A Rare Presentation of Psychotic Depression with Suicidality in a Case of Papillon–Lefèvre Syndrome

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ABSTRACT

Papillon–Lefèvre syndrome (PLS) is an autosomal recessive disorder that presents with palmoplantar hyperkeratosis and childhood-onset progressive loss of all dentition. Mental retardation is the only neurodevelopmental disorder reported with this condition till date. We report the first ever case in the literature of PLS presenting with psychotic depression and suicidal intention. A 40-year-old, never married, unemployed woman presented for psychiatric consultation and was given an International Classification of Diseases version 10 diagnosis of severe depression with psychotic symptoms. Physical examination warranted dermatological and dental evaluation before electroconvulsive therapy (ECT) could be administered. She was diagnosed with PLS and pseudoainhum by the skin and dental specialists. Karyotyping study was normal, and histopathology of the palmar tissue showed hyperkeratinization. She was treated with ECT, duloxetine and olanzapine, and she achieved full remission of her depression. She was prescribed oral retinoids and emollients for the skin disorder, and there was a good improvement. The dental prosthesis was fixed, and she was able to eat and feel better than before. Early diagnosis of this condition and rehabilitation would be important in improving wellbeing.

Key words: Depression, keratosis, olanzapine, Papillon–Lefèvre syndrome, suicidal

INTRODUCTION

Papillon–Lefèvre syndrome (PLS) is a very rare autosomal recessive disorder with a reported global incidence of one–four cases per million people, affecting both sexes, without any racial predominance, starting in childhood, with progressive and complete loss of all dentition and hyperkeratosis of palms, soles, knees, and elbows.[1,2] Its epidemiology in India is still unknown.

In 1924, M. M. Papillon and Paul Lefèvre first described PLS in a brother and sister who had palmoplantar hyperkeratosis and childhood-onset progressive, complete and premature loss of deciduous, and permanent teeth.[3] The carrier rate of PLS is 2–4 per 1,000, and parental consanguinity is seen in 20–40% of cases.[4,5] Calcification of dura mater, recurrent pyogenic skin infections, nail deformities, bone marrow obstruction, thyromegaly,
microphthalmia, hyperglycemia, hypertension, and mental retardation can also be seen in PLS. Abscesses can develop in liver, lung, and kidney.[5] The etiopathogenesis is not fully known. Recent, stronger evidence has been the discovery of the PLS gene sublocalized to a 2.8-cm interval on chromosome 11q14. This leads to almost loss-of-function mutations in the cathepsin C (CTSC) gene—the encoder for cysteine lysosomal protease, an enzyme highly expressed in the cells of the immune system, lungs, kidneys, and epithelial tissues, thereby deactivating it.[6] Management of PLS is mostly clinical, and oral retinoids and dental rehabilitation are promising modalities that improve the quality of life.[7]

In this background, we report the first ever case of PLS with severe depression with psychotic symptoms.

**CASE HISTORY**

A 40 years old illiterate and single lady presented to our outpatient psychiatric consultation with her elder sister for complaints of being withdrawn from family and public, appearing constantly sad, anhedonia, fatigability, poor appetite, poor sleep, and loss of weight for more than 2 months. Mental state examination revealed depressive cognitions, depressed affect, psychomotor retardation, strong suicidal intentions, and delusions of reference and persecution. A diagnosis of severe depression with psychotic symptoms was made according to the International Classification of Diseases version 10. The Hamilton Depression rating scale (HAM-D, 17-item) score was 34 at baseline. After a voluntary inpatient admission, electroconvulsive therapy (ECT) was proposed as the rational treatment option. She responded very well to bilateral modified ECT over ten sessions on alternate days. Duloxetine 20 mg was started and maintained at 30 mg at night along with olanzapine 5 mg for the psychotic symptoms. After the suicidal preoccupations resolved and the HAM-D score was <10, she was discharged and has been following up with good compliance. There were no short- or long-term cognitive deficits with ECT at 3 months review.

Dermatology consultation confirmed the palmoplantar hyperkeratosis which had started when the patient was 5 years of age and had reached its present condition progressively by early adulthood, at 30 mg at night along with olanzapine 5 mg for the psychotic symptoms. After the suicidal preoccupations resolved and the HAM-D score was <10, she was discharged and has been following up with good compliance. There were no short- or long-term cognitive deficits with ECT at 3 months review.

Periodontics consultation revealed gradual onset but progressive loss of all dentition which was first noticed at 7 years of age and was complete by 12 years of age. An orthopantomogram showed a complete absence of teeth. Artificial dentures were prescribed which the patient agreed to use. Subsequently, she started eating well. Otolaryngologist opinion revealed a diagnosis of chronic serous otitis media that was treated conservatively.

An X-ray of the skull was taken to rule out thickening of the skull bone was found to be normal. A plain computed tomography scan of the brain was found to be normal. Blood sugar levels, hematology, lipid profile, and thyroid, liver, and renal functions were all normal. IQ assessment done at 3 months revealed a normal IQ of 92. Histopathology of a punch biopsy of the palmar skin showed hyperkeratinization of the skin layers [Figure 2]. Family history revealed consanguinity in parents and mental retardation in her last nephew. Karyotyping of both the patient and her sister revealed normal female karyotype without any structural or numerical abnormalities in either [Figure 3].
DISCUSSION

The rarity of PLS, psychiatric association with severe depression with psychotic symptoms, and a multimodal treatment makes this case report very important from a general hospital psychiatry perspective. Our case was a typical presentation of PLS with both palmoplantar hyperkeratosis and periodontal loss with regard to onset, course, progression, and parental consanguinity. Due to PLS, this patient was unable to get married at her appropriate age and gradually became isolated from her own family and the society from her early adulthood. She had mostly lived her life being dependent on her sister by doing household chores and in cooking food for the family. She was intellectually capable of dealing with everyday activities without needing support. Lack of awareness and possible social stigma might have prevented any attempts to seek specialist consultation.

The likelihood of long-standing subclinical depression given the early onset of PLS cannot be ruled out, but limited history precluded a longitudinal diagnosis. Risk factors for depression could have been the social stigma, isolation, female gender, lower socioeconomic status, unmarried status, illiteracy, unemployment, financial and emotional dependence on sister, lack of peer group, the long-standing impact of dental loss on feeding, and poor self-image. Duloxetine and olanzapine were chosen with a view to improving her energy levels and poor appetite.

The most common differential diagnosis to PLS that were ruled out clinically or using investigations included (1) Haim-Munk syndrome by the absence of arachnodactyly, acroosteolysis, atrophy of nails, deformity of the phalanges in the hands, and congenital loss of dentition; (2) hypophosphatasia by the absence of knock-knee, bowing of the femur or the tibia, enlarged wrists and hypoplastic teeth, and normal blood levels of alkaline phosphatase.

CONCLUSION

PLS is a rare genetic disorder that affects the skin and teeth and starts in the developmental period. It could be associated with a psychotic depressive episode with suicidal intent. Early diagnosis and treatment, through better community awareness, are needed to reduce social stigma due to PLS.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Conflicts of interest

There are no conflicts of interest.

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