

PERFORATING GRANULOMA ANNULARE: REPORT OF THREE CASES FROM SCANDINAVIA

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Abstract. Three cases of papulo-nodular eruptions, partly with central crusts, are reported. Clinically and histologically they fit with perforating granuloma annulare, previously not reported from Scandinavia.

Key words: Granuloma annulare; Perforating granuloma annulare; Transepidermal elimination

In 1952 Civatte described generalized perforating granuloma annulare as "les formes tuberculo-ulcéreuses du granulome annulaire" (3). Since then only a small number of cases have been reported from Britain, Texas, Hawaii and Switzerland (2, 4, 5, 6, 7, 10). The dermatosis is characterized by shiny, partly grouped and umbilicated papules and nodules, a few millimetres across, some with a central crust and appearing mainly on the limbs. The lesions are often pale yellow, but sometimes bluish-red as in vasculitis. The disease may last for months, even years. The therapeutic prospects of achieving a cure are very limited. Histological examination reveals changes typical of granuloma annulare, and serial sections often show perforation up through the epidermis, with escape of necrobiotic material. The etiology of the perforating as well as of the known and more common variants of granuloma annulare is unknown. Concomitant diabetes has been reported in 2 of 17 published cases of perforating granuloma annulare (3, 4).

Since the summer of 1974 we have seen 3 patients with perforating granuloma annulare. They appear to be the first cases recognized in Scandinavia.

CASE REPORTS

Case 1

A 58-year-old woman, previously healthy but with heredity for diabetes, was seen in August 1974 in the Depart-

ment of Dermatology, Malmö, because of a slightly itching rash on the legs. The rash spread to the arms, shoulders and back.

At examination in October 1974 the woman had shiny, skin-coloured or slightly yellow papules, 3-4 mm across, partly grouped and with a tendency to umbilication and surrounding erythema. The lesions were situated symmetrically on the extensor aspects of the limbs, in the middle of the back and on the shoulders. Similar, single papules were seen on the buttocks and on the backs of the hands. On the lower legs were more red-cyanotic papulo-nodules, up to one centimetre across, with central necroses covered with crusts (Figs. 1 and 2).

Laboratory findings. Complete blood cell count and the ESR were normal. The fasting blood glucose and glucose tolerance test were normal. Urine analysis and bacterial culture of the urine revealed nothing remarkable. Wassermann test, neg. Tuberculin test (PPD 1 TU i.c.), pos., 10x10 mm (expected in Sweden). Löwenstein cultures of gastric washings, neg. Chest X-ray showed old pleural changes apically, as after healed tuberculosis.

Histological findings. 1) In a papule from the back there was necrobiosis in the corium surrounded by a ring of granulomatous infiltrate as in classical granuloma annulare. 2) In a papulo-nodule situated on the thigh and covered with a crust there was necrobiosis in the corium surrounded by an intense lymphocytic infiltrate. A perforation up through the epidermis was also seen (Fig. 3).

Course. At examination in January 1975 the old lesions showed signs of healing, but new lesions had appeared on the shoulders. Not until 8 months after onset, in March 1975, was healing in progress, and even then a few blue-red, slightly atrophic maculae on the limbs still persisted. In July 1975 the dermatosis recurred, but this time the course was milder, the lesions were fewer, less widespread and healed more quickly.

Case 2

In August 1974 an 18-year-old girl, previously healthy and without heredity for diabetes, developed an itching dermatosis on the knees and elbows, radiating to the extensor aspects of the legs and arms.

At examination in September 1974 in the Department of Dermatology, Malmö, the elbows and knees showed



Fig. 1. Distribution on the legs of partially necrotized papules covered with crusts (Case 1).

symmetrically distributed red-cyanotic papulo-nodules, some of which were covered with a central crust, and additional red papules were seen on the extensor aspects of the arms and legs.

Laboratory findings. The blood cell count and the ESR were normal. Urine glucose, neg., and glucose tolerance test, normal. Wassermann test, neg. Tuberculin test (PPD 1 TU i.c.), pos., 10×12 mm. Chest X-ray revealed nothing remarkable.

Histological findings. A specimen from a red-cyanotic nodule with a central crust situated on the leg showed several necrobiotic foci in the corium which were surrounded by multiple infiltrates, partly with fairly well developed, rounded granulomas containing multinucleated giant cells, histiocytes and lymphocytes. In one area such a necrobiotic focus encroached upon a follicle, part of which was completely necrotic, and within a limited area there was also incipient disintegration of the epidermis.

Course. In November 1974, about 3 months after onset, examination showed a clinically more typical picture of granuloma annulare with annular foci on the arms and legs. One month later the lesions had healed almost completely except for persistent blue-red maculae on the upper arms and lower legs.

Case 3

In 1974, a 52-year-old woman was seen who had been continually troubled for about two decades by non-itching blue-red and gradually ulcerating papules and pustules, with reddening of the surrounding skin. The changes, which were distributed symmetrically on the trunk and limbs, had left behind confetti-sized hypopigmented atrophic scars. In the 1950s and the early 1960s the patient was examined at various departments of dermatology and was given the diagnosis of papulonecrotic tuberculids. Treatment with ultraviolet light (mercury arc) hyposensibilization with tuberculin, tuberculostatics, vitamin B₆ and iodobismitol had had no demonstrable effect on the course of the condition. Since 1962 the patient had been regularly seen at the Department of Dermatology, Lund. The above diagnosis or some form of vasculitis had then been considered. Further therapeutic trials with sulphapyridine, dapsone, chloroquine and salicylazosulphapyridine had not had any demonstrable effect either.

Laboratory findings (1974). The blood cell count and ESR were normal. Wassermann test, neg. Liver function tests were normal. A fine needle aspiration biopsy of the liver appeared normal. Tuberculin test (PPD 2 TU i.c.) was 40×35 mm. Guinea pig test and Löwenstein cultures of gastric washings, urine and skin biopsy, all neg. Gynecological examination of uterine curettages revealed nothing of interest. No demonstrable roentgenographic

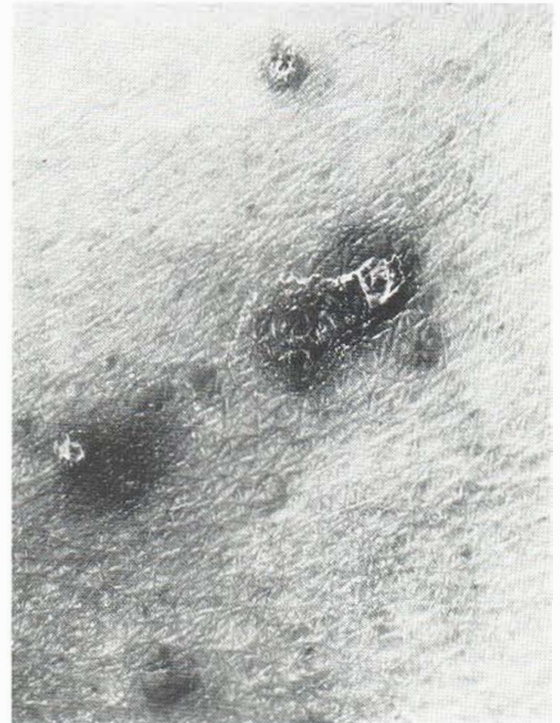


Fig. 2. Close-up of lesions on the legs (Case 1).



Fig. 3. In the central part of the picture degenerated fibrinoid collagen borders the epidermis, which shows necrosis with abundant polymorphonuclear leukocytes. In the surrounding areas are lymphocytic infiltrates.

changes of teeth, sinuses, lungs, gallbladder, colon or stomach. Rectoscopy showed nothing abnormal.

Histological findings. Several biopsy specimens showed focal degeneration of the connective tissue. The foci were enclosed by palisades of histiocytes. In several areas there were epithelioid granulomas with single giant cells. One biopsy specimen from a blue-red nodule of the type seen in vasculitis also showed a considerable admixture of red blood cells, leukocytes and nuclear fragments. In those areas where the changes were superficial there was spongy loosening and thinning of the epidermis as well as substantial exocytosis. The sections did not include any complete perforation.

Course. Since November 1974 the case has been regarded as an example of generalized necrotizing granuloma annulare. Prednisolone given in small doses has reduced the activity of the disease somewhat.

DISCUSSION

The clinical picture of these three cases of generalized perforating granuloma annulare corresponds well to earlier published cases (2, 3, 4, 5, 6, 7, 10). Precipitating agents such as insect bites and exposure to ultraviolet light have been discussed, as several of the cases have appeared or recurred in the summer months. The etiology, like that of ordinary granuloma annulare, is obscure (9, 12, 13). One of our patients had heredity for diabetes. Two

of the 17 patients in published cases had diabetes (3, 4).

Tuberculids constitute the most important differential diagnosis for generalized perforating granuloma annulare. It is often impossible to distinguish the lesions clinically, and therefore all patients with suspected perforating granuloma annulare should at least be examined with tuberculin testing and chest X-ray in order to cover the possibility of active tuberculosis (11). The skin changes also resemble those seen in reactive perforating collagenosis, another uncommon disease with trans-epidermal elimination of necrobiotic material (1, 8, 14). This disease, seen mainly in small children, is characterized by the appearance of umbilicated, skin-coloured papules at the site of some form of trauma to the skin. The individual lesions heal within 6-8 weeks and leave behind only temporarily hypopigmented areas of the skin.

By publishing these three Swedish cases of perforating granuloma annulare diagnosed within a short period of time we want to point out that this particular vasculitis-like variant of granuloma annulare should be kept in mind. The clinical picture is otherwise easily misunderstood, thus causing these patients extensive investigations and unnecessary long-term treatment, e.g. with tuberculostatics.

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