

Lipoid proteinosis

Demet Kartal¹✉, Salih Levent Çınar¹, Levent Kartal², Özge Şeyda Saka¹, Murat Borlu¹

Abstract

Lipoid proteinosis (LP) is an uncommon, autosomal, recessively inherited disorder. It is typically characterized by hoarseness from early infancy, together with various cutaneous manifestations such as waxy papules, acneiform scarring, and eyelid beading. A 42-year-old woman was admitted to our dermatology outpatient clinic complaining of rigidity of the oral mucosa and limitation in tongue movement. She also had a burning sensation and decreased taste perception in the mouth while eating, as well as hoarseness of voice. She was diagnosed with lipoid proteinosis. The typical cutaneous manifestations of LP include waxy yellow papules with generalized skin thickening on the face, extremities, and trunk. Here we report a case with significant mucosal involvement but less skin involvement.

Keywords: Lipoid proteinosis, Urbach–Wiethe disease

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Introduction

Lipoid proteinosis (LP), also known as *Hyalinosis cutis et mucosae* or Urbach–Wiethe disease, is an uncommon, autosomal, recessively inherited disorder. It is typically characterized by hoarseness from early infancy, together with various cutaneous manifestations such as waxy papules, acneiform scarring, and eyelid beading (moniliform blepharosis) (1, 2). Infiltrative deposits are observed in the nasopharynx, tongue, and vocal cords. Hematoxylin eosin examination shows widespread deposition of hyaline material and disruption of the basement membrane. The hyaline material is Congo-red and periodic acid–Schiff–positive but diastase-resistant (3). Perivascular deposits of collagen types I and II are reduced, whereas types IV and V are increased.

The etiopathogenesis of this disease is still not clear, but it has been postulated to be the result of a lack of extracellular matrix protein 1 (ECM1). Normally ECM1 binds to type 4 collagen, but the lack of this interaction in LP could then result in increased type 5 collagen expression and typical histopathological changes (4). To date, pathogenic mutations in the gene encoding ECM 1 on chromosome 1q21 have been identified in LP (5).

Here we report a case with significant mucosal involvement but less skin involvement.

Case report

A 42-year-old woman was admitted to our dermatology outpatient clinic complaining of rigidity of the oral mucosa and limitation in tongue movement for the previous 2 years. She also had a burning sensation and decreased taste perception in the mouth while eating.

She had no history of visual disturbances, seizures, photosensitivity, or respiratory obstruction. She also had hoarseness of the voice, and she added that her brother has a similar voice problem without any dermatological manifestations. She had been diagnosed with rheumatoid arthritis 4 years previously and had been using systemic steroid and methotrexate (15 mg/week for a month).

Her family history showed that she was the child of non-consanguineous parents.

None of the other family members were affected. Systemic examination revealed no abnormalities. Routine investigations were normal.

Dermatological examination revealed beaded papules on the eyelids. Intraoral examination revealed a thickened, firm, pale, and enlarged crenated tongue, rigidity of the oral mucosa, and xerostomia. The tongue movements were restricted and there were lacerations and infiltration on the upper and lower lip (Fig. 1). Other findings included hyperkeratosis on the buccal, labial, and palatal mucosa, which created a thickened and nodular appearance. Small acral verrucous papules are present on the dorsal sides of the hands.

Indirect laryngoscopy examination revealed headed deposits over the epiglottis and vocal cords (Fig. 2). She refused to have a cranial computerized tomography scan. Based on the clinical history of the case, a provisional diagnosis of LP was made.

A biopsy was taken from the oral mucosa (labial mucosa). Histological examination showed deposits of homogeneous, eosinophilic, hyaline-like material (Fig. 3). The material was strongly PAS-positive and diastase-resistant.

These findings confirmed the diagnosis of LP.

Discussion

Lipoid proteinosis is a rare genetic disease, and a diagnosis can be made on the basis of typical clinical symptoms and verified by histopathology (1, 2). Although this disease seems to be dermatological, LP usually manifests in early infancy with hoarseness of voice due to vocal cord infiltration. Hoarseness of voice presents at birth or in early childhood and becomes prominent within the first few years of life; it can progress to complete aphonia (4, 5).

Our patient had had hoarseness of voice since childhood, and direct laryngoscopy confirmed the presence of fleshy deposits on the palate and vocal cords with restricted movement.

Otolaryngologists should consider LP in the differential diagnosis of voice changes and hoarseness in infancy and childhood.

Although the majority of the cases reported in the literature were born to consanguineous parents, LP has also been seen in siblings born to non-consanguineous parents (6). Our patient's parents were non-consanguineous.

¹Erciyes University Faculty of Medicine, Department of Dermatology and Venereology, Kayseri, Turkey. ²Kayseri Education and Research Hospital, Department of Otorhinolaryngology, Kayseri, Turkey. ✉ Corresponding author: demetkartal@hotmail.com



Figure 1 | Thickened, firm, pale, and enlarged cretated tongue with hyperkeratosis on the buccal, labial, and palatal mucosa; there were lacerations and infiltration on the upper and lower lip.

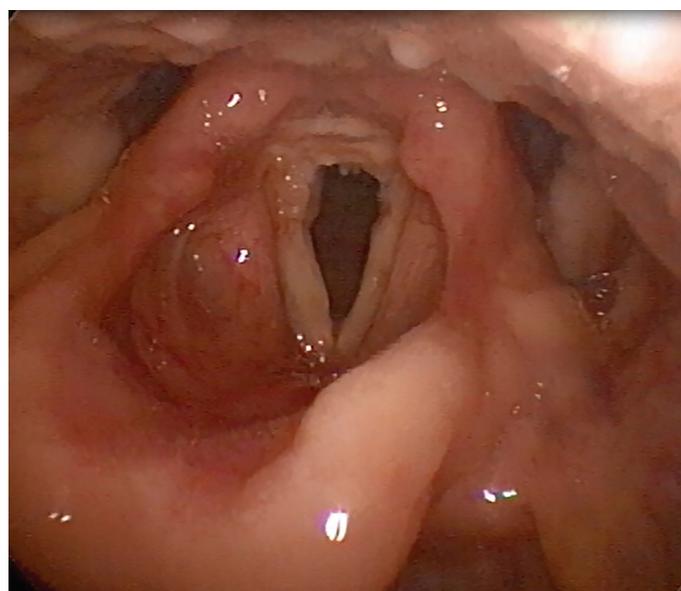


Figure 2 | Headed deposits over the epiglottis and vocal cords.

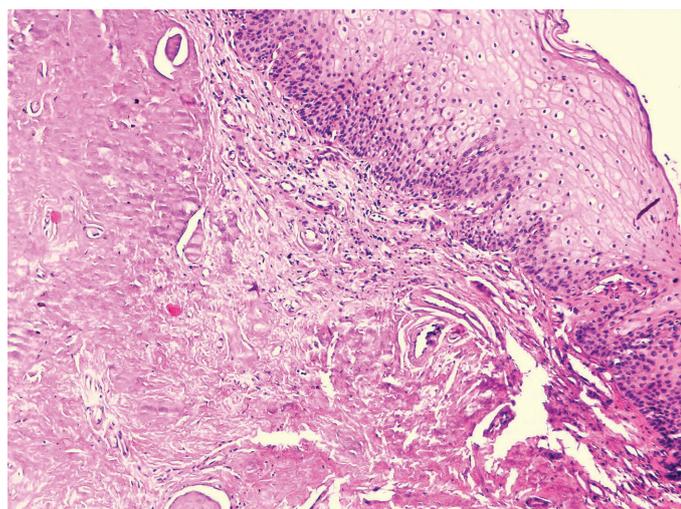


Figure 3 | Deposits of homogeneous, eosinophilic, hyaline-like material.

The typical cutaneous manifestations of LP include waxy yellow papules with generalized skin thickening on the face, extremities, and trunk. Acneiform scarring may be seen, predominantly on the face and trunk. Hyperkeratosis may appear on the knees, hands, buttocks, elbows, and axillae. Acral verrucous papules on the hands were seen in our patient. The classic sign is beaded eyelid papules, as was noted in our case.

In clinical practice, those with LP have a normal life expectancy. Infiltration of the oral mucosa may cause xerostomia and dysphagia. Other mucosal findings include thickening of the sublingual frenum and tongue, limiting tongue movements and thus causing speech difficulties (7). Our patient suffered from xerostomia and rigidity of the oral mucosa. She had previously been admitted to many clinics, and a diagnosis of Sjögren syndrome was considered. LP is a rare disease but must be included in the differential diagnosis of oral mucosa lesions that include thickening of the oral mucosa and limiting of tongue movement. Differential diagnosis primarily includes erythropoietic protoporphyria, colloid millium, and pseudoxanthoma elasticum.

Several reports have described variable success in treating skin and vocal cord lesions with dermabrasion, carbon dioxide laser surgery, dimethyl sulfoxide, D-penicillamine, corticosteroids, acitretin, etretinate, carbon dioxide laser, Er:YAG laser, and surgical intervention (8, 9). Microlaryngoscopic excision of laryngeal deposits improves airway access and voice quality. Seizures should be assessed and managed by a neurologist, using antiepileptic drugs (8).

Our case has significant mucosal involvement but less skin involvement. This feature caused a late diagnosis. LP is a rare disease, but careful probing into the patient's history along with a detailed clinical examination followed by essential investigation is necessary to achieve the diagnosis.

References

1. Siebenmann F. Über Mitbeteiligung der Schleimhaut bei allgemeiner Hyperkeratose der Haut. [Involvement of mucosa in general hyperkeratosis of skin]. *Arch Laryng Rhin.* 1908;20:101-9. German.
2. Urbach E, Wiethe C. Lipoidosis cutis et mucosae. *Virchows Arch.* 1929;273:285-319.
3. Touart DM, Sau P. Cutaneous deposition diseases. Part I. *J Am Acad Dermatol.* 1998;39:149-71.
4. Hamada T. Lipoid proteinosis. *Clin Exp Dermatol.* 2002;27:624-9.
5. Hamada T, Mclean WHI, Ramsay M, Ashton GH, Nanda A, Jenkins T, et al. Lipoid proteinosis maps to 1q21 and is caused by mutations in the extracellular matrix protein 1 gene (ECM1). *Hum Mol Genet.* 2002;11:833-40.
6. Nanda A, Alsaleh QA, Al-Sabah H, Ali AM, Anim JT. Lipoid proteinosis: report of four siblings and brief review of the literature. *Pediatr Dermatol.* 2001;18:21-6.
7. Ramsey ML, Tschen JA, Wolf JE. Lipoid proteinosis. *Int J Dermatol.* 1985;24:230-2.
8. Vahidnezhad H, Youssefian L, Uitto J. Lipoid proteinosis. In: Pagon RA, et al, editors. *GeneReviews.* Seattle, WA: University of Washington, Seattle; 1993-2016.
9. Çalışkan E, Açıkgöz G, Tunca M, Koç E, Arca E, Akar A. Treatment of lipoid proteinosis with ablative Er:YAG laser resurfacing. *Dermatol Ther.* 2015;28:291-5.