesions done and patient kept on follow up.

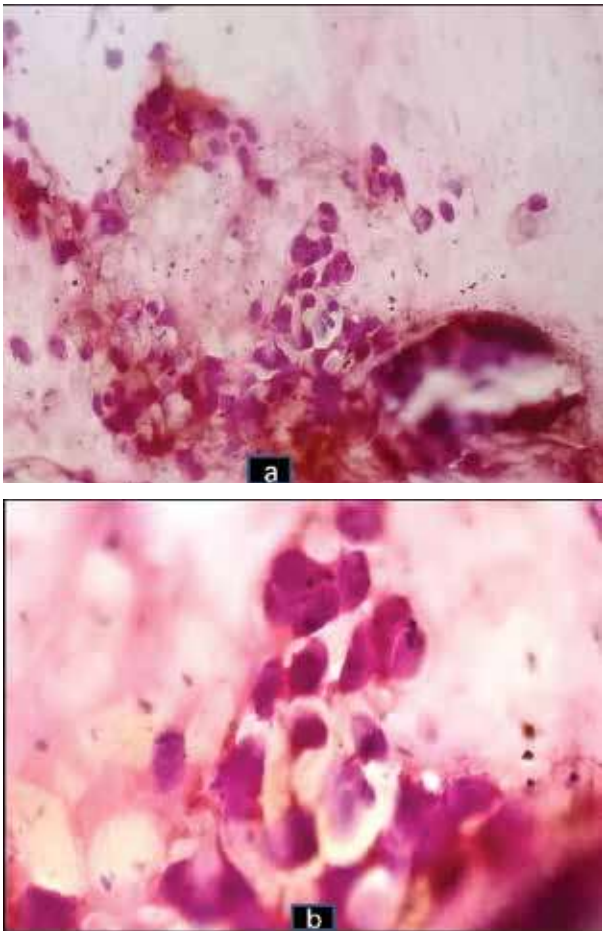

Figure 2: (a) Tzanck smears microphotograph showing singly scattered molluscum bodies (Giemsa x100) **(b)** High power image of molluscum bodies showing basophilic ovoid anucleate homogenous masses (Giemsa x400)

DISCUSSION

MC is a self-limiting cutaneous lesion caused by double stranded DNA virus belonging to pox viridae and was first described in 1871. It

can affect children, sexually active adults and immunocompromised individual and spreads by direct contact with infected individual or fomites.[2] Lesions occur in genitalia and lower abdomen in sexually transmitted cases. In nonsexual transmission and in children the lesions occur in flexural areas, trunk, head and neck.[1] This patient had no known risk behaviour and lesions typically occurred in axilla as clustered papules.

MC lesions usually appear as elevated pink papules with central umbilication. These lesions are usually 2-8 mm in size and present as discrete solitary or grouped lesions. Typical lesions are easy to diagnose clinically and rarely can create confusion with other viral infections, milia or closed comedones.[1] MC is a clinical diagnosis most often;therefore, the cytology of MC has not been described and reported to a large extent unlike in other cutaneous lesions.

Most cases of MC are asymptomatic and occasionally can be accompanied with tenderness and pruritis.These typical lesions present as elevated pearly tiny papules with central umbilication, can be easily diagnosed on clinical examination but occasionally can cause confusion with closed syringoma, comedones or epidermoid microcysts (milia).[3,4] In such circumstances, cytological examination of Tzanck smear helps in rapid definitive diagnosis.

Tzanck smear of MC is characterized by pathognomic intracytoplasmic molluscum bodies (Henderson-Patterson's Bodies), which are the largest viral inclusions measuring around 30-35µm. These inclusions are virus transformed keratinocytes which are basophilic ovoid anucleate homogenous masses surrounded by a membrane.[5] Syringoma show basaloid cells islands with amorphous material in center.[3] Epidermoid cysts shows nucleate and anucleate squames in a background of keratinous debri. Thus, Tzanck smear offers rapid accurate diagnosis of MC obviating the need for biopsy.[6] But they are very few reports describing the use of Tzanck smear in diagnosis of MC unlike in other cutaneous lesions.

Tzanck smears are very advantageous as it is a simple, inexpensive and painless procedure not requiring specialized laboratory. The turn- around time of Tzanck smear is very less compared to skin biopsy encouraging a rapid accurate diagnosis and early management of patient.

MC is clinical diagnosis most often unless its presentation is atypical. In such atypical presentations Tzanck smear complement the clinical diagnosis to establish a definitive diagnosis which is rapid. This helps in early management of the patient reducing infectious burden. This case emphasizes the utility of Tzanck smear in rapid diagnosis of MC which is not described on a large scale as most often it is a clinical diagnosis.

CONCLUSION

Molluscum contagiosum is primarily a clinical diagnosis, but atypical presentations can lead to diagnostic uncertainty. In such cases, a Tzanck smear serves as a valuable, rapid, and cost-effective tool for confirming the diagnosis by identifying characteristic molluscum bodies. This simple, minimally invasive procedure provides a swift alternative to biopsy, enabling early intervention and infection control. Despite its proven utility, the use of Tzanck smear in diagnosing MC is underreported. Our case highlights its diagnostic efficacy and emphasizes its role in dermatological practice, particularly in resource-limited settings. Wider recognition of this technique can aid clinicians in achieving prompt and accurate diagnoses, ultimately improving patient outcomes.

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Conflicts of interest: Nil

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