

BRIEF ARTICLE

Eyelid Calcinosis Cutis

Carlie Reeves, BA, MS¹, C. Alex Noble, MD², Robert T. Brodell, MD²

¹ University of Mississippi Medical Center, Jackson, Mississippi

² Department of Dermatology, University of Mississippi Medical Center, Jackson, Mississippi

ABSTRACT

A healthy 13-year-old African American male presented with a lesion on the eyelid that demonstrated features of calcinosis cutis. Histologic examination revealed a central dilated milia cyst with scores of tiny calcium deposits in the adjacent dermis. The eyelid is an uncommon location for calcinosis cutis to manifest, but it has been reported in the literature, particularly in children of ethnic descent. The history obtained from the patient, as well as the histological and literature findings, are suggestive of dystrophic calcinosis cutis occurring on the eyelid in the setting of a ruptured milia cyst or comedone.

INTRODUCTION

Calcinosis cutis is an uncommon disorder characterized by inappropriate calcium salt deposition within the dermis of the skin.¹ A case of pediatric calcinosis cutis occurring on the eyelid is presented.

CASE REPORT

A healthy 13-year-old African American male presented with an intermittently tender lesion on the right upper eyelid about 2 millimeters from the lid margin. It had been present for the past 12 months (**Figure 1**). The child admitted to rubbing the lesion. There were no similar lesions elsewhere. He had no history of medical problems, and he did not take any medications. A recent complete blood count and metabolic panel were unremarkable with normal calcium and phosphate levels. A shave biopsy was performed after local

anesthesia using 1% lidocaine with epinephrine.

Histologic examination of the biopsy specimen revealed a central dilated milia cyst with scores of tiny calcium deposits in the adjacent dermis. A central perforation of the epidermis was noted. The findings were suggestive of dystrophic calcinosis cutis in the setting of a ruptured milia cyst or comedone (**Figure 2**).

DISCUSSION

Calcinosis cutis occurs under a variety of settings. The dystrophic form of calcinosis cutis is associated with autoimmune diseases, most notably systemic sclerosis and dermatomyositis.² Milia-like idiopathic calcinosis cutis (MICC) is a rare idiopathic subtype associated with Down Syndrome, but it has been reported in healthy individuals.³ MICC has a predilection for the hands and feet, but rare cases of MICC

January 2024 Volume 8 Issue 1



Figure 1. A 1.5 mm skin-colored to white dome-shaped papule on the right medial upper eyelid.

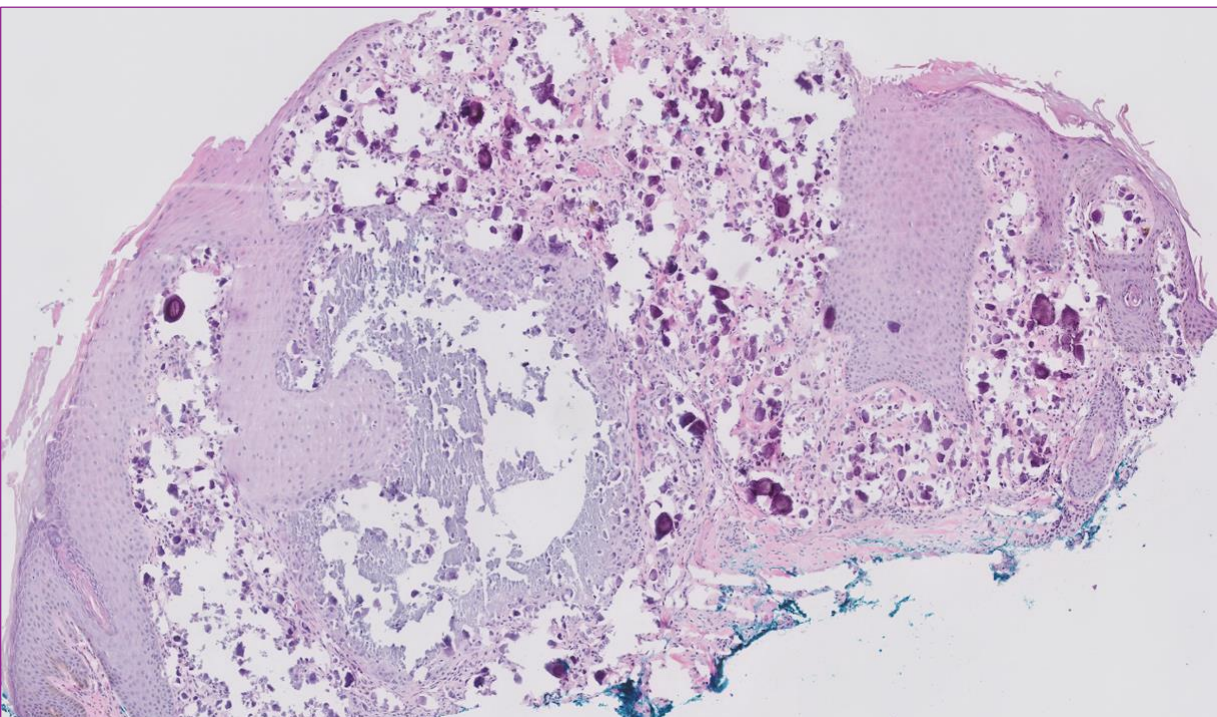


Figure 2. A cup-shaped comedone with an acanthotic wall and overlying perforation is associated with small deposits of calcium scattered throughout the upper dermis (H&E, 50x).

Table 1. Eyelid Calcinosis Cutis Cases Which Have Been Reported

Case author	Age/sex	Ethnicity	History of trauma	Location
Our case	13-year-old male	African-American	Possible trauma from rubbing or scratching	Right upper eyelid margin
Shin	17-year-old male	Korean	Yes; previous MICC excision	Left upper, outer eyelid
Samaka	3-year-old male	Arabic	No	Medial left upper eyelid
Sharma	12-year-old male	Korean	Yes; pencil tip	Left upper, outer eyelid

occurring on the eyelid have been reported in both ophthalmology and dermatology literature.^{1,3,4,5} Cases of pediatric calcinosis cutis of the eyelid and their findings are summarized in **Table 1**.

The pathogenesis of calcinosis cutis is not fully understood. It has been proposed that patients with Down Syndrome and MICC demonstrate premature aging with increased sweat calcium concentrations or delayed excretion of sweat in eccrine glands which is believed to be associated with calcium deposition.^{3,6} Alternatively, MICC could represent a microepidermal cyst associated with chronic inflammation leading to calcium deposition.⁶ Scrotal calcinosis cutis is thought to be the result of this mechanism.⁷ Some authors have described their patient as having a variant of calcinosis cutis, including subepidermal calcified nodule and MICC.⁴ In addition to being associated with Down Syndrome, MICC on the heels has manifested after trauma from heel sticks for blood samples in the neonatal intensive care unit.⁸

Calcinosis cutis frequently occurs at sites of microtrauma, which may explain why calcinosis cutis in one report reoccurred in the same location 6 years after excision of a MICC lesion.^{2,3} In our case, a chronic

inflammatory reaction may have been induced by repetitive rubbing or scratching a milia cyst or comedone, thus initiating calcium deposition. No history of trauma was noted in one patient.⁴ The treatment of choice for calcinosis cutis is surgical excision.¹ This is commonly accomplished with a simple shave technique rather than a more invasive elliptical excision.

Conflict of Interest Disclosures: None

Funding: None

Consent: All patients gave consent for their photographs and medical information to be published in print and online and with the understanding that this information may be publicly available.

Corresponding Author:

Robert T. Brodell, MD
106 Chadwyck Place, Madison, MS 39110
Phone: 330-883-5302
Email: rbrodell@umc.edu

References:

1. Jun I, Kim SE, Lee SY, Kim GJ, Yoon JS. Calcinosis cutis at the tarsus of the upper eyelid. *Korean J Ophthalmol*. 2011 Dec;25(6):440-2. doi: 10.3341/kjo.2011.25.6.440. Epub 2011 Nov 22. PMID: 22131782; PMCID: PMC3223712.
2. Ghadimi H, Nikdel M, Eshraghi B. Bilateral calcinosis cutis of orbital walls in CREST syndrome. *J Scleroderma Relat Disord*. 2019 Jun;4(2):NP1-NP4. doi:

- 10.1177/2397198318819383. Epub 2019 Jan 4. PMID: 35382395; PMCID: PMC8922648.
3. Shin BS, Choi H, Choi KC, Kim MS. Recurrent milia-like idiopathic calcinosis cutis on the upper eyelid. *Ann Dermatol.* 2013 Nov;25(4):520-2. doi: 10.5021/ad.2013.25.4.520. Epub 2013 Nov 30. PMID: 24371412; PMCID: PMC3870233.
 4. Samaka RM, Al-Madhani A, Hussian SO. Subepidermal calcified nodule in upper eyelid: A case report and review of the literature. *Oman J Ophthalmol.* 2015 Jan-Apr;8(1):56-8. doi: 10.4103/0974-620X.149870. PMID: 25709278; PMCID: PMC4333547.
 5. Sharma N, Rana V, Nagar A. Post Traumatic calcinosis cutis of eyelid. *Nepal J Ophthalmol.* 2019 Jul;11(22):215-217. doi: 10.3126/nepjoph.v11i2.27830. PMID: 32792698.
 6. Bécuwe, C., Roth, B., Villedieu, M.H., Chouvet, B., Kanitakis, J. and Claudy, A. (2004), Milia-Like Idiopathic Calcinosis Cutis. *Pediatric Dermatology*, 21: 483-485.
 7. Syed MMA, Rajbhandari A, Paudel U. Idiopathic calcinosis cutis of the scrotum: a case report and review of the literature. *J Med Case Rep.* 2018 Dec 12;12(1):366. doi: 10.1186/s13256-018-1922-6. PMID: 30537979; PMCID: PMC6290501.
 8. Galas M, Lam JM. Heel-stick calcinosis cutis. *CMAJ.* 2016 Sep 6;188(12):900. doi: 10.1503/cmaj.151084. Epub 2016 May 30. PMID: 27241784; PMCID: PMC5008939.