Diagnosis of Atypical Molluscum Contagiosum: 
The Utility of a Squash Preparation

Lydia I. Eleftheriou, BS; Sarah C. Kerr, MD; and Erik J. Stratman, MD.

Word count: 175 abstract; 461 text; 8 references; 2 multi-part figures

Running footer: Molluscum squash preparation

Corresponding Author: 
Erik J. Stratman, MD
Marshfield Clinic/St. Joseph’s Hospital
Department of Dermatology
1000 North Oak Avenue
Marshfield, WI 54449
Tel: 715-387-5311
Fax: 715-389-4141
Email: stratman.erik@marshfieldclinic.org

Received: July 15, 2010
Revised: September 13, 2010
Accepted: September 22, 2010
doi:10.3121/cmr.2010.953

Copyright 2010 by Marshfield Clinic.
Abstract

Molluscum contagiosum (MC) is a self-limited epidermal infection caused by the *Molluscipoxvirus*. It accounts for approximately 1% of all dermatologic diagnoses. The virus can be transmitted by infected fomites, casual or sexual contact, and self-inoculation, with a predilection for children, sexually active, or immunocompromised individuals. Molluscum lesions can affect any region of the body and typically present as asymptomatic 1mm to 5 mm pearly, white or skin-colored round papules with an umbilicated center. Morphologic variants of MC are common and include giant lesions greater than 5 mm, eczematous lesions, and folliculocentric lesions with secondary abscess formation. These less common presentations can closely mimic other dermatologic conditions, including lymphangioma, condyloma acuminatum, and basal cell carcinoma. Diagnosis of MC is typically made by clinical evaluation; however, atypical presentations pose a diagnostic challenge. An in-office diagnostic technique to definitively identify MC would be useful. We present the case of a 4-year old boy with an atypical presentation of molluscum contagiosum on the scalp and describe the diagnostic utility of the squash preparation technique to make the definitive diagnosis.

**Keywords:** Contagiosum; Cytology; Giemsa; Molluscum
**Case Presentation**

A 4-year old boy was referred to the outpatient dermatology clinic for two growths on his scalp. The first lesion had been present on the vertex scalp for six months and was asymptomatic except for recent inflammation and drainage of white exudate. A second growth developed on the patient’s posterior parietal scalp in recent weeks and reportedly resembled the original appearance of the initial lesion. Review of systems was negative, and the parents denied any affected close contacts. There had been no intervention to the lesions. On examination, the vertex of the scalp revealed a 0.3 cm hemorrhagic crusted papule with surrounding desquamation and minimal surrounding erythema. The left posterior parietal scalp had a 0.2 cm smooth pearly papule. The remainder of the examination was unremarkable. The skin overlying the parietal scalp lesion was incised using a 19-gauge needle. A white, cheesy central core was removed with a comedone extractor (figure 1A). The specimen was then squashed with firm pressure between 2 glass microscope slides (figures 1B, 1C). The top slide was discarded, and the material on the bottom slide was stained with three ml of Giemsa stain (figure 1D). The slide was then gently rinsed with tap water. A single drop of mineral oil was then applied to the air-dried specimen, followed by placement of a coverslip over the specimen. The slide was then viewed with light microscopy (figure 2). Cytologic examination revealed uniform, discrete and clustered purple ovals consistent with the large cytoplasmic viral inclusions of Molluscipoxvirus (Henderson-Paterson bodies), thus confirming the diagnosis of molluscum contagiosum (MC). As this was the only intact lesion on the full body exam of the child, the removal and squash preparation of the lesion’s contents was not only diagnostic, but therapeutic as well. No further treatment was required.
Discussion

Atypical presentations of MC can be diagnostically challenging, especially in human immunodeficiency virus type-1 (HIV-I) positive individuals. These patients tend to form giant molluscum plaques and verrucous lesions. Immunocompetent patients can form uncharacteristic lesions due to hair follicle involvement and variable states of inflammation, including secondary abscess formation. Diagnosis of MC is generally made on clinical grounds, however, a more definitive diagnosis can be obtained with biopsy or cytology. The presence of uniform, acidophilic, Henderson-Paterson bodies is pathognomonic for MC. Biopsy could be performed to determine the diagnosis, but this technique is more costly, invasive, and takes more time than in-office squash preparation. In this case we described the technique of squash preparation using Giemsa stain. In addition to Giemsa, other staining techniques such as Wright, 10% potassium hydroxide, Gram and Papanicolaou have been described in literature.

Conclusion

The squash preparation and cytologic identification of Henderson-Paterson bodies is an efficient method for rapid diagnosis of clinically challenging cases of molluscum contagiosum.
References


Author Affiliations

Lydia I. Eleftheriou, BS*; Sarah C. Kerr, MD*; Erik J. Stratman, MD*

*Department of Dermatology, Marshfield Clinic, Marshfield, Wisconsin, USA
Figures

Figure 1: (A) After incision with a 19-gauge needle, a comedone extractor is used to express the molluscum cheesy core. (B) The molluscum core is squashed between two glass microscope slides. (C) The squashed molluscum core is stained using 5 to 7 drops of Giemsa stain.
**Figure 2:** Discrete and clustered purple ovals consistent with large cytoplasmic viral inclusions of Molluscipoxvirus (Henderson-Paterson bodies) Magnification x20. **Inset:** Magnified view of Henderson-Paterson body (arrow).