CASE REPORT

The madarosis mystery: unravelling the clues to a host of health issues

BY KATE REED AND ANNA GKOUNTELIA

Eyelash madarosis is a medical condition characterised by the loss of eyelashes caused by the destruction of hair follicles. It can range from a few missing lashes to a complete absence of lashes on the eyelids. This condition can be caused by various factors, including underlying medical and ophthalmic conditions, medications, stress and some cosmetic treatments [1]. It is important to understand the various causes, investigations and treatments of eyelash madarosis in order to properly diagnose and treat this condition.

Case

A 19-year-old female patient presented with a three-month history of madarosis, specifically left-upper-eyelid eyelash loss. She reported that her eyelashes gradually fell out and then she experienced complete loss from her left-upper eyelid. The eyelashes eventually began to regrow, but they were very thin and weak initially. The rest of the ophthalmology examination was normal, the visual acuity was good and the optic nerves and macula were healthy. There were no signs of eyelid infection, inflammation, lesions or trauma. The patient was otherwise healthy and did not have any underlying medical conditions. She did not take any medications and had a balanced, healthy diet. The patient reported being under a lot of stress at school due to exams. A full set of blood tests, including an auto-immune screen, were performed and were unremarkable: (connective tissue disease antibodies, PR3 ELISA, MPO ELISA, TPO, (TSH (0.94 mu/L), free T4 (16.7 pmol/L) calcium 2.42 mmol/L, platelet count 229 1o*9/L) B12 412ng/L) (ESR 2mm/h) (CRP <5mg/L) (coeliac antibodies TTIgA 0.3 U/mL) except for low serum folate levels (2.8ug/L) which increased to >20ug/L in subsequent test. Over the next year, the patient's eyelashes grew back and she did not experience any further madarosis.

Discussion

Madarosis can be distressing for a patient and holds clinical significance due to the long list of differential diagnoses. The most common causes of eyelash madarosis are blepharitis or an eyelid infection [2]. However, it can also be caused by trauma, eyelid neoplasm or underlying medical conditions such as autoimmune and endocrine. Additionally, some medications, including certain antibiotics, steroids and chemotherapy drugs, can cause eyelash madarosis. Some cosmetic treatments, such as laser hair removal or lash tinting, may also cause the condition. Trichotillomania is another possible cause that should be considered [2].

Figure 1: Initial presentation.

Figure 2: Six weeks after initial presentation.

In order to properly diagnose the cause of eyelash madarosis, it is important to review the patient's medical history and in particular, undertake a slit-lamp examination looking for inflammation or lesions of the lid margin. Examine the skin more generally looking for conditions such as discoid lupus, rosacea, dermatitis and psoriasis, and order tests, such as a blood tests or skin biopsy. The patient will usually be under the care of an ophthalmologist and / or dermatologist.

Treatment for eyelash madarosis will vary depending on the underlying cause and identifying the predisposing disorder is critical in the management of eyelash madarosis. If all investigations come back as normal and it is considered to be a primary madarosis, the eyelashes will most likely regrow as in the case discussed above. If the cause is an underlying medical condition, treatment of this will usually result in eyelash regrowth.

In cases of severe madarosis, eyelash transplantation can be considered. The procedure involves transplanting hair follicles from other parts of the body, such as the scalp at the back of the head, to the eyelid to create new eyelashes. The transplanted follicles will then grow new eyelashes in the transplanted area. The procedure is performed under local anaesthesia and usually takes between two to four hours to complete. The transplanted lashes will typically take several months to grow fully in and reach their final length, but once they do, they will continue to grow and shed like normal eyelashes. Eyelash transplantation can help improve the appearance of sparse or missing lashes.

References

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2. Khong JJ, Casson RJ, Huilgol SC, Selva D. Madarosis. *Surv Ophthalmol* 2006;**51(6)**:550-60.

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