CASE REPORT

Lipoid proteinosis: pathognomonic clinical and radiological features

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SUMMARY

A 22-year-old woman presented with a facial rash and hoarseness of voice. On examination, coarse waxy thickening and scarring was noted on the forehead and both the cheeks. The eyelid margins revealed a row of beaded papules termed 'moniliform blepharosis'. CT scan of the brain revealed bilateral, symmetric calcification of the amygdala of the hippocampal nuclei. This led to the diagnosis of lipoid proteinosis which is a rare genetic disorder.

BACKGROUND

Lipoid proteinosis is a rare genetic disorder with a diverse spectrum of clinical manifestations ranging from benign dermatological involvement to more serious manifestations of epilepsy and airway obstruction secondary to hippocampal and laryngeal infiltration, respectively. However, most cases have a normal life span. There is no known cure as yet for this disease. Epilepsy can be managed with antiseizure medication. Awareness of the classic dermatological and radiological findings of this disease can lead to an easy diagnosis without need for further investigations.

CASE PRESENTATION

A 22-year-old woman came to the dermatology clinic of our hospital with long-standing facial rash. She also had a hoarse voice all through her childhood. There was diffuse waxy thickening and scarring of the forehead and both the cheeks. On enquiry, she reported having vesicular regions over the face which healed with scarring. A row of beaded papules over the lid margins termed 'moniliform blepharosis' was noted over both the lid margins. This is considered a pathognomonic dermatological finding of lipoid protenosis (figure 1).[1] As the diagnosis of lipoid proteinosis was being entertained, radiological confirmation was sought with a CT brain study.

INVESTIGATIONS

CT scan of the brain (figure 2A,B) revealed symmetric bean-shaped dense calcification in the uncal part of both the temporal lobes involving the amygdala nuclei of both the hippocampi which is a pathognomonic radiological finding and confirmed the diagnosis.

OUTCOME AND FOLLOW-UP

The patient was counselled regarding the nature and possible complications of the disease. She was advised regarding the symptoms of seizures and stridor, and to report to the emergency department if such an event were to occur.

DISCUSSION

Lipoid proteinosis, which has also been called Urbach-Wiethe disease and hyalinosis cutis et mucosae, is a rare autosomal recessive genodermatosis with around 300 cases reported worldwide.[2 3] Recently the underlying genetic defect has been identified to be a loss of function mutation or reduced expression of the gene encoding extracellular matrix protein 1 (ECM1) on chromosome 1q21.[4] Although patients suffering from this disease have a near normal life span, there is no known cure yet. Clinical manifestations vary greatly among patients with dermatological involvement being the most common. Most of the manifestations occur due to deposition of periodic acid-Schiff-positive hyaline material in the dermis and the submucosa. Hoarseness of voice is also a common finding and was present in our patient as well. It results from yellowish deposits on the vocal cords.[5] Other clinical features of epilepsy and neuropsychiatric symptoms may result due to temporal lobe involvement.

The classic finding on CT of the brain is bilateral hippocampal calcification. It has been described as horn shaped and bean shaped involving the amygdala nuclei in the uncus of the temporal lobes bilaterally and symmetrically.[6] This occurs due to infiltration of the hippocampus with perivascular

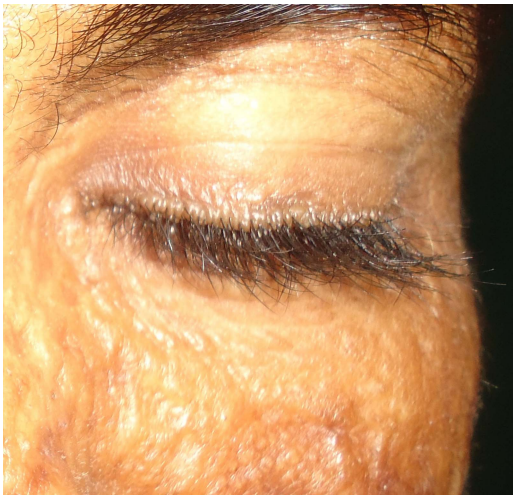

Figure 1 Photograph shows skin-coloured papules along the lid margins appearing like a string of pearls termed 'moniliform blepharosis'. The skin of the left cheek shows coarse waxy thickening and scarring.

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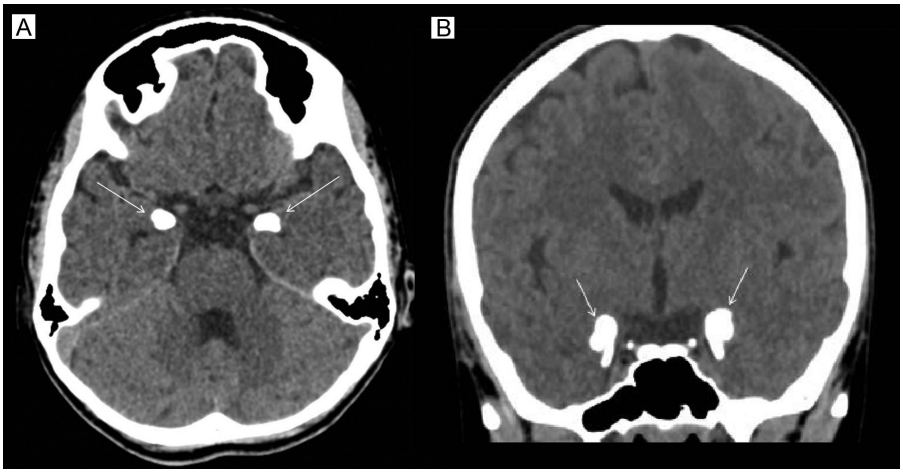

Figure 2 Axial (A) and coronal (B) NECT of the brain reveals bilateral, symmetrical bean-shaped calcification in the uncal part of the temporal lobes involving the amygdale nuclei of both the hippocampi (white arrows). NECT, non enhanced computed tomography.

calcium deposition and gliosis.[7] The involvement of the amygdala nuclei in the uncus anterior to the temporal horns as was seen in our case is pathognomonic for this disease. However calcification may also be seen in rest of the hippocampus, parahippocampalgyri as well as the striatum.[6] This combination of dermatological and radiological findings is so characteristic that there is no other differential to be considered. With greater use of multidetector CT, there has been greater identification of bilateral hippocampal calcification, being commonly seen in the elderly above 50 years of age according to a recently published retrospective review.[8] However, in contrast, lipoid proteinosis tends to present in a younger age group. Bilateral striatal and deep nuclei calcification also has a long list of differentials with many inherited and metabolic conditions; however the involvement of amygdalae and cutaneous manifestations is pathognomonic for lipoid proteinosis.

Learning points

- Lipoid proteinosis, which has also been called Urbach-Wiethe disease and hyalinosis cutis et mucosae, is a rare autosomal recessive genodermatosis.
- It is caused by loss of function mutation or reduced expression of the gene encoding extracellular matrix protein 1 on chromosome 1q21.
- Dermatological finding of 'moniliform blepharosis' is a hallmark of lipoid proteinosis. Other presenting clinical features include facial rash, hoarseness of voice and epilepsy.
- Classic CT brain finding of this disease is bilateral, symmetric 'horn' or 'bean-shaped' calcification of the amygdala of the hippocampal nuclei. Rest of the hippocampus, parahippocampal gyri and striatum can also be involved.

Competing interests None.

Patient consent Obtained.

Provenance and peer review Not commissioned; externally peer reviewed.

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