

Lipoid proteinosis (Urbach-Wiethe disease) in two siblings

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ABSTRACT

Lipoid proteinosis is a very rare autosomal recessive disorder characterized by deposition of hyaline material in the skin and the upper aerodigestive tract. Hoarseness of voice occurs very early in life and airway obstruction may occur. Characteristic skin lesions include multiple brown atrophic scars over face and distal extremities, beaded papules over the margins of the eyelids and verrucous nodules over the friction bearing areas (elbows, knees). The overall prognosis is good. There is no definitive treatment.

Key words: Autosomal recessive disease, hyalinosis cutis et mucosae, lipoid proteinosis, Urbach-Wiethe disease

INTRODUCTION

Lipoid proteinosis, also known as hyalinosis cutis et mucosae (Urbach-Wiethe disease), is a rare autosomal recessive disease usually presenting with mucocutaneous lesions starting since birth. It was first reported by Erich Urbach and Camillo Weith in 1929. Till date, around 300 cases have been reported in literature. Rarely, two siblings are affected, particularly in consanguineous marriages. All the clinical features of the disease may not be present in all cases. The presence of all characteristic clinical features of Urbach-Wiethe disease in both siblings in our case makes this a unique case report.

CASE REPORT

An 11-year-old male patient, born to consanguineous parents, presented with hoarseness of voice since early childhood, multiple scars over the skin of face and dorsum of hands, and papules over elbows and buttocks. One of his two younger sisters, 9 years old, had similar complaints. Patient was normal at birth, but after 3 days of life developed weak cry and hoarseness of voice. At 2 months of age skin lesions began to appear. Initially, only face was involved; subsequently, lesions appeared over the buttocks, knees, and elbows. At presentation, both siblings had multiple brownish atrophic scars over the face [Figure 1].

Hypertrophied and hyperkeratotic nodules were present over the elbows [Figure 2]. Beaded papules were seen along the margins of the eyelids [Figure 3]. The tongue was thick and could not be protruded [Figure 4]. Patchy diffuse alopecia was seen in both the siblings. Under general anesthesia, direct laryngoscopic examination was done in the male patient. Both vocal cords were thickened, though the glottic space was adequate. The mucosa over rest of the larynx was pale and irregular. Histopathology of a verrucous papule from the elbow revealed diffuse dermal deposition of a pale, homogenous, eosinophilic, hyaline-like material around blood vessels and adnexa (sweat glands), which was Congo-red-negative and Periodic acid-Schiff (PAS) positive [Figure 5]. Epidermal hyperkeratosis was also noted. Radiograph of the skull did not reveal any calcifications. Biochemical parameters were within normal limits.

Based on the typical clinical and histopathological features, the diagnosis of lipoid proteinosis was made.

DISCUSSION

Lipoid proteinosis is characterized by infiltration of hyaline material into the skin, oral cavity, larynx, and internal organs.^[1] The genetic abnormality lies in the *loss-of-function* mutation in chromosome 1 at 1q21, the extracellular matrix protein 1 (ECM1) gene.^[2]

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Figure 1: Multiple scars over face



Figure 2: Warty nodules over elbow

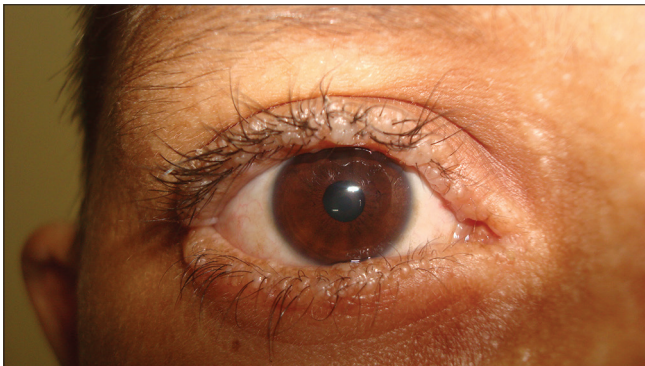


Figure 3: Beaded papules along the margins of eyelids



Figure 4: Thick and immobile tongue

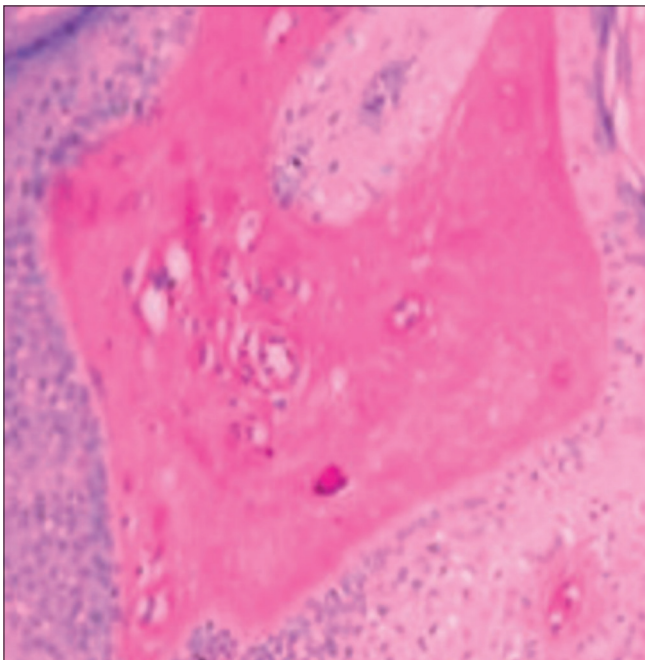


Figure 5: PAS-positive, homogenous, eosinophilic, hyaline-like material (PAS stain; Magnification $\times 10$)

The symptoms vary from individual to individual. The presenting symptom may be hoarseness of voice during infancy as was in our case. Skin lesions appear during childhood and consist of yellowish papules and nodules that may coalesce to form

plaques on the face, forearms, neck, genitals, and dorsum of the fingers and scalp.^[3] Similar lesions are also found on lips, undersurface of tongue, uvula, and larynx. Laryngeal involvement may lead to respiratory compromise necessitating a tracheostomy. Tongue is thickened and firm on palpation and cannot be protruded completely. Translucent-beaded papules along the margins of the eyelids are the most characteristic clinical feature^[4] as seen in our case. Hypertrophied and hyperkeratotic nodules occur at friction sites such as elbows and knees. Associated anomalies may include dental abnormalities, epilepsy, and recurrent parotitis.

The diagnosis is essentially clinical. The clinical triad of early onset hoarse voice, typical skin lesions, and beaded papules around eyelids confirms the diagnosis. Various laboratory tests can be helpful in supporting the diagnosis. The skin tissue stains strongly with PAS as it contains hyaline. Immunohistochemical skin labelling for antibodies against the EMC1 protein has been shown to be reduced in Urbach-Wiethe disease.^[5] Staining with anti-type III, anti-type IV, or anti-type VII collagen antibodies reveals bright, thick bands at the dermoepidermal junction. More than half of the patients have shown bilaterally symmetrical damage in the amygdaloid region on computed tomography scan studies.^[6]

The disease is compatible with a normal life span. The disfiguring lesions and the permanent hoarseness may seriously

impair quality of life. There is no definitive therapy at present, although dimethyl sulfoxide, oral retinoids, and dermabrasion have been shown to reduce skin lesions. Surgical management consists of microlaryngeal surgery of the vocal cords using CO2 laser to reduce their thickness and hence hoarseness.

The Urbach-Weithe disease should be considered in the differential diagnosis whenever a child presents with a weak cry or a hoarse voice during early life.

REFERENCES

1. Di Giandomenico S, Masi R, Cassandrini D, El-Hachem M, De Vito R, Bruno C, *et al.* Lipoid proteinosis: Case report and review of the literature. *Acta Otorhinolaryngol Ital* 2006;26:162-7.
2. Hamada T, McLean WH, 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.
3. Hamada T. Lipoid proteinosis. *Clin Exp Dermatol* 2002;27:624-9.
4. Caro I. Lipoid proteinosis. *Int J Dermatol* 1978;17:388-93.
5. Chan I, Liu L, Hamada T, Sethuraman G, McGrath JA. The molecular basis of lipoid proteinosis: Mutations in extracellular matrix protein 1. *Exp Dermatol* 2007;16:881-90.
6. Siebert M, Markowitsch HJ, Bartel P. Amygdala, affect and cognition: Evidence from 10 patients with Urbach-Wiethe disease. *Brain* 2003;126:2627-37.

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