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### Rare case of gout manifesting as bilateral eyelid lesions

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### Abstract

Gout is a systemic disease characterized by monosodium urate crystal deposition triggering inflammation throughout the body. The authors present a case of a 37-year-old female who presented with bilateral eyelid and canthal lesions. The patient had a tan spherical lesion on her left upper lid, a circumscribed flesh-colored nodule at her left medial canthus, and a more pigmented lesion at her right lateral canthus. Following complete excisional biopsy of all lesions, histopathologic analysis revealed pink fibrillary material with histiocytic reaction in all 3 lesions consistent with gout. Only 6 prior cases of eyelid or canthal tophi have been reported, and this study adds a new case to the few existing reports. The authors emphasize that gouty tophi should remain on the differential for eyelid lesions.

### Introduction

- Gout is a disease characterized by hyperuricemia that results in deposition of monosodium urate crystals mostly in the joints.
- This triggers an inflammatory cascade that causes release of proinflammatory cytokines, eventually resulting in tissue injury and inflammation throughout the body, including in joints, skin, bursae, cartilage, tendons, ligaments and kidneys. (Figure 1)
- Gouty tophi, aggregates of dissolved urate crystals surrounded by cells reacting to inflammation, are pathognomonic of gout.
- Risk factors for gout include male gender, obesity, metabolic syndrome, excessive alcohol intake, renal failure and age over 30 years old.<sup>1</sup>
- Cases of ocular tophi are rare but urate crystal deposition in the cornea, orbit, iris and anterior chamber have been described.<sup>2-5</sup>
- We report a case of multiple gouty tophi involving the lid and canthal areas.
- This case is only the seventh reported instance of eyelid or canthal tophi to our knowledge.<sup>6</sup>

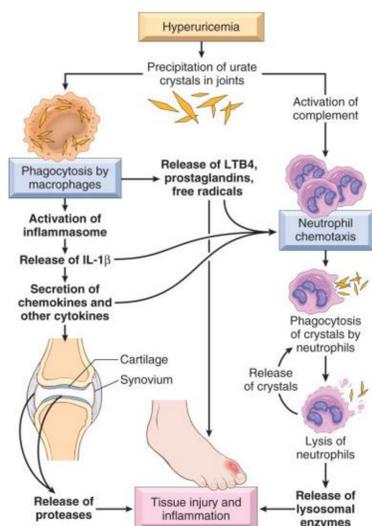


Figure 1. Pathogenesis of acute gouty arthritis.<sup>1</sup>

### Case

A 37-year-old female was referred for lesions of the right lateral canthus, left upper lid, and left medial canthus present for approximately 7 months. The right lateral canthal lesion had gradually enlarged in size over that time period with changes in color after continued manipulation by the patient. There was no discharge or bleeding prior to manipulation of the lesion. The lesion ruptured when the patient fell asleep with a heating pad applied to that area, however the lesion did not resolve. On exam, the lesion was noted to measure 0.6 x 0.5 cm with an umbilicated center and was located in the lateral canthal area along the right upper lid (Figure 2A). A left upper lid lesion was noted at the corner of the left eye in the medial canthal area. No bleeding or discharge was reported from this lesion. The patient denied tenderness or pain, and there was no change with hot compresses. This lesion measured 0.3 x 0.3 cm. A second left upper lid lesion, measuring 0.2 x 0.1 cm, was noted just lateral to the left medial canthal lesion (Figure 2B). Visual acuity was 20/20 in both eyes without correction.

Conjunctival, corneal and anterior chamber examination were all normal. No inflammatory signs were visible surrounding the lesions. Given that the right upper lid lesion had some concerning features as above, and the patient was bothered by the lesions, excision was recommended.

Patient underwent excision of all lesions 10 weeks later. The right lateral canthal lesion was excised in its entirety and sent for histopathologic analysis. A rotational flap was then used to cover the defect. The left upper lid lesions were then excised without closure and sent for histopathologic analysis. All lesions were noted to contain pink fibrillary material with histiocytic reaction consistent with gout. At the initial postoperative visit, the results were discussed with the patient who revealed she had a known history of gout. All areas healed well.

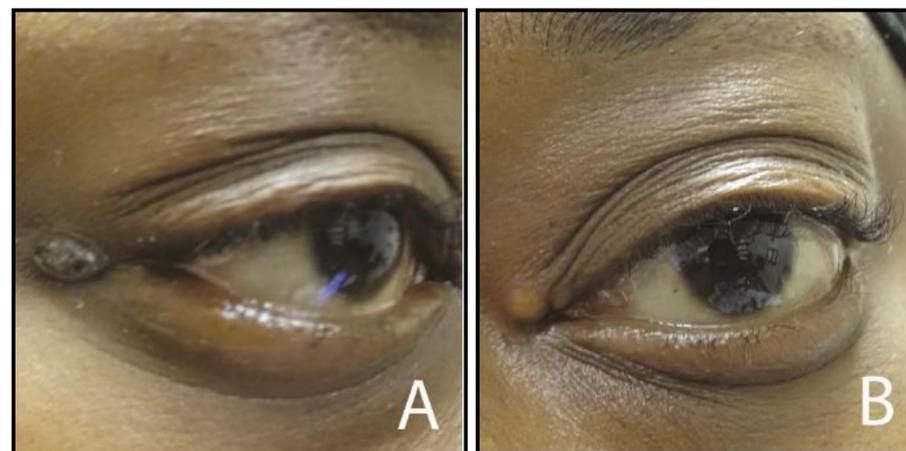


Figure 2. (A) Right lateral canthal lesion. (B) Left medial canthal and upper lid lesions.

### Discussion

- Gout is the most common type of inflammatory arthritis with ever rising incidence and prevalence.<sup>7</sup>
- Ocular findings in gout are rare but have been reported in various locations in the eye.
- Eyelid involvement has been reported in only 6 prior cases.
- Three cases involved the lateral canthus, two involved the medial canthus and one case reported a lesion of the left upper eyelid.<sup>6,8-12</sup>
- All of these previous cases described a single lesion determined to be caused by gout.
- Our case is the first report in the literature of a patient with multiple bilateral eyelid tophi.
- While ocular complications of gout are rare, gouty tophi should remain on the differential for eyelid and canthal soft tissue masses.

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