

A rare complication of topical atropine for treatment of eccrine hidrocystoma: Pharmacological fixed dilated pupils

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Summary

Multiple eccrine hidrocystoma (EH) has been treated with topical atropine with variable results. However, in rare cases, anticholinergic side effects have been seen after the use of the topical form of this drug. We presented a 50-year-old woman who developed recent onset of visual disturbance and photophobia from 2 weeks prior. The diagnosis of topical atropine-induced bilateral mydriasis was made. We reported a recognized but often overlooked case of bilateral mydriasis caused by application of topical 1% atropine for treatment of multiple EH.

KEYWORDS

atropine, dilated pupil, eccrine hidrocystoma

1 | INTRODUCTION

Multiple eccrine hidrocystomas (EHs) are benign cystic lesions of eccrine ducts that are mainly seen on the peri-orbital, and malar regions.¹ Treatments of these lesions have been challenged, and different therapeutic options have been proposed.² Multiple lesions have been treated with topical atropine with variable result.^{2,3}

2 | CASE HISTORY

A 50-year-old woman presented with visual disturbance and photophobia from 2 weeks prior. Also, she reported a history of an inability to focus up close, but distance vision was unaffected. Ocular examination revealed a bilateral fixed dilated pupil which was not reactive to light. Slit-lamp examination, review of systems, and family histories were noncontributory. A neurological examination revealed no other findings. She had not used any medications except topical atropine cream from 3 weeks previously for multiple EHs. So the diagnosis of topical atropine-induced bilateral mydriasis was made and discontinuation of this medication was advised, which led to symptom resolution after several days (Figure 1).



FIGURE 1 Eccrine hidrocystoma. Numerous tiny and translucent papules on the peri-orbital area. Note the dilated pupil in right and left eyes

3 | DISCUSSION

Atropine sulfate has anticholinergic effect and has multisystem effects. Atropine can inhibit secretion of the sweat gland; also, topical formulation can prevent the enlargement of EHs.²

Atropine in the eye induced mydriasis by blocking contraction of the circular pupillary sphincter muscle, which is normally stimulated by acetylcholine release allowing the radial pupillary dilator muscle

to contract and dilate the pupil.⁴ Atropine induces cycloplegia by paralyzing the ciliary muscles, the action of which inhibits accommodation in eye to allow accurate refraction.⁵ As rare anticholinergic side effects such as blurred vision or mouth dryness were seen after use of topical atropine,³ some clinicians administer a lower concentration of atropine, such as 0.03%.²

There are several hypotheses in atropine-induced bilateral mydriasis including an accidental direct contamination of the eye such as rubbing the eye immediately after applying topical cream or solution and handling of contact lenses following application of topical cream or solution.⁵ Also percutaneous application of medication in the periorbital area and eyelid with high permeability⁶ can develop noticeable absorption that develops systemically, or local side effects including pupil dilation, especially when using a thick layer or high concentration.

In this report, we emphasize the importance of considering application of a topical form or accidental exposure of topical atropine cream as a one of the differential diagnoses for bilateral mydriasis. Awareness of this recognized but usually overlooked cause of mydriasis may prevent further unnecessary evaluation.

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CONFLICT OF INTEREST

The authors declare that there is no conflict of interests regarding the publication of this paper.

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