"Molluscum" Conditions in Dermatology

Abstract

In dermatology, the word "molluscum" is used as a prefix for infective and non-infective conditions. The term is used to describe soft papules or nodules with or without central umbilication, which is not a necessary qualification. This article attempts to summarise the conditions in dermatology with the epithet "molluscum" and discuss them in brief.

Keywords: *Molluscum contagiosum, molluscum fibrosum, molluscum fibrosum gravidarum, molluscum leprosum, molluscum sebaceum.*

Vishal Gaurav, Chander Grover

Department of Dermatology, University College of Medical Sciences and Guru Teg Bahadur Hospital, Dilshad Garden, Delhi, India

Introduction

In dermatology, the word "molluscum" is used as a prefix for infective and non-infective conditions. Originally, the Latin word "molluscum" referred to a fungus growing on maple tree. It is derived from "mollis" meaning "soft". "Mollusca" also refers to a phylum in the animal kingdom, presumably named because of their soft bodies, *e.g.* octopus, squid. In dermatology, the term is used to describe soft papules or nodules with or without central umbilication; although over the years, it is popular perception to consider it synonymous with umbilication. Though, umbilicated lesions may be seen in a variety of infective, inflammatory, reactive, benign as well as malignant dermatological conditions, the term molluscum has only been used for a limited number of entities.[1] We attempt to summarise the conditions in dermatology with the epithet "molluscum". The specific conditions are described below.

Molluscum contagiosum

It is a cutaneous viral infection, caused by *Molluscum contagiosum* virus (MCV), a poxvirus (dsDNA virus), which is the largest virus infecting humans.[2] Four genotypes of the virus are known (namely MCV 1-4). Of these, MCV-1 is responsible for 76-97% of infections.[3]

Clinically, it manifests as pearly white papules with a central umbilication, involving any cutaneous site [Figure 1]; however, the lesions in adults are more common in the anogenital area and can be sexually transmitted.[4] Rarely, MCV can cause folliculitis in immunosuppressed individuals, called molluscum folliculitis.[5] It presents as skin-coloured to red papules over the face.[6] At times, a Type IV hypersensitivity or Id reaction to the virus can cause a dermatitis around the papule in 10% of individuals, ranging in size from 5 mm to 10 cm. It is known as molluscum dermatitis and it may lead to resolution of the papule. Vice-versa is also true, that is removal of the lesion results in resolution of the dermatitis.[7] Patients with atopic dermatitis (AD) can also present with widespread MCV infection, commonly localized to eczematous skin lesions of AD; though it may extend beyond due to autoinoculation. This presentation is known as eczema molluscatum.[8]

Histopathological features are diagnostic including a "septate tomato" appearance due to lobular hyperplasia of the epidermis.[9] Individual keratinocytes feature intra-cytoplasmic, basophilic viral inclusions called Molluscum bodies or Henderson-Paterson bodies.[10]

Treatment options include various ablative methods like mechanical or chemical removal. Mechanical methods include cryotherapy, curettage, pulse dye laser while chemical cauterization can be done with cantharidin, potassium hydroxide, podophyllotoxin, trichloroacetic acid, salicylic acid, lactic acid, glycolic acid, benzoyl peroxide, or tretinoin. Various

How to cite this article: Gaurav V, Grover C. "Molluscum" conditions in dermatology. Indian Dermatol Online J 2021;12:962-5.

Received: 16-Dec-2020. **Revised:** 05-May-2021. **Accepted:** 12-May-2021. **Published:** 22-Nov-2021.

Address for correspondence:
Dr. Chander Grover, Department of Dermatology and STD, UCMS and GTB Hospital, Dilshad Garden, Delhi - 110 095, India.
Email: chandergroverkubba@rediffmail.com

Access this article online

Website: www.idoj.in

DOI: 10.4103/idoj.IDOJ_928_20

Quick Response Code:

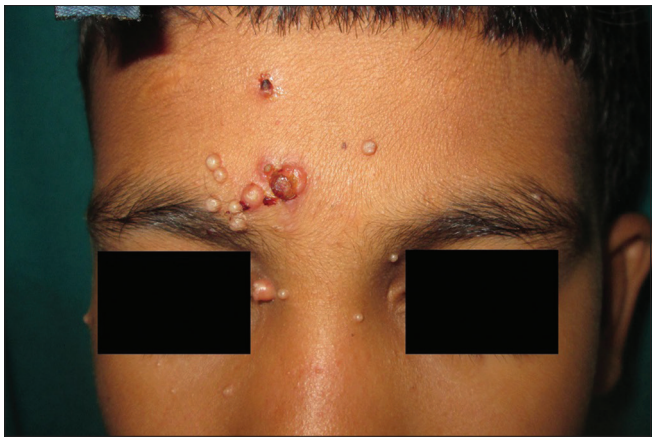

Figure 1: Molluscum contagiosum in a young child. This classic "molluscum" lesion is characterised by soft white papules with central umbilication. Few lesions show spontaneous regression

immunomodulatory agents can be used including imiquimod 5% cream, oral cimetidine, interferon alfa, candidin, and diphencyprone.[2] Specific antiviral therapy may occasionally be used for very extensive lesions, in the form of cidofovir.[11]

Molluscum fibrosum

Juvenile hyaline fibromatosis (JHF) or Murray-Puretic-Drescher syndrome was first described as molluscum fibrosum by Murray in 1873.[12] It belongs to the spectrum of hyaline fibromatosis syndrome, including infantile hyaline fibromatosis, in addition to JHF. It is an autosomal recessive connective tissue disease caused by mutation in ANTXR2 (Anthrax Toxin Receptor 2)/ CMG2 (capillary morphogenesis factor-2) gene on chromosome 4q21.[13]

Clinically, it presents with multiple papulonodular lesions localized to head and neck, large subcutaneous nodules over scalp, decreased joint mobility, gingival hypertrophy and osteolytic lesions of skull, phalanges and long bones.[14] Histology of skin lesions shows a normal epidermis with extracellular and perivascular dermal deposition of homogeneous hyaline, PAS (Periodic Acid Schiff) positive and eosinophilic material.[15]

No treatment guidelines are available, though skin lesions can be treated by surgical excision and/or intralesional and systemic steroids, for localized and extensive involvement respectively, with some success.[14]

Molluscum fibrosum gravidarum

These are benign, small, pedunculated, tan-to-brown, fleshy papules similar to acrochordons (skin tags) that are commonly seen on the neck, axillae, vulva, inner aspects of the thighs, and inframammary folds [Figure 2]. They frequently appear during the second half of pregnancy and may even regress postpartum. They are hypothesised to occur under the influence of maternal hormones.[16]

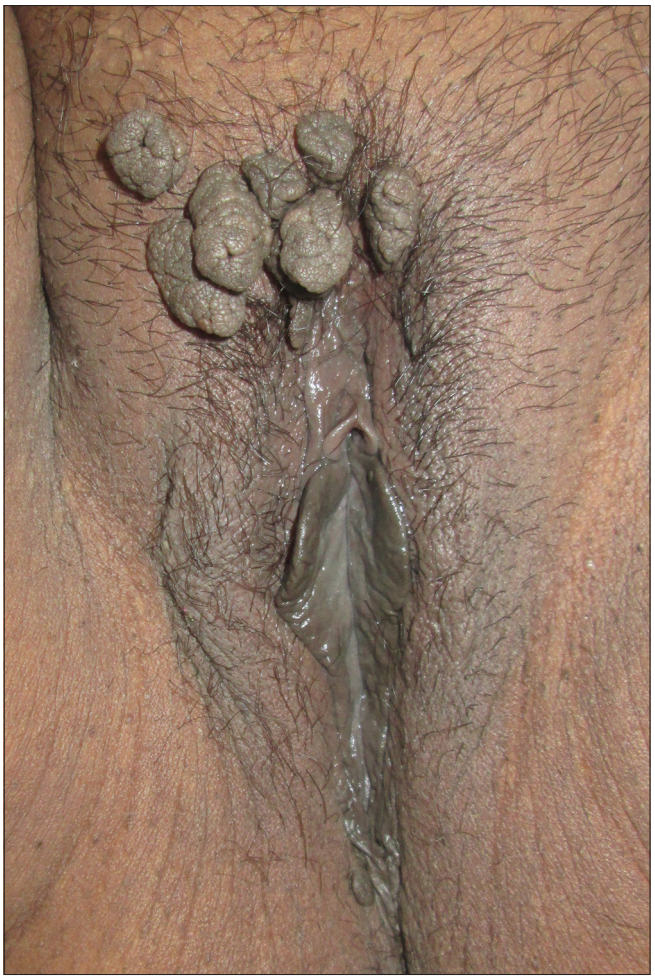

Figure 2: Molluscum fibrosum gravidarum in a pregnant lady. These are seen as multiple skin tags which appeared on the vulva, neck and axillae during pregnancy

Treatment is by shave excision, electrocautery, cryosurgery, and snipping with scissors.[16]

Molluscum fibrosum pendulum

It is also known as molluscum pendulum and is seen in 23% of patients with tuberous sclerosis complex (TSC).[17] TSC is caused by mutations in TSC1 and TSC2 genes encoding hamartin and tuberin proteins respectively.[18] It presents as soft pedunculated growths around the neck [Figure 3], axilla and groin in patients with TSC.[19] They resemble skin tags found in obese and elderly, but in TSC it presents at a much younger age.[20]

Histopathologically, these lesions are characterised by epidermal papillomatosis with a central fibrovascular core.[20] Treatment is by simple excision.

Molluscum leprosum

Lesions of histoid leprosy with central depression are also called as molluscum leprosum.[21] These were first described in lepromatous leprosy patients on dapsone

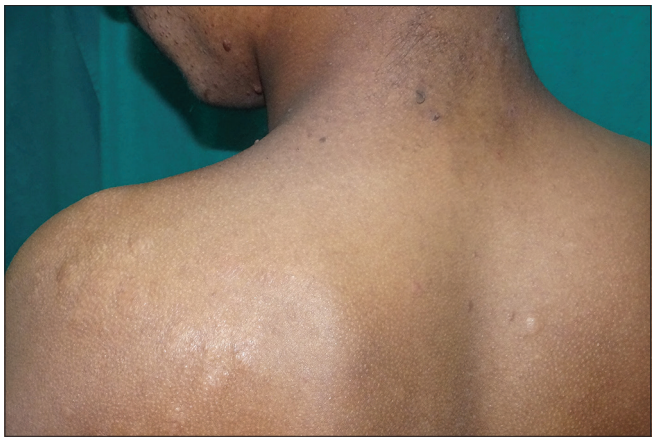

Figure 3: Molluscum fibrosum pendulum in a patient with Tuberous sclerosis. These soft papules resemble skin tags, even though they occur at a much younger age

monotherapy.[22] It is characterised by the presence of papules and nodules with superficial ulceration and few lesions showing depressed centre [Figure 4] resembling molluscum contagiosum.[23]

Histopathology shows an atrophic epidermis with a "band of Unna" at the dermo-epidermal junction. The dermis appears hypercellular with diffuse infiltration by fusiform macrophages admixed with a few plasma cells and absence of foamy cells. Histiocytes can be present at the periphery of the lesions.[24]

The treatment for this condition is multibacillary multidrug therapy (MB-MDT consisting of dapsone, clofazimine and rifampicin) which may have to be given over prolonged periods.

Molluscoid Pseudotumor

These smaller, tumor-like lesions present as blue-grey spongy outgrowths over sites of pressure, like elbows and knees in classical Ehlers Danlos Syndrome (EDS).[25] It is one of the minor diagnostic criteria for the diagnosis of classic subtype of EDS in Villefranche criteria (1997). Classical EDS is an autosomal dominant connective tissue disorder caused by mutation in COL5A1 and/or COL1A1 genes coding for Type V and Type I collagen, respectively.[26]

Other clinical features include hyperextensible, fragile and soft "doughy" skin, atrophic "cigarette paper" scarring, generalized joint hypermobility, epicanthic folds, easy bruising, subcutaneous spheroids, hernia, joint subluxation and dislocation.[26]

Histologically, the lesions of molluscoid pseudo-tumors are composed of herniated fat and mucoid material, encased in a fibrous capsule. Older lesions may undergo dystrophic calcification. No treatment is effective, though surgical excision can be done for larger, distressing lesions.[25]

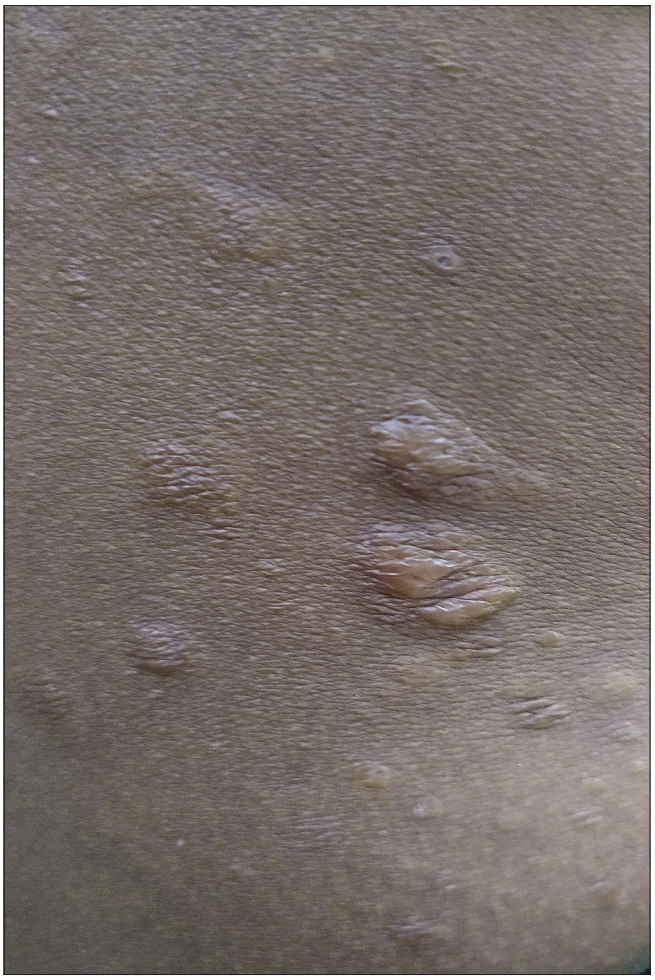

Figure 4: Molluscum leprosum or lesions of histoid leprosy. Multiple soft papules and nodules arising over apparently normal skin in a patient with lepromatous leprosy

Molluscum sebaceum

More popularly known as keratoacanthoma (KA), molluscum sebaceum is a low-grade tumor originating from pilosebaceous follicles.[27] The risk factors for the development of a solitary KA include exposure to UV radiation, as for other non-melanoma skin cancers (NMSC). The appearance of multiple KA's are associated with TGFBR1 gene and MMR gene in Ferguson-Smith and Muir- Torre syndrome, respectively.[28,29] Any sun-exposed part may be involved, but the most frequently affected site is the central face including the nose [Figure 5], cheeks, eyelids and lips.[30]

Histopathologically, it is an exo-endophytic tumor with lobulations and a central keratinous plug with well-defined borders. Normal epidermis covers the overhanging epithelial lips. Individual cells are large with ground glass like cytoplasm without nuclear atypia.[31]

The lesion is mostly self-resolving. Whenever possible, surgical excision is the preferred treatment; other options include ablative lasers, cryotherapy, radiotherapy

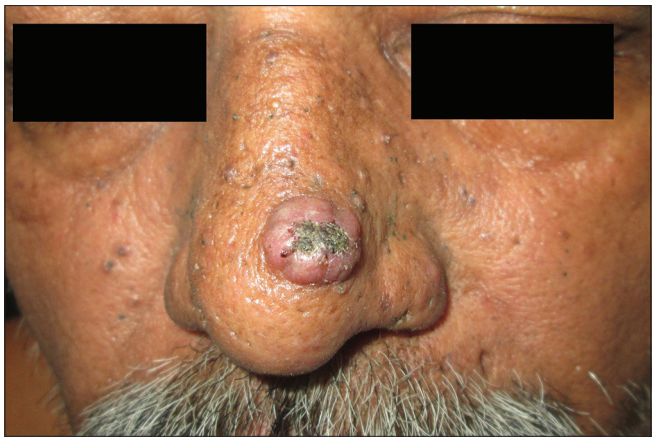

Figure 5: Moulluscum sebaceum or Keratoacanthoma. The lesion is a soft nodule with a central crater filled with keratinous debris

photodynamic therapy, topical treatment with 5-Fluorouracil, imiquimod, podophyllin, systemic erlotinib and retinoids.[30]

Conclusion

To conclude, "molluscum" is an eponymous terminology used in dermatology for a variety of conditions which are characterised by soft, papular or nodular growths, with or without umbilication. This article highlights that etiologically, these conditions may not be inter-related.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

References

1. Bubna A. Umbilicated lesions in dermatology. Clin Dermatol Rev 2019;3:99-103.
2. Leung AK, Barankin B, Hon KL. Molluscum contagiosum: An update. Recent Pat Inflamm Allergy Drug Discov 2017;11:22-31.
3. Chen X, Anstey A V, Bugert JJ. Molluscum contagiosum virus infection. Lancet Infect Dis 2013;13:877-88.
4. Trčko K, Poljak M, Križmarić M, Miljković J. Clinical and demographic characteristics of patients with molluscum contagiosum treated at the university dermatology clinic maribor in a 5-year period. Acta Dermatovenerol Croat 2016;24:130-6.
5. Weinberg JM, Mysliwiec A, Turiansky GW, Redfield R, James WD. Viral folliculitis: Atypical presentation of herpes simplex zoster, and molluscum contagiosum. Arch Dermatol 1997;133:983-6.
6. Feldmeyer L, Kamarashev J, Boehler A, Irani S, Speich R, French LE, *et al*. Molluscum contagiosum folliculitis mimicking tinea barbae in a lung transplant recipient. J Am Acad Dermatol 2010;63:169-71.
7. Kipping HF. Molluscum dermatitis. Arch Dermatol 1971;103:106-7.
8. Wollenberg A, Wetzel S, Burgdorf WH, Haas J. Viral infections in atopic dermatitis: Pathogenic aspects and clinical management. J Allergy Clin Immunol 2003;112:667-74.
9. Khopkar U, Dongre A, Madke B, Doshi B. Appearances in dermatopathology: The diagnostic and the deceptive. Ind J Dermatol Venereol Leprol 2013;79:338-48.
10. Rao K, Priya N, Umadevi H, Smitha T. Molluscum contagiosum. J Oral Maxillofac Pathol 2013;17:146-7.
11. Toro JR, Wood LV, Patel NK, Turner ML. Topical cidofovir. Arch Dermatol 2000;136:983-5.
12. Murray J. On three peculiar cases of molluscum fibrosum in children in which one or more of the following conditions were observed: Hypertrophy of the gums, enlargement of the ends of the fingers and toes, numerous connecive-tissue tumours on the scalp, and c. Med Chir Trans 1873;56:235-54.
13. Casas-Alba D, Martínez-Monseny A, Pino-Ramírez RM, Alsina L, Castejón E, Navarro-Vilarrubí S, *et al*. Hyaline fibromatosis syndrome: Clinical update and phenotype-genotype correlations. Hum Mutat 2018;39:1752-63.
14. Braizat O, Badran S, Hammouda A. Juvenile hyaline fibromatosis: Literature review and a case treated with surgical excision and corticosteroid. Cureus 2020;12:e10823.
15. Bedford CD, Sills JA, Sommelet-Olive D, Boman F, Beltramo F, Cornu G. Juvenile hyaline fibromatosis: A report of two severe cases. J Pediatr 1991;119:404-10.
16. Kar S, Krishnan A, Shivkumar PV. Pregnancy and skin. J Obstet Gynaecol India 2012;62:268-75.
17. Jóźwiak S, Schwartz RA, Janniger CK, Michałowicz R, Chmielik J. Skin lesions in children with tuberous sclerosis complex: Their prevalence, natural course, and diagnostic significance. Int J Dermatol 1998;37:911-7.
18. Narayanan V. Tuberous sclerosis complex: Genetics to pathogenesis. Pediatr Neurol 2003;29:404-9.
19. Sachs C, Lipsker D. The molluscum pendulum necklace sign in tuberous sclerosis complex: A pathognomonic finding? J Eur Acad Dermatol Venereol 2017;31:507-8.
20. Curtis JR, Hurst E, Lee M, Sheehan DJ. A true molluscum pendulum. Int J Dermatol 2007;46:853-4.
21. Thomas J, Wilson NC, Parimalam S, Augustine SM, Muthuswami TC. Multiple neurofibromatosis with histoid leprosy. Int J Lepr Other Mycobact Dis 1989;57:695-6.
22. Wade HW. The histoid variety of lepromatous leprosy. Int J Lepr 1963;31:129-42.
23. Sharma AK. "Umbilicated" lesions in histoid leprosy. Int J Lepr Other Mycobact Dis 1997;65:101-2.
24. Sehgal VN, Srivastava G, Singh N. Histoid leprosy: Histopathological connotations' relevance in contemporary context. Am J Dermatopathol 2009;31:268-71.
25. Inamadar AC, Palit A. Cutaneous signs in heritable disorders of the connective tissue. Indian J Dermatol Venereol Leprol 2004;70:253-5.
26. Bowen JM, Sobey GJ, Burrows NP, Colombi M, Lavallee ME, Malfait F, *et al*. Ehlers-Danlos syndrome, classical type. Am J Med Genet C Semin Med Genet 2017;175:27-39.
27. Misago N, Inoue T, Nagase K, Tsuruta N, Tara-Hashimoto A, Kimura H, *et al*. Crater/ulcerated form of infundibular squamous cell carcinoma: A possible distinct entity as a malignant (or high-grade) counterpart to keratoacanthoma. J Dermatol 2015;42:667-73.
28. Goudie DR, D'Alessandro M, Merriman B, Lee H, Szeverényi I, Avery S, *et al*. Multiple self-healing squamous epithelioma is caused by a disease-specific spectrum of mutations in TGFBR1. Nat Genet 2011;43:365-9.
29. Coquillard C, Boustany A, DeCoster RC, Vasconez HC. Muir-Torre syndrome presenting as a sebaceous carcinoma of the Nasal Ala. Am Surg 2019;85:115-7.
30. Kwiek B, Schwartz RA. Keratoacanthoma (KA): An update and review. J Am Acad Dermatol 2016;74:1220-33.
31. Takai T. Advances in histopathological diagnosis of keratoacanthoma. J Dermatol 2017;44:304-14.