

## **Colloid milium: a rare cutaneous deposition disease**

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### **Abstract**

Colloid milium is a rare degenerative skin disorder known by the development of small translucent, yellowish brown papular nodules or plaques, generally located in sun exposed areas. Clinically they are of two types, adult and juvenile type. We present a case of adult type Colloid milium in a 60 years old female patient with clinical and histological findings unmistakable of the condition. She was treated with IPL (Intense Pulsed Light) laser following unsatisfactory response with dermabrasion.

### **Introduction**

Colloid milium is a rare cutaneous deposit disease characterized by the presence of multiple, dome-shaped, translucent yellowish brown papules and plaques developing on sun-exposed areas of skin showing colloid in dermal papillae on histology.<sup>1,2</sup> There are 2 broad variants namely an adult-onset type (nodular colloid degeneration), and a juvenile form.<sup>3,4</sup> The origin of the colloid deposition in the dermis is thought to be due to degeneration of elastic fibers in the adult form and due to degeneration of UV-transformed keratinocytes in the juvenile form. No known figures exist on prevalence, but more than 100 case reports are present in the world literature.<sup>3</sup> The condition is more frequent in fair-skinned individuals and adult form is more common in elderly males. The rare juvenile form occurs before puberty and is often familial. Patients are usually asymptomatic, but they may have transient itching in affected areas. Skin lesions are waxy, partially translucent, firm papules that occur in

crops, ranging from 1-5 mm in diameter. Lesions reach their peak within 3 years, after which they are more or less static. Gelatinous material can be expressed on pressing the lesions. In the nodular form, larger nodules or plaques develop. Most common sites of involvement are cheeks, periorbital area, nose, ears, and neck. Lesions may also occur on the back of the hands and forearms.<sup>1,4,5</sup> The classic adult and nodular forms are believed to be due to excessive sun exposure as the lesions mostly occurring on skin exposed sites in individuals with fair complexions and outdoor occupations.<sup>6</sup> The juvenile form is inherited, perhaps suggesting an inherited susceptibility to UV light.<sup>5</sup> Trauma, gas oils, phenols and long term use of hydroquinone bleaching creams may be contributory factors in addition to light and petroleum constituents.<sup>1,4,7</sup> On histology, typical fissured eosinophilic colloid masses are seen in the dermis. Electron microscopy may sometimes be necessary to distinguish colloid from amyloid as under light microscopy both can show same staining pattern. Upon electron microscopy, wavy bundles of filaments are seen of colloid, in contrast to the straight, nonbranching, filaments of amyloid.<sup>8</sup> Dermabrasion, cryotherapy, and diathermy treatments have been tried with limited success.<sup>1,4</sup> The Er:YAG laser may be more successful than dermabrasion.<sup>9</sup> Genetic counseling is advisable for the rare juvenile form. Sun avoidance seems sensible. We tried intense pulse light (IPL) with good response and to the best of our knowledge it was not used before.

### **Case Report**

A 60 years old female presented with history of



Figure 1. Yellow brown papules and plaques over forehead, nose, cheeks, and Upper lip with background erythema.

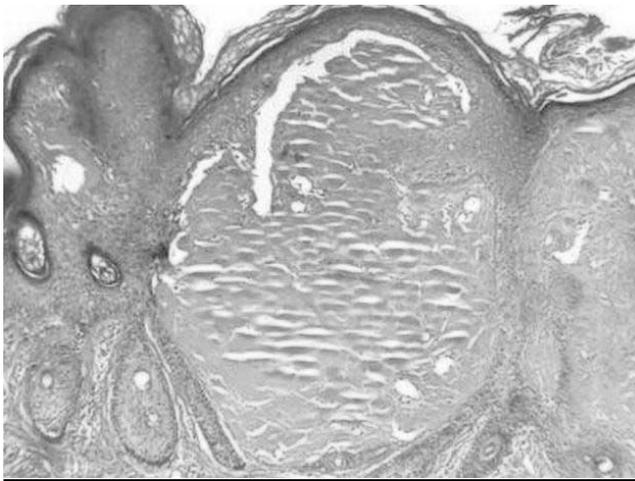


Figure 2. Histology showing colloid material accumulation with horizontal fissuring in the upper dermis pressing upon the epidermis.

yellow brown papules and plaques over forehead, nose, cheeks, and upper lip that appeared 6 years ago. Initially the patient had moderate itching and burning on exposure to sunlight. After a minor trauma to the nose lesions gradually increased to involve the forehead, cheeks, and upper lips over a period of 4 years and remained unchanged for the last 3 years. On examination lesions over forehead and nose appeared as nodular plaques (Figure 1), felt soft and released their gelatinous contents when pressed hard. Laboratory tests including complete blood cell count, liver functions, and urine analysis were within normal limits. Histological examination of one of the site revealed deposition of amorphous material with horizontal fissuring in papillary dermis. Wavy appearance of amorphous hyaline deposits due to horizontal clefts differentiated it from amyloidosis (Figure 2). There was also element of dermal elastosis. Dermabrasion had unsatisfactory response and due to poor compliance of the patient IPL laser was tried. IPL used was

"Apollo-II (Swot, Ver- 3.0) made of Schanghai Wonderful Opto-Electric Tech Co, Ltd. Vessel removal system (VR) Mode-3 was used. Energy density was 25J/sec with First pulse duration (T1= 4ms), First delay (D1=20ms) and Second pulse (T2=5ms). Patient showed a considerable improvement with regression of nodules and plaques, after 4 sessions of treatment. Nodules and plaques regressed significantly resulting in smooth appearance of facial skin. She was advised two more sessions of IPL and then regular follow up after every three months for one year, but she never reported back and was lost to further follow up.

## Discussion

Colloid milium is also called colloid degeneration of the skin or dermal hyalinosis. The condition may not represent a single entity and should be regarded as one of cutaneous deposit diseases.<sup>1,2</sup> The rare juvenile form can be distinguished from a non- familial adult form by occurring in later life and histopathologically by colloid masses in the upper dermis and absence of elastosis, whereas in adult form, the colloid is located in the upper and mid dermis, with a layer of papillary dermis spared (Grenz zone). In the adult form solar elastosis is marked and closely approximated to the colloid. Hair follicles and sebaceous glands are well preserved. In the nodular form, the vast majority of the dermis is filled with colloid.<sup>4,5,9</sup> Clinically besides papules and plaques, a nodular (nodular colloid degeneration of skin) form has been described in which lesions may be larger and may be single or multiple. Clinical and histological findings in our case suggested it to be a nodular variant of adult form of colloid milium. The patient was a house working female with no history of excessive (occupation) sun exposure, in contrast to common occurrence of this condition in elderly males having excessive sun exposure.<sup>6</sup> The possible triggering factor in this case was trauma to nose and subsequently the condition could have been precipitated by just routine sun exposure. The Er:YAG laser has been shown effective previously<sup>9</sup> but we used IPL with satisfactory response. IPL is a broad spectrum, noncoherent, intense pulsed light source that delivers multiple wavelengths with controlled pulse durations and sequencing, which permits treatment of wide range of facial problems simultaneously (vascular, pigmented and infiltrative).<sup>10</sup> Energy density and pulse duration used was similar to what we use for rosacea of the face. Likely mechanism in case of cutaneous deposit disease like Colloid milium would be reduction of vasculature and its effect on reorganization and remodeling of elastic as well as collagen tissue resulting in smoothing of skin. Hence it can be suggested as a new addition to therapeutic armamentarium of this disorder.

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