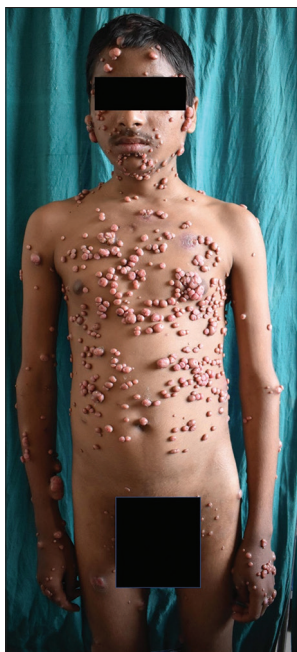


## Successful Treatment of a Recalcitrant Extensive Giant Molluscum Contagiosum with Intralesional 10% Potassium Hydroxide in an Immunosuppressed Case of Acute Myeloid Leukemia: A Case Report

Dear Editor,

Giant molluscum contagiosum is atypical manifestation, with lesions of size more than 1 cm<sup>2</sup>. There can be extensive involvement in an immunosuppressive. Therapeutic modalities are individualized (considering factors like age, size, anatomical site, immunity, and psychological aspects), and they include destructive therapy (cryotherapy, curettage, electrosurgery, pulse dye laser therapy), chemical therapy (podophyllotoxin cream 0.5%, cantharidin, potassium hydroxide (KOH) 5–20%, tretinoin, trichloroacetic acid (TCA), 10% salicylic acid, lactic acid, glycolic acid), autoinoculation, immunomodulatory (imiquimod 5%, cimetidine, interferon alfa, candidin, and diphencyprone), antiviral therapy (cidofovir), and oral retinoids.<sup>[1-3]</sup> There is no specific treatment for molluscum lesions, and usually, they resolve spontaneously in 6 to 18 months in an immunocompetent person. Treatment is required to halt the appearance of new lesions due to pseudo-koebnerization and its psychological effects.

KOH being a strongly alkaline solution, is keratolytic, dissolves protein and lipid layer, and penetrates deep into the epidermis. It has been used in various concentrations (5–20%) once or twice daily or as weekly topical application in the treatment of molluscum.<sup>[4]</sup> We are demonstrating the clinical safety and efficacy of

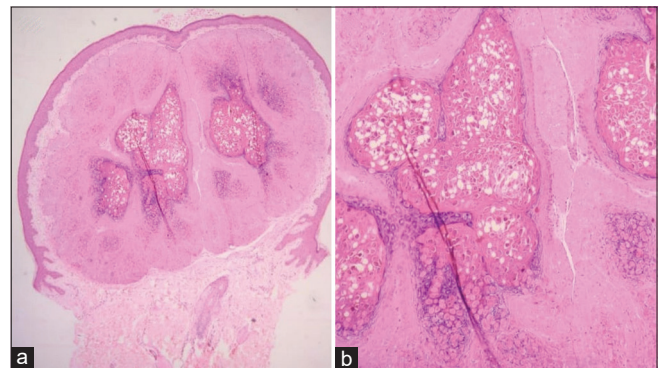


**Figure 1:** Extensive multiple pearly white discrete papules of size 0.5 cm<sup>2</sup> to 15 cm<sup>2</sup> distributed over the face, trunk, upper limbs, genital, and proximal part of the lower limb

intralesional KOH in extensive molluscum lesions in an immunocompromised patient.

A 14-year-old male, diagnosed case of acute myeloid leukemia with the mixed phenotype (Immunohistochemistry (IHC) markers positive for CD 45, 33, 34, 117, 7 with 50% blast cells in bone marrow biopsy) on various combinations of chemotherapy drugs without antiviral prophylaxis presented with asymptomatic swellings over the face for one year, which gradually progressed to involve the trunk, genitals and extremities. Few lesions had developed foul-smelling pus discharge and redness. On examination, there were multiple discrete pearly white swellings ranging from 0.5 cm<sup>2</sup> to 15 cm<sup>2</sup> distributed over the face, trunk, upper limb, genital, and proximal part of the lower limb. The lesions had central umbilication, and majority were giant in size. Few lesions over the face and chest were inflamed with foul-smelling discharge [Figure 1].

Based on the clinical presentation, a diagnosis of extensive molluscum contagiosum with an atypical presentation in an immunocompromised patient was made. It was confirmed by histopathology [Figure 2]. There was no response to previous treatment for 6 weeks duration with acitretin (1 mg/kg/day) and autoinoculation. Because of significant psychological distress with social avoidance and continuous appearance of multiple new lesions and parental pressure, we planned for a destructive procedure. Radiofrequency ablation (RFA) was done on a few small facial lesions; however, the patient refused to undergo RFA for larger lesions because of severe pain, crusting, and risk of scarring post-procedure. Based on availability, ease of application, and extensive giant molluscum, KOH 10% was injected intralesionally via insulin syringe in a dose of 0.1 ml/cm<sup>2</sup> into all the large lesions of the right upper limb. During the intralesional injection of



**Figure 2:** (a) Cross sectional view shows epidermal acanthosis with molluscum bodies (H & E, 4x) (b) Vacuolization of cytoplasm with intracytoplasmic eosinophilic inclusion bodies (H & E, 10x)



**Figure 3: Resolution of molluscum contagiosum lesions with hypertrophic scars following intralesional injection with 10% potassium hydroxide**

10% KOH, the patient developed pain, which was reduced by topical application and perilesional injection of 2% xylocaine. The lesions turned black due to necrosis, and immediate size reduction with perilesional swelling and erythema was noticed. Post-procedure, the patient had developed fever and edema around lesions. The patient was managed with antipyretics and antibiotics after blood and investigations being normal for fever work-up. Edema subsided in a week, with resolution of molluscum, and subsequently, KOH was injected in all lesions of size larger than  $1 \times 1 \text{ cm}^2$  over the trunk (video 1) followed by left upper limb, lower limb, and face at 2–3 week intervals. Diclofenac injection was done prior to the procedure, and the procedure itself was done under local anaesthesia. There was no fever, edema or electrolyte imbalance after the procedure. All the lesions resolved with few healing with hypertrophic and atrophic scars [Figure 3].

KOH is a strong alkali that produces immunity following inflammation against the virus. It produces erythema, burning, pain, superficial crusting with necrosis and sloughing. Post-procedure complications include dyspigmentation, secondary infection, hypertrophic scar, and anetoderma (macula atrophy) depending on concentration, anatomical site, and individual susceptibility. It can be applied topically or by pricking method at various concentrations (5–20%) once or twice daily or weekly.<sup>[1–4]</sup> KOH has a local effect without any expected systemic effects. The oral lethal doses (LD50) reported in animal studies are 273 mg/kg, 365 mg/kg, and

1230 mg/kg/day with no or negligible toxic effect.<sup>[5]</sup> Based on this, we had injected KOH 10% at  $0.1 \text{ cm}^2$  with a total dose of 30–60 mg per session. At this small dose, neither the concentration of potassium nor the pH increased in blood due to the excellent buffer mechanism by renal excretion of potassium and hydroxide ion being neutralized by bicarbonate.<sup>[5]</sup> Although the exact cause for fever and edema is not known, the proposed hypothesis is that it could be due to corrosive effect releasing acute inflammatory markers which did not occur when pre-medicated with diclofenac.

Hence, intralesional injection of 10% KOH could be a novel treatment option for molluscum contagiosum, considering its safety profile, easy of availability, and cost-effectiveness.

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We would like to thank our hospital team for patient management and care.

### **Declaration of patient consent**

The authors certify that they have obtained all appropriate patient and guardian consent prior to the procedure.

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Nil.

### **Conflicts of interest**

There are no conflicts of interest.

**Suvesh Singh, Rashid Shahid,  
Swetalina Pradhan**

*Department of Dermatology, All India Institute of Medical Sciences,  
Patna, Bihar, India*

#### **Address for correspondence:**

*Dr. Swetalina Pradhan,  
Department of Dermatology and Venereology, All India Institute of  
Medical Sciences, Patna - 801 507, Bihar, India.  
E-mail: dr.swetalinapradhan@gmail.com*

### **References**

1. Verma SB. Anetoderma in molluscum contagiosum treated with 10% potassium hydroxide. *Australas J Dermatol* 2021;62:e475-6.
2. Can B, Topaloğlu F, Kavala M, Turkoglu Z, Zindancı I, Sudogan S. Treatment of pediatric molluscum contagiosum with 10% potassium hydroxide solution. *J Dermatolog Treat* 2014;25:246-8.
3. Paudel V, Chudal D. Oral isotretinoin therapy in recalcitrant molluscum contagiosum in an immunocompromised patient. *Case Rep Dermatol Med* 2021;5529382.
4. Achdiat PA, Rowawi R, Fatmasari D, Karisa NA, Dwipangestu G, Avriyanti E, *et al.* A Case series: Experience of using 20% potassium hydroxide solution to treat adult sexually


transmitted molluscum contagiosum. Clin Cosmet Investig Dermatol 2020;13:671-6.

5. National Center for Biotechnology Information (2023). PubChem Compound Summary for CID 14797, Potassium Hydroxide. Retrieved August 27, 2023 from <https://pubchem.ncbi.nlm.nih.gov/compound/Potassium-Hydroxide>.

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