PELLAGRA ASSOCIATED WITH PSYCHOSIS

(A case report)

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Summary

A case of pellagra who had psychosis, dermatitis and gastrointestinal system involvement in the form of constipation has been described. In this case mental symptoms in the form of insomnia appeared prior to dermal lesions. The case was successfully treated both for the mental and skin condition with nicotinamide and other ancillary treatment.

Pellagra is a nutritional disorder resulting from inadequate nicotinic acid (niacin) and or tryptophan in diet or from certain antinicotinic acid substances[1]. It has been known for two centuries having been described first in Spain by Casal[2] in 1735 and later in 1762 under the name "mal de la rosa". Frapolli[3] in 1771 from Italy coined the name of the disease as pellagra from the words "pelli" standing for skin and "agar" meaning rough. Goldberger[4] in 1914 observed that the disease was not due to a bacterial infection but to a deficiency in the diet and named this factor, Pellagra Preventing Factor (P. P. F.) Krishnaswamy et al[5] and Krishnamachari[6] pointed out that pellagra is an endemic disease among the population of India subsisting on maize or jower (sorghum vulgare). Pellagra has been reported associated with malabsorption[7], chronic alcoholism, carcinoid syndrome[8] and use of drugs like Isoniazid, 6 Mercaptopurine, 5 Fluorouracil and Chloromphenicol[7].

The clinical triad of disease consists of dermatitis diarrhoea and dementia and usually appear in this order.

This paper presents a case of pellagra which showed dermatitis, psychosis and constipation. In this case mental symptoms appeared first, insomnia being the presenting feature.

Case Report

A lady aged about 55 years from the middle socio-economic strata was admitted to the psychiatric unit in April 1977. The main complaints were gradually increasing sleeplessness for three months, discoloration of hands and feet for 2 months and change in behaviour for 5 days. The first symptom of loss of sleep increased gradually till she could not sleep for 5 consecutive nights prior to her admission. This was associated with restlessness, agitation and irrelevant and incoherent speech.

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Skin lesions were first noticed about 2 months prior to admission in the form of discoloration of the right hand which was associated with burning sensation. The left hand, right foot and left foot were involved in this order in about a fortnight's time. The discoloration gradually increased, imparting a dark brown hue. Face and neck, however, remained spared of pigmentation. No treatment for the skin condition was taken by the patient. The patient had also developed constipation for one month.

On examination, patient was restless, agitated, talking irrelevantly and incoherently. She remained sleepless, was suspicious and was reluctant to take food and medicines at the time of her admission.

Cutaneous examination revealed well demarcated hyperpigmentation as well as thickness and fissuring of both hands and feet upto wrists and ankles respectively. Dorsal aspects of hands and feet were predominantly affected (Fig. 1). Tongue was red with signs of glossitis.

Investigations

The urinary estimation of N methy nicotinamido was done which was 0.052 microgram/6 hours confirming the clinical diagnosis of pellagra.

Treatment

Patient was put on tablet thioridazine 150 mg per day and tablet amitryptiline 75 mg per day. She was also given electro convulsive therapy twice. Along with this treatment she was given nicotinamide injection 150 mg intramuscularly daily. Ung. acid salicylic 1% was given as local application to the skin. The mental condition settled in 5 days. Patient was then put on oral nicotinamide 150 mg daily. She became mentally normal in 16 days with regression of skin lesions (Fig. 2). Cutaneous lesions disappeared completely in about a month's time.

Discussion

Pellagra, a nutritional disorder is not encountered in Bikaner commonly. The disease is well known for its clinical triad of dermatitis, diarrhoea and dementia. The skin lesions generally precede other components of the triad. The diagnostic skin lesion starts with erythema resembling sunburn on the exposed parts of the body. The pathognomonic features of pellagra skin lesions are their absolute symmetry and sharply demarcated pigmented borders (the hyperkeratotic border of Merk). The parts affected generally are the dorsa of hands and forearms upto the rim of sleeves (pellagra gloves), the feet and legs up to the end of trousers, the forehead, nose, and the neck as Casal's necklace. Later on desquamation and fissuring may supervene. Burning and itching are the common symptoms.

Among gastrointestinal symptoms, nausea, increased salivation, burning, epigastrium, diarrhoea and sore tongue predominate[9].

The early mental symptoms include weakness, anxiety, headache, dizziness, difficulty in concentration and loss of memory. Later on the patient develops clouding of consciousness, hallucinations, depression and delusions. Evidence of nervous system involvement includes tremors, convulsions, involuntary movement and dementia.

The usual sequence of involvement of systems in pellagra is skin, the gastrointestinal system and the central nervous system in this order. In this case mental symptoms appeared first in the form of insomnia and gradually increased. Patient presented as a

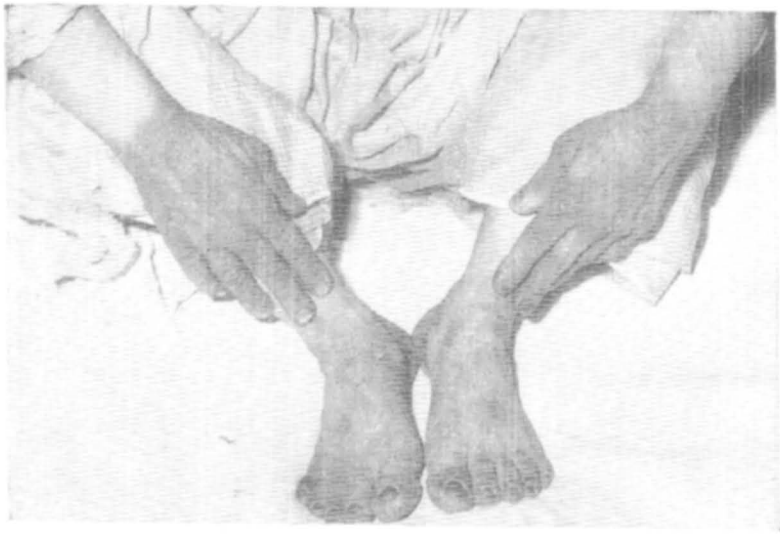

Fig. 1 Showing hyperpigmentation of hands and feet with line of demarcation

Fig. 2 Showing regression of lesions after 15 days of treatment

case of paranoid psychosis. Dementia was, however, absent. Cutaneous lesions were limited to the hands and feet. This patient had constipation whereas the usual feature of the disorder is diarrhoea.

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References

1. Rook A, Wilkinson DS & Ebling FJG: Text Book of Dermatology, Blackwell Scientific Publication, Oxford, London, 1972.
2. Casal G : Historia Natural Y Medica de el principado de Austrias, Madrid, 1762.
3. Frapolli F : Animad Versioner in morbum vulgo pelagrum milan, 1771.
4. Goldberger J : The cause and prevention of pellagra, Public Health Report, 29 ; 2354, 1914.
5. Krishnaswamy K and Gopalan C : Effect of isoleucine on skin and electroencephalogram in pellagra, Lancet, 2 : 1167, 1971
6. Krishnamachari KAVR : Some aspects of copper metabolism in pellagra, Am J clin Nutr, 27 ; 108, 1974.
7. Stratigos JD and Katsambas A ; Pellagra a still existing disease, Brit J Derm, 96 ; 99, 1977.
8. Castiello RJ and Lynch PJ ; Pellagra and the carcinoid syndrome, Arch Derm, 105 ; 574, 1972.
9. Goldsmith GA : Experimental niacin deficiency, J Amer Diet Asso, 32 ; 312, 1956.

FALSE

Sweet[1] labeled the triad of chronic superficial necrolytic dermatosus, a smooth shiny tongue and hyperglycemia a 'pancreatic dermatosis' and suggested that the combination is an indication for exploratory laparotomy in search of a pancreatic neoplasm. Mallinson et al[2] reviewed 9 cases in detail and concluded that the typical skin rash, anemia and diabetes mellitus together constituted a symptom complex and termed it a glucagonoma syndrome. This syndrome is characterised by alpha-cell glucagon secreting neoplasm of the pancreas, diabetes mellitus, ungual dystrophy, necrolytic migratory erythema, glossitis, anemia and weight loss. The cells of the neoplasm take up and decarboxylate certain aminoacids which are the precursors of fluorogenic amines. The skin lesions have been attributed to a generalised amino-acid deficiency caused by the catabolic effect of glucagon.

References :

1. Sweet RD : A dermatosis specifically associated with a tumor of pancreatic alpha-cells, Brit J Dermatol, 93 : 301, 1974.
2. Mallinson CN, Bloom SR, Warin AP et al : A glucagonoma syndrome, Lancet 2 : 1–5, 1974

(quoted by Shupack JL, Berczeller PH and Stevens DM, The glocagonoma syndrome, J Dermatol, Surg Oncol, 4 : 243–247, 1978)