

# WHAT LIES BENEATH

---

## Clinical, dermoscopy and histopathological findings in a case of lipid proteinosis

Miguel Remigio T. Maralit, MD<sup>a</sup>; Johannes F. Dayrit, MD, FPDS<sup>a</sup>; Emmerson Gale S. Vista, MD, FPDS<sup>a</sup>; Abigael T. Villanueva, MD, DPDS<sup>a</sup>

**Introduction:** Lipid proteinosis is a rare autosomal recessive genodermatosis with only approximately 300 cases reported worldwide. This condition is due to the loss of function mutation of the ECM1 gene which encodes for extracellular matrix protein 1 (ECM1), a secretory protein that promotes angiogenesis and is a negative regulator of endochondral bone formation.

**Case summary:** We report a case of a 23-year-old male who presented with chronic recurrent verrucous and waxy lesions on the face and body, diffuse alopecia of the scalp, and hoarseness of voice. Lesions heal leaving scars. Dermoscopy of the eyelid margins show white to yellowish clods with accentuated brownish halo. Lesions on the nape show multiple follicular symmetric whitish-yellow clods with brownish halo and well-defined borders. Lesions on the elbows show a reticular pattern with white clods and diffusely distributed brown dots. Histopathology shows basket-woven stratum corneum, spongiosis of the epidermis with vacuolar alteration, and formation of clefts in the basal cell layer. The papillary dermis shows hyaline material which also surrounds the blood vessel and the adnexal structures. There is mild superficial and mid dermal perivascular inflammatory infiltrate of lymphocytes. PAS highlights eosinophilic material in the papillary dermis which also surrounds the blood vessels and the adnexal structures. Alcian blue staining reveals positive staining for hyaline deposits.

**Conclusion:** This report highlights the importance to recognize the clinical, dermoscopic and histopathological findings of lipid proteinosis.

### INTRODUCTION

Lipid proteinosis is a rare autosomal recessive disorder with only about 250 to 300 reported cases worldwide.<sup>1</sup> The condition is due to loss of function mutation of the ECM1 gene which encodes for extracellular matrix protein 1 (ECM1), a secretory glycoprotein that promotes angiogenesis and is a negative regulator of endochondral bone formation.<sup>1,2,5</sup> It results in the deposition of amorphous hyaline material in the skin, mucosa, and other internal organs.<sup>3</sup> We describe a 23-year-old male with a 22-year history of recurrent and progressive papular lesions.

---

a. Research Institute for Tropical Medicine, Filinvest Corporate City, Alabang, Muntinlupa City, Philippines

Source of funding: none

Conflict of interest: none

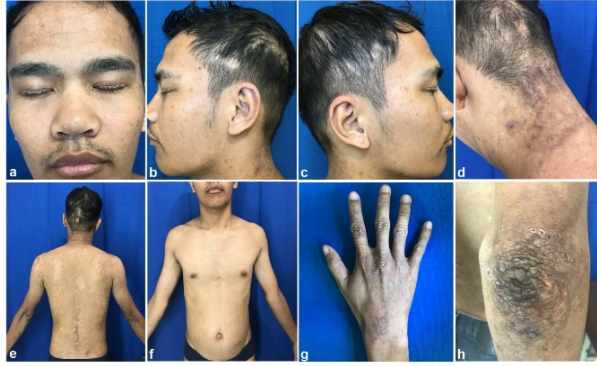
Corresponding author: Miguel Remigio T. Maralit, MD

Email : miguelmaralitmd@yahoo.com

### CASE REPORT

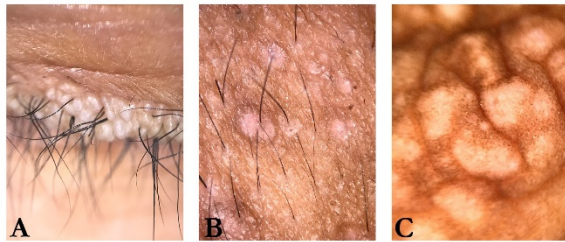
A 23-year-old man with Fitzpatrick skin phototype IV skin consulted at the Out-patient clinic due to persistent papules on his eyelid margins, alopecia, and multiple ulcerating lesions on his body. According to the patient, the first lesions appeared during childhood and that there have been recurrences and spontaneous regression of some lesions over the years, leaving atrophic scars. The patient also reported frequent episodes of hoarseness, which he said started when he was 13 years old. There is no known consanguinity in the family and no neurologic disturbances were reported. The patient mentioned seeing similar lesions in his younger brother.

Dermatological examination reveals skin colored hyperkeratotic verrucous papules found on the eyelid margins, nape, trunk, axilla, elbows, hands, knees, and feet. Scarring alopecia is noted in the parietal and occipital scalp and multiple mottled hypopigmented atrophic plaques are seen on the trunk back and extremities.



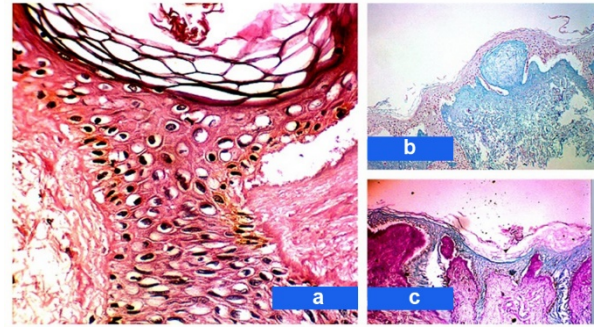
**Figure 1.** (a) moniliform blepharosis on the eyelid margins, (b) (c) scarring alopecia, (d) hyperkeratotic verrucous papules on the nape, (e) (f) atrophic scars on the back and trunk, and (g) (h) verrucous plaques on the dorsum of the hand and elbows.

Dermoscopy of the eyelid margins shows white to yellowish clods with accentuated brownish halo. Lesions on the nape show multiple follicular symmetric whitish-yellow clods with brownish halo and well-defined borders. Lesions on the elbows show a reticular pattern with white clods and diffusely distributed brown dots.



**Figure 2.** Dermoscopy. (A) Eyelid margins: white to yellowish clods with accentuated brownish halo. (B) Nape lesions: multiple follicular symmetric whitish-yellow clods with brownish halo and well-defined borders. (C) Elbows: reticular pattern with white clods and diffusely distributed brown dots.

A 4-mm lesional skin punch biopsy shows basket woven stratum corneum, spongiosis of the epidermis with vacuolar alteration, and formation of clefts in the basal cell layer. The papillary dermis shows hyaline material which also surrounds the blood vessel and the adnexal structures. There is mild superficial and mid dermal perivascular inflammatory infiltrate of lymphocytes. PAS highlights eosinophilic material in the papillary dermis which also surrounds the blood vessels and the adnexal structures. Alcian blue staining reveals positive staining for hyaline deposits.



**Figure 3.** Histopathology showing papillary dermis with hyaline material surrounding blood vessels and adnexal structures. Mild superficial and mid-dermal perivascular inflammatory infiltrate consisting of lymphocytes. Periodic Acid Schiff (PAS) highlighting eosinophilic material in the papillary dermis. Alcian blue stains hyaline deposits. (a. H&E, X 400; b. Alcian blue X 40; c. PAS, 100x)

The patient underwent CO<sub>2</sub> laser ablation of the hyperkeratotic papules with the following parameters: ultra-pulse mode, fluence 40 J/cm<sup>2</sup>, and pulse duration 20 J/cm<sup>2</sup>, which resulted in partial resolution of the lesions.

## DISCUSSION

Lipoid proteinosis, also known as hyalinosis cutis et mucosae or Urbach-Wiethe disease, is a rare autosomal recessive disorder due to the loss of function mutation of ECM1.<sup>1</sup> It has cutaneous and extracutaneous features<sup>2</sup>, such as CNS manifestations, problems in phonation<sup>3</sup>, and ophthalmologic problems.<sup>4</sup> Cutaneous manifestations vary as to the extent of dermal infiltration of hyaline. Recurrent blistering may be seen on the face and extremities and is also predominant on sites of trauma. Healing is slow and may present with hemorrhagic crusting and scarring.<sup>6</sup> Verrucous and waxy skin lesions may affect the eyelid margins, face, axilla, knees, and scrotal area. Moniliform blepharosis or the beading of the eyelid margins is a hallmark feature of the condition.

## CONCLUSION

Dermoscopy aids in diagnosing certain genodermatosis like lipoid proteinosis. However, histopathology still remains to be the gold standard in the diagnosis of such cases. A case series is recommended to establish consistent dermoscopic findings for this genodermatosis.

---

## REFERENCES

1. Abril-Jaramillo J, Mondéjar R, Lucas M, García-Bravo B, et.al. Lipoid proteinosis or Urbach-Wiethe disease: description of a new case with cerebral involvement. *Neurologia*. 2017;**32**(2):125–127.
2. Balestri M, Cappelletti S, Valeriani M, et.al. Structural Focal Temporal Lobe Seizures in a Child With Lipoproteinosis. *Pediatr Neurol*. 2015;**52**(1):104–106.
3. Neto SS, Batista JD, Durighetto AF. A case of oral recurrent ulcerative lesions in a patient with lipoid proteinosis (Urbach–Wiethe disease). *Brit J Oral Max Surg*. 2010;**48**(8):654–655.
4. Bahadir S, Cobanoglu U, Kapicioglu Z, et.al. Lipoid proteinosis: A case with ophthalmological and psychiatric findings. *J. Dermatol*. 2006;**33**(3):215–218.
5. Sercu S, Zhang M, Oyama M, et.al. Interaction of Extracellular Matrix Protein 1 with Extracellular Matrix Components: ECM1 Is a Basement Membrane Protein of the Skin. *J Invest Dermatol*. 2009;**129**(7):1836–1867.
6. Law G. Lipoid proteinosis. <https://www.dermnetnz.org/topics/lipoid-proteinosis>. Accessed October 4, 2017.