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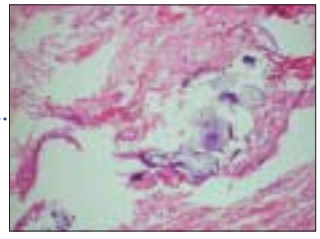

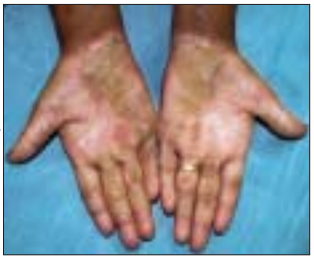

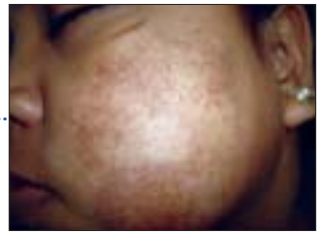

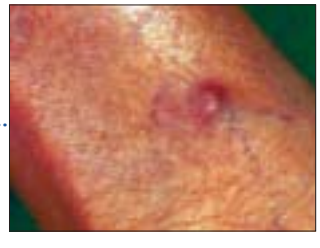

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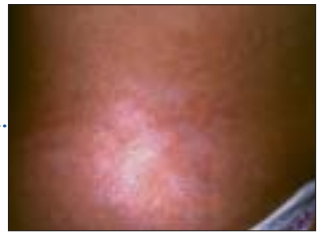

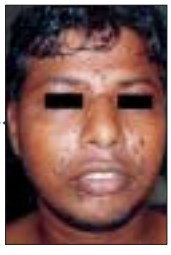

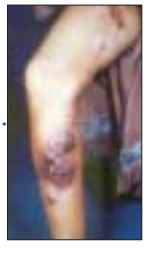

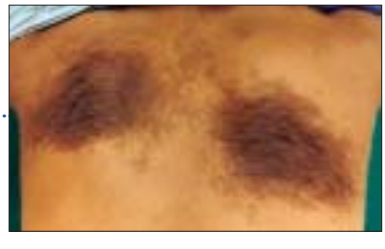

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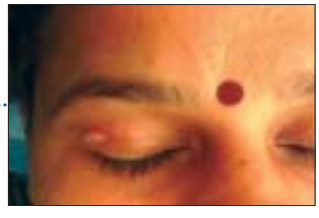

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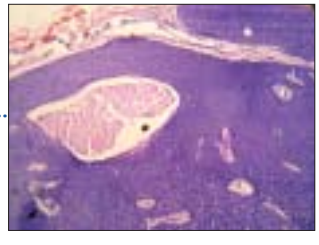

Madarosis: A dermatological marker

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INTRODUCTION

Madarosis is derived from the ancient Greek word "madaros" meaning "bald" and is defined as hair loss of the eyebrows (superciliary madarosis) or loss of eyelashes (ciliary madarosis). Loss of eyelashes is also known as milphosis. In addition to the obvious cosmetic blemish for which the patient usually presents to dermatologists or ophthalmologists, madarosis may be the presenting sign of many systemic diseases and warrants detailed systemic examination and in some cases, consultation with an internist or endocrinologist for further management. This article focuses on the various causes of madarosis.

ETIOLOGY AND ASSOCIATIONS OF MADAROSIS

1. Inflammation

Inflammation of the eyelids (blepharitis) can cause loss of eyelashes. It can be due to infection, seborrhea, trauma or allergy.[1-2]

a) *Infections*: Infection due to *Staphylococcus aureus* results in thin, honey-colored flakes (collarettes) among the eyelashes. Long-standing staphylococcal infection is associated with loss (madarosis), whitening (poliosis) and misdirection (trichiasis) of eyelashes. Madarosis has been reported as the most common ocular lesion (76%) in leprosy patients.[3] The ocular involvement is higher in lepromatous leprosy followed by borderline and tuberculoid leprosy and shows increased incidence with the age of the patient and duration of the disease.[4] Parasitic infestation of eyelids with the mite *Demodex folliculorum* commonly found in the pilosebaceous components of the eyelid can also result in the loss of eyelashes.[5] Mites have been found to be more abundant in older persons, diabetics, and those with *S. aureus* infection of the eyelid. These are characterized by the presence of waxy, cylindrical cuffs (hypertrophic follicular epithelium) around the bases of the eyelashes. The mite consumes epithelial cells, produces follicular distention and hyperplasia and increases keratinization leading (in eyelashes) to cuffing, which consists of keratin and lipid moieties. Follicular inflammation produces edema and results in easier epilation of the eyelashes. It also affects cilia construction so that lashes become brittle and fall.

Systemic fungal infection with paracoccidioidomycosis can present with eyelid involvement in rare cases.[6] Active lesions present with erythematous patches of madarosis to frank destructive ulcers indistinguishable from malignancies while inactive lesions present with loss of eyelashes. Syphilis can also cause madarosis causing lateral brow loss (Hertoghe sign). Other infectious causes include chronic ulcerative blepharitis, tuberculosis, severe acute bacterial infections such as scarlet fever, viral infections such as herpes zoster, smallpox, measles, hepatitis, and chlamydia trachomatis infection.[1-2,7]

b) *Trauma* from rubbing or plucking may be the cause of unilateral or bilateral lash loss.

c) *Allergy*: The loss of lashes may be secondary to allergy to the use of eye cosmetics such as mascara. Waterproof 'mascaras' are the most difficult to remove and can take too many lashes with them.

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2. Autoimmune disorders

Loss of eyebrows and eyelashes can occur in association with alopecia areata. Alhough loss of scalp hair is usually present, rarely madarosis may be the presenting sign.[8-9] Discoid lupus erythematosus (DLE) usually presents with lesions on the sun-exposed areas.[10-11] Periocular involvement occurs uncommonly and may progress from eyelid erythema to scarring and madarosis. However, madarosis may be the presenting sign of DLE in the absence of any history of preceding erythema and scarring and should therefore be considered in the differential diagnosis of chronic blepharitis that persists despite usual medical management and eyelid hygiene. Madarosis has also been reported to occur in systemic lupus erythematosus and scleroderma.

3. Tumors

Benign and malignant tumors of the eyelids such as chalazion, squamous cell carcinoma, basal cell carcinoma, sebaceous carcinoma, lymphomas and sclerosing sweat duct carcinoma of the eyelid can present with loss of eyelashes.[1-2,12-13]

4. Endocrine disorders

Hair follicle activity is affected in pathologic states such as hypothyroidism or hyperthyroidism.[14-15] Changes of hair growth and hair structure may be the first clinical sign of a thyroid hormonal disturbance as a result of the influence on the cell cycle kinetics of the hair follicle cells. In hyperthyroidism, hair changes include thinning, breaking off, shortening of the hair and patchy areas of hair loss. Eyelash loss has been reported as an early sign in hyperthyroidism.[16] In hypothyroidism, the hair may become dull, brittle and coarse, with reduced diameter and may involve the eyelashes and brows.[17] Madarosis may also be associated with hypopituitarism and hypoparathyroidism.

5. Congenital causes

Loss of eyelashes, in association with other ocular abnormalities, has been reported in congenital ichthyosiform erythroderma, lamellar ichthyosis, hereditary ectodermal dysplasia syndrome, congenital atrichia, cryptophthalmos, Ehlers Danlos syndrome and lid coloboma.[1-2,18]

6. Drugs and toxins

Idiosyncratic reaction resulting in unilateral madarosis and facial alopecia has been reported secondary to long-term use of Botulinum A injections for orofacial dystonia.[19] Drugs such as miotics, anticoagulants, anticholesterol drugs, antithyroid drugs, boric acid, bromocriptine, propranolol, valproic acid and chronic epinephrine therapy have been reported to cause loss of eyelashes.[1-2] Ciliary madarosis has also been reported following cocaine use.[20] Intoxication with arsenic, bismuth, thallium, gold, quinine, and vitamin A can also cause loss of eyelashes.

7. Psychiatric causes

This includes trichotillomania which refers to a rare form of hair/eyelash loss resulting from avulsion of hairs by the patient.[21] It is characterized by compulsive pulling out of one's hair associated with tension or an irresistible urge before pulling, followed by pleasure or relief. The hairs are broken at different levels, they may be tufted, tortuous and some hair fibers may be abnormally longer than others. The hair follicles may be prominent.

8. Miscellaneous

Dermatological conditions such as acanthosis nigricans can be associated with ectodermal defects. Familial acanthosis nigricans has been reported with madarosis.[22] Loss of eyelashes has also been reported in association with Vogt-Koyanagi syndrome, epidermolysis bullosa, rosacea, psoriasis, metabolic diseases such as mitochondriopathy, adrenoleukodystrophy, malnutrition, Meige syndrome, sickle cell anemia, HIV infection, post- proton beam irradiation for tumors of the choroid of the eye, eyelid tattooing, thermal injury and cryotherapy.[1-2,23-26]

TREATMENT

Identification of the cause and its treatment will lead to reversal of madarosis in most cases. Madarosis can be camouflaged by eyeliner, artificial lashes affixed by methacrylate-based adhesive or permanent pigment tattooing. Interlesional triamcinolone can be tried in the case of loss of brows.[27] Surgical repair of the traumatic madarosis can be done but good thickness of the eyelashes and ideal direction of their growth are difficult to achieve.[28]

REFERENCES

1. Roy F, editor. Ocular syndromes and systemic diseases. Grune and Stratton: New York; 1985. p. 115-7.
2. Duke-Elder System of Ophthalmology. The Ocular Adnexa, Part I: Diseases of the Eyelashes. Henry Kimpton: London; 1974. p. 377-82.
3. Soshamma G, Suryawanshi N. Eye lesions in leprosy. Lepr Rev 1989;60:33-8.

4. Dana MR, Hochman MA, Viana MA, Hill CH, Sugar J. Ocular manifestations of leprosy in the USA. Arch Ophthalmol 1994;112:626-9.
5. Clifford CW, Fulk GW. Association of diabetes, lash loss and Staphylococcus aureus with infestation of eyelids by Demodex folliculorum (Acari: Demodicidae). J Med Entomol 1990;27:467-70.
6. Cruz AA, Zenha F, Silva JT Jr, Martinez R. Eyelid involvement in paracoccidioidomycosis. Ophthal Plast Reconstr Surg 2004;20:212-6.
7. Sood GC, Sofat BK, Mehrotra SK, Chandel RD. Entropion and madarosis in erythema multiforme. Indian J Dermatol 1973;18:21-2.
8. Offret H, Venencie PY, Gregoire-Cassoux N. Madarosis and alopecia areata of eyelashes. J Fr Ophtalmol 1994;17:486-8.
9. Elston DM. What is your diagnosis? Alopecia areata of the eyelashes. Cutis 2002;69:19-20.
10. Selva D, Chen CS, James CL, Huilgol SC. Discoid lupus erythematosus presenting as madarosis. Am J Ophthalmol 2003;136:545-6.
11. Pandhi D, Singal A, Rohtagi J. Eyelid involvement in disseminated chronic cutaneous lupus erythematosus. Indian J Dermatol Venereol Leprol 2006;72:370-2.
12. Levy J, Cagnano E, Benharroch D, Monos T, Lifshitz T. Collision sebaceous and basal cell carcinomas of the eyelid. Ann Diagn Pathol 2006;10:157-9.
13. de Gottrau P, Holbach LM, Naumann GO. Palpebral nodule with focal madarosis: Neoplasm or chalazion? Apropos of a case. J Fr Ophtalmol 1993;16:122-4.
14. Rook A. Endocrine influences on hair growth. Br Med J 1965;1:609-14.
15. Comaish JS. The thyroid and hair growth. Semin Dermatol 1985;4:4-8.
16. Jordan DR, Ahuja N, Khouri L. Eyelash loss associated with hyperthyroidism. Ophthal Plast Reconstr Surg 2002;18:219-22.
17. Mahto RS. Ocular features of hypothyroidism. Br J Ophthalmol 1972;56:546-9.
18. Cruz AA, Menezes FA, Chaves R, Pinto Coelho R, Velasco EF, Kikuta H. Eyelid abnormalities in lamellar ichthyoses. Ophthalmology 2000;107:1895-8.
19. Kowing D. Madarosis and facial alopecia presumed secondary to botulinum toxin injections. Optom Vis Sci 2005;82:579-82.
20. Tames SM, Goldenring JM. Madarosis from cocaine use. N Engl J Med 1986;314:1324.
21. Mawn LA, Jordan DR. Trichotillomania. Ophthalmology 1997;104:2175-8.
22. Chuang SD, Jee SH, Chiu HC, Chen JS, Lin JT. Familial acanthosis nigricans with madarosis. Br J Dermatol 1995;133:104-8.
23. Finsterer J, Brunner S. Madarosis from mitochondriopathy. Acta Ophthalmol Scand 2005;83:628-30.
24. Rubegni P, Fimiani M, Tosi GM, De Aloe G, Miracco C, Andreassi L. Conjunctival edema and alopecia of the external third of the eyebrows in a patient with Meige syndrome. Arch Clin Exp Ophthalmol 2000;238:98-100.
25. Mansour AM. Adnexal findings in AIDS. Ophthal plast Reconstr Surg 1993;9:273-9.
26. Tsina EK, Lane AM, Zacks DN, Munzenrider JE, Collier JM, Gragoudas ES. Treatment of metastatic tumors of the choroid with proton beam irradiation. Ophthalmology 2005;112:337-43.
27. Draelos ZK, Yeatts RP. Eyebrow loss, eyelash loss and dermatochalasis. Dermatol Clin 1992;10:793-8.
28. Kataev MG, Filatova IA. Surgical treatment of traumatic madarosis. Vestn Oftalmol 1997;113:16-9.