

REMISSION OF PUSTULOSIS PALMARIS ET PLANTARIS AFTER INTESTINAL SHUNT OPERATION

Reports on Three Cases

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Abstract. Three cases with chronic and invalidating pustulosis palmaris et plantaris (PPP) and extreme obesity were treated for the obesity with intestinal shunt operation (jejuno-ileal anastomosis), leaving about 50 cm functioning small intestine. A satisfactory weight reduction was obtained. Immediately after the operation, the symptoms of PPP decreased and the remission remains after 15 to 21 months. The reason for these findings is unclear. Changes in the immunological situation may be responsible for the improvement of PPP.

Pustulosis palmaris et plantaris (PPP) is a chronic disorder of the palms of the hand and/or the soles of the feet of uncertain aetiology. PPP is very often resistant to therapy and the patients are frequently disabled. About 75% of them still have complaints more than 10 years after the inception of the lesions (1).

The classification of PPP has been and remains controversial. One opinion is that PPP is one of the many manifestations of psoriasis (2). Another would classify PPP as a pustular bacteride (Andrew's disease) (3, 8), which has some connection with focal infections. When these foci are treated the skin lesions are said to be healed. A third opinion considers PPP to be a non-specific manifestation of changes in the immunological response of the body (2).

The purpose of this paper is to describe 3 patients whose case histories may be of interest in the classification and the pathogenesis of PPP. Apart from PPP, all 3 patients also suffered from extreme obesity. None of them had any disorders in the gastrointestinal tract. They were treated for obesity with a small intestinal shunt operation and their long-term skin lesions were more or less healed in a short time.

CASE REPORTS

Case 1. 27-year-old man with obesity since childhood and with PPP since the age of 12. Previous rubrosquamous lesions on the elbows were considered as probable psoriasis. He had never been able to perform regular work because of skin lesions on his hands and feet. During the 36 months preceding the abdominal operation, he had been hospitalized (Dermatological Clinic) for 18 months and disabled the whole time. Treatment of an infectious focus in one tooth did not alter the PPP. His body weight was 120 kg and height 180 cm. It was impossible to reduce his body weight by dietary restrictions; he was therefore referred to surgery. An intestinal shunt end-to-end jejuno-ileostomy (7) was performed leaving 40 cm functional jejunum and 15 cm ileum. The remaining small intestine was anastomosed as a blind loop to the caecum. The postoperative course was uneventful. Even during the first 2 postoperative weeks the skin lesions had improved considerably. After 6 weeks the patient was able to work full time as a motor mechanic. During the observation time of 21 months the skin has been slightly erythematous and scaling, but without any new pustules. The body weight stabilized at about 80 kg.

Case 2. 40-year-old woman, shop-assistant, with obesity since the age of 20 and PPP since the age of 30. Typical PPP, mostly affecting the soles of the feet. Marked difficulty in standing and walking. Resistant to all therapy and disabled for the 2 years before the intestinal shunt operation. During the last 10 years she had never had a remission of the skin lesion. There was no indication of either focal infections or psoriasis. Her body weight was 125 kg and height 160 cm. During the first postoperative week, the skin lesions improved to a remarkable degree and she was able to walk about freely and use her hands. Six weeks after the operation her only complaint concerned the thin sensitive skin on the hands. There were no symptoms from the feet. During the observation time of 16 months some small pustules have reappeared in the palms, but never more than five at the same time, and there has been slight erythema and faint scaling on the palms and the soles. Her body weight was reduced to 90 kg.

Case 3. 47-year-old woman, caretaker, with PPP since the age of 35 and obesity since 18 years of age. No indication of psoriasis. For four years about the age of 40, the PPP was

relatively mild and she was mostly without pustules. During the 5 years prior to the intestinal operation the course of PPP was severe, she was never without pustules and was disabled periodically, during the last 18 months continuously. Treatment of infectious foci in the teeth did not affect the PPP. Her body weight was 116 kg and height 168 cm. The shunt operation induced a reduction of the body weight to 90 kg. During the first weeks after the operation there was a marked improvement of the skin lesions. During the follow-up period of 15 months the skin has become slightly hyperkeratotic with scaling, but no new pustules have reappeared on her hands or feet.

DISCUSSION

The intestinal shunt operation reduced the body weight to a satisfactory degree in all the 3 patients. The side-effects, with diarrhoea as the main symptom, were acceptable.

Simultaneously a definite and remarkable improvement of the PPP was observed. It is therefore reasonable to discuss the connection between the skin disorders and the gastro-intestinal tracts.

Surgical trauma per se is a stress situation causing increased adrenal gland activity. This may have contributed to the rapid improvement in our cases because of increased formation of ACTH and cortisol. However, such improvements are not usually permanent.

The intestinal shunt operation implies that a malabsorption is induced with many changes in the gastro-intestinal tract. The bacterial flora in the gut, the bile acid metabolism, the cholesterol, electrolyte and vitamin equilibria are altered from the pre-operative levels.

A disorder similar to PPP in man has been described in horses, dogs and swine. In these animals the skin in those areas which are comparable to the palms and the soles in man, are affected in a very similar manner (5, 6). In these disorders the intestinal flora seems to be of importance for the pathogenesis of the skin lesions.

The nosological position of PPP is uncertain and the criteria for the specific diagnosis of pustular lesions involving the palms and soles has been the subject of differing opinions. The pustular eruptions are considered sterile in PPP, by current bacterio-

logical methods. However, the anaerobic bacteria often remains a problem to demonstrate. The opinion is that PPP represents a form of individual response rather than a specific disease and, thus, a change in the normal immunological response is supported by the demonstration of decreased phagocytic activity of the peripheral leucocytes (4).

The immunological relation between the skin and the gut is of great interest. The finding of an improvement of PPP after the intestinal shunt operation is still difficult to evaluate.

One possible interpretation is that the shunt operation has influenced the lymphoid apparatus of the intestine by changing the contact between the intestinal content and the intestinal wall. However, the observations in our three cases require confirmation and the immunological situation in PPP calls for further investigation.

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