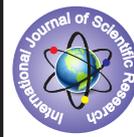


LIPOID PROTEINOSIS – A rare skin disorder - case series



Dermatology

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ABSTRACT

Lipoid proteinosis is a very rare autosomal recessive disorder with only three hundred cases reported so far worldwide. It is characterized by deposition of hyaline material in the skin and upper aero-digestive tract. We report a case series of three patients with multiple facial scars, beaded skin lesions and hoarseness of voice diagnosed as lipoid proteinosis on the basis of clinical and histopathological features. Although there is no definitive treatment, the overall prognosis is good.

INTRODUCTION-

Lipoid proteinosis, also known as hyalinosis cutis et.mucosae (Urbach-Wiethe disease), is a rare autosomal recessive disease usually presenting with mucocutaneous lesions since birth. Till date, around 300 cases have been reported in literature. Hoarseness of voice occurs very early in life resulting in airway obstruction in some. 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).^[1,2] Herein a case series of four patients who presented during a period of four years is reported.

CASES

A 14 year old male patient born out of non-consanguineous marriage presented with hoarseness of voice and history of blisters over skin in early childhood. Parents gave history of weak cry at the time of birth. At two months of age, skin lesions began to appear. Initially blisters appeared which healed with scars over bilateral forearms followed by face, trunk, elbows and knees. At the time of presentation patient had multiple atrophic scars over the face, upper back, chest. Multiple discrete skin coloured firm, waxy papules over bilateral dorsa of hands, periorbital area, elbows and knee with beaded papules on eyelids margin were observed (Figure 1 & 2). Patchy diffuse non-scarring alopecia of scalp was present. Dermal deposits led to appearance of early onset leonine facies. Patient was unable to protrude tongue due to thickened sublingual frenulum. Direct laryngoscopic examination showed boggy mucosa around base of tongue and posterior pharyngeal wall, pale mucosa over epiglottis with cobblestone appearance. Bilateral vocal cord movement was normal. Radiography of skull did not reveal any calcification. All laboratory reports were within normal limits. Diagnosis of lipoid proteinosis was confirmed based on clinical and histopathological findings.

A 19 yr old female born out of second degree consanguineous marriage presented with multiple asymptomatic lesions over body since age of 2 years. Oral intolerance to hot and spicy food was elicited. Itchy lesions over chest, upper limb and lower limb which gradually healed leaving hyperpigmentation. Examination revealed multiple skin coloured papules over both eyelid margins (Figure 3), hyperpigmented macules over forehead with scars, hyperpigmented

verrucous plaques over chest and atrophic scars over upper and lower limb. Scarring alopecia over scalp (Figure 4), multiple skin coloured papules over finger tips and tapering of fingertips were seen. Oral mucosal induration with loss of lingual papillae were noted. On indirect laryngoscopy granulation was seen over supraglottic fold and false vocal cords. Chest X-ray, ECG, 2 D echo, ultrasound abdomen were normal. Skin biopsy was suggestive of lipoid proteinosis. Hence clinical and pathological features clinched diagnosis of lipoid proteinosis.

A 12 years old female presented with multiple knobby lesions over face and extremities since age of 3 years which initially were small and gradually increased in size and number. Multiple scars over face (Figure 5) and limbs, yellowish discolouration of oral mucosa, difficulty in moving tongue, multiple verrucous plaques of varying sizes over back (Figure 6), hyperpigmented hyperkeratotic plaques over both elbows and knee joints were present. She also had multiple verrucous plaques of varying sizes over elbows and gluteal areas. History of crops of bullae and pustules was elicited which healed with scars. Beaded papules along eyelid margins were noted. All haematological and radiological investigations were within normal limits. Skin biopsy was conclusive of lipoid proteinosis.

A 28 years old male presented with atrophic scars over face since age of 4 years which progressed gradually to present size. Skin was susceptible to trauma. Parents offered history of hoarseness of voice since birth in patient and his elder brother. Beaded papules along the margins of upper and lower eyelid were seen. He experienced no difficulty in protruding tongue. Clinical diagnosis of lipoid proteinosis was confirmed on histopathology.

Histopathology of revealed hyaline deposits in the papillary dermis (Figure 7), perivascular and peri-appendageal location (Figure 8) which was PAS positive and diastase resistant.

Discussion

Lipoid proteinosis is characterized by infiltration of hyaline material into the skin, oral cavity, larynx, and internal organs. The disorder is caused by mutation in the extracellular matrix protein 1 (ECM1) gene^[3]. Mutation in EMC1 in lipoid proteinosis leads to loss of

function of EMCI.^[2]

The presenting symptom may be hoarseness of voice since infancy as seen in our case. Skin lesions appear during childhood and consist of yellowish papules that may coalesce to form plaques on the face, forearms, neck, genitals, and dorsum of the fingers and scalp. 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. Beaded papules along the margins of the eyelids (moniliform blepharosis) is the most characteristic clinical feature as observed in our case.^[1,2] Hypertrophied and hyperkeratotic nodules occur at friction sites such as elbows and knees. Associated anomalies may include epilepsy, recurrent parotitis, xerostomia, dental caries.^[2] The diagnosis is essentially clinical. The combination of hoarseness from early childhood, thickening of the tongue and frenulum and cutaneous nodules suggest the diagnosis.^[1]

Differential diagnosis includes erythropoietic protoporphyria which causes waxy papules and depressed scars but the scars are confined to sun-exposed skin. Rarely, hyaline deposition in facial skin caused by erythropoietic protoporphyria may mimic lipid proteinosis. Xanthomatosis and amyloidosis are also excluded by the histological appearances. In adults, other differential diagnoses include lichen myxoedematosus and myxoedema with hoarseness.^[5]

Various laboratory tests can be helpful in supporting the diagnosis. The skin tissue stains strongly with PAS as it contains hyaline.^[4] Immunofluorescence labelling for Type IV collagen confirms the basement membrane thickening. Staining for Type I and III collagen is decreased in upper dermis; the deposits of hyaline material do not stain with anticollagen antibodies.^[1] More than half of the patients have shown bilaterally symmetrical damage in the amygdaloid region on computed tomography scan studies.

Although the disease is compatible with a normal life span, the disfiguring lesions and permanent hoarseness may seriously impair quality of life which warrants counselling and regular monitoring for timely detection and management of any untoward complications. We started the patient on 0.025% tretinoin gel for scar resolution. As such 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.^[1,2] The disease is not life-threatening except for the respiratory obstruction in severe cases.^[6]

Legends



Figure 1- Shows multiple atrophic scars over the face with beaded papules on eyelids margin. Multiple discrete skin colored firm, waxy

papules over bilateral dorsa of hands, periorbital area, elbows and knee



Figure 2- Shows multiple waxy papules and scars over bilateral elbows



Figure 3- Multiple skin coloured papules over both eyelid margins.



Figure 4- Scarring alopecia over scalp.



Figure 5- Multiple scars over face



Figure 6- Multiple scars over back

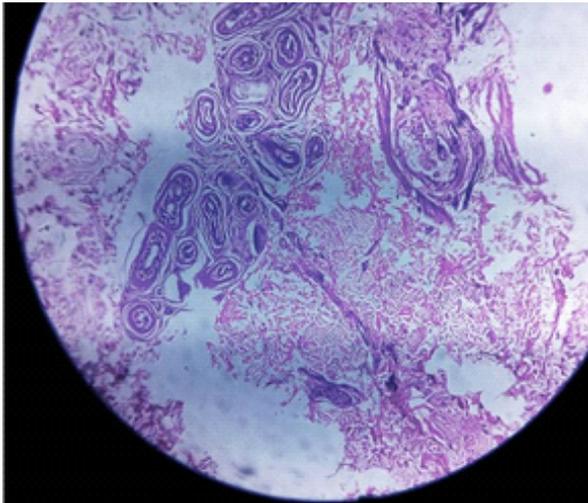


Figure 7 – Shows hyaline deposits in the papillary dermis , perivascular and peri- appendageal location on H & E stain on scanners view

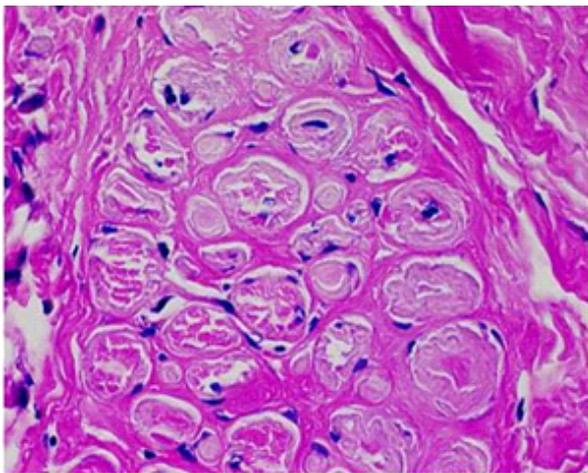


Figure 8- Showing peri-ecrine deposits of pink hyaline material on H & E stain at 10x magnification

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