Granuloma annulare of the penis

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Abstract

Granuloma annulare is an uncommon skin condition, most often found on the extremities of young females. A case of granuloma annulare occurring on the penis of a 61 year old man is reported and the current literature associating granuloma annulare and conditions likely to present to genitourinary clinics is reviewed.

Introduction

Granuloma annulare (GA), an uncommon dermatological disorder, usually occurs on the hands or feet of young women.¹ We report a case of penile granuloma annulare occurring on the penis and discuss the implications.

Case history

A 61 year old man presented to the genitourinary clinic with a one year history of a rash on his penis. He stated that the lesion was neither painful nor pruritic, that he had no other urogenital symptoms, and that he had never had a similar lesion before. He had a past medical history of adult onset asthma, for which he was currently taking beclomethasone and salbutamol inhalers, but there was

no significant past history of any dermatological conditions, and no family history of note. There was no known history of trauma to the genital area, although the patient spilt a large quantity of turpentine substitute on his groin around the time of the development of the lesion. He was not able to relate reliably whether this accident preceded or followed the development of his rash. The patient had been employed as a driver for a laundry business for 5 years, but had no other known history of exposure to potentially toxic chemicals.

The patient was exclusively heterosexual and had never been abroad. He had not indulged in any high risk activity likely to result in the acquisition of HIV. His last sexual intercourse was reported to be with a regular girlfriend, using a condom, several months prior to presentation.

On examination a serpiginous, raised, erythematous lesion 2 cm by 1 cm was noted on the shaft of the penis (fig 1). Genital examination was otherwise unremarkable; there was no lymphadenopathy and a full general examination failed to reveal any abnormalities. Urethral microscopy was unremarkable and culture of a swab from the urethra failed to reveal *Neisseria gonorrhoeae*. Syphilis serology, including the fluorescent

Figure 1 (a) Raised lesion of granuloma annulare on shaft of penis. (b) Healing biopsy site.

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Figure 2 Biopsy of lesion, showing an epithelioid granuloma with central degeneration (a) and a surrounding lymphohistiocytic infiltrate (b) including sparse giant cells. (Haematoxylin and eosin; low power view $\times 50$).

treponemal antibody test, was negative. Swabs from the lesion site failed to reveal herpes simplex or *Haemophilus ducreyi* on specific culture, and routine bacteriological examination of a swab from the lesion showed normal skin flora only.

Full blood count was normal, as were fasting blood glucose and thyroid function tests. Antinuclear factor was detected in the patient's serum, but the DNA binding test was negative. Antibodies to mitochondria, smooth muscle, gastric parietal cells and thyroid cells were not present in the patient's serum. Following counselling, the patient declined to undergo testing for the human immunodeficiency virus (HIV).

In order to establish the diagnosis, a skin snip biopsy was performed following infiltration of the area with 2% lignocaine and 1 in 200,000 adrenalin for anaesthesia. The sample was then placed in 10% formal saline for routine histopathological examination. Sections showed foci of collagen degeneration, with a lymphohistiocytic infiltrate and sparse giant cell formation, as shown in fig 2. Acid fast bacilli were not seen using the Ziehl Nielsen technique and periodic acid Schiff staining for fungi was negative.

When reviewed six weeks after the biopsy, satisfactory healing of the biopsy wound had occurred, and the lesion was markedly reduced in size.

Discussion

Our patient presented with a lesion which was clinically typical of GA and had the characteristic histological findings and a consistent clinical history.

GA can occur in either localised or generalised forms, is commoner in females² than in males, and tends to predominate in younger age groups.¹³ The aetiology is unknown,²

however; local disease has been associated with trauma,⁴ contact with irritant materials,⁵ fungal infection,⁶ adenovirus,⁷ herpes zoster⁸ and diabetes mellitus.⁹ Generalised granuloma annulare has been associated with diabetes mellitus,² thyroid disease,¹⁰ chronic Lyme disease,¹¹ and the possession of HLA types A31, B35¹² and B8¹.

The lesions of GA occur most commonly on the surfaces of the dorsum of the hand and fingers,¹ and, to the best of our knowledge, there has only been one previous report of granuloma annulare of the penis.¹³

Lesions tend to disappear after 3 to 6 months. Trauma, such as the process of biopsy itself may precipitate disappearance, as happened in this case. Perforation of the lesions is the only potentially serious consequence of GA. The efficacies of treatments such as intralesional steroids, cryotherapy and radiotherapy are difficult to evaluate, in view of the tendency of lesions of GA to relapse spontaneously and remit.¹

GA currently has no established associations with other genitourinary conditions, although there has recently been a report linking it with scabies,¹⁴ and the condition has been confused with annular syphilid.¹⁵ Other potential clinical differential diagnoses of GA occurring in the genital tract include ringworm, annular lichen planus, sarcoidosis and necrobiosis lipoidica.¹ The histopathological differential diagnosis includes necrobiosis lipoidica, rheumatoid nodules and sarcoid. Clinico-pathological correlation is important in these cases.

One study² has suggested that only 16% of cases of GA can be related to a specific precipitant. It is unclear whether the incident with the turpentine substitute was a significant factor in the development of our patient's granuloma annulare, as he was uncertain of the exact temporal sequence.

Several papers report the occurrence of granuloma annulare in individuals infected with HIV^{7,16-18} and one article¹⁹ documents remission of generalised granuloma annulare in association with the initiation of zidovudine therapy.

Following counselling, our patient declined to undergo testing for HIV. He was not considered to be at particularly high risk, and had no stigmata to suggest advanced HIV disease.

In view of the developing epidemic of HIV, its possible association with GA and the potential confusion of GA with other genitourinary conditions, we believe that genitourinary physicians should consider GA in the differential diagnosis of any unusual dermatological condition and proceed to biopsy if there is any doubt.

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