Case
report

Multiple pyogenic granuloma of the penis

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A case of multiple pyogenic granuloma affecting the penis of a 28 year old man is reported. The lesions were arranged in a floret-like fashion around the inner aspect of the prepuce and developed after circumcision for congenital phimosis. Histopathological examination of sections from a biopsy specimen of the papillomatous growths revealed the findings of pyogenic granuloma. In this patient, the pathogenesis of the lesions is probably related to the failure in surgical wound repair that followed circumcision. Problems of clinical and histopathological differential diagnosis are discussed.

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Case report

A 28 year old healthy man was referred to us by his general practitioner for evaluation of relentless growing lesions on his penis. The history revealed that they appeared 6 months earlier shortly after circumcision for congenital phimosis, were asymptomatic, and enlarged slowly. No history of balanitis xerotica obliterans (lichen sclerosus) could be elicited. On physical examination, he was found to have multiple, large papillomatous, easily bleeding, blue-red lesions around the entire circumference of the inner aspect of the prepuce (fig 1). These lesions were partly isolated and partly confluent. There was no local or regional lymphadenopathy. There were no other skin or mucosal abnormalities. Serology for syphilis and HIV was negative. Multiple swabs taken from the lesions for bacteriological investigations gave negative results. A biopsy of a papillomatous growth was performed. Histopathologically, there was a polypoid, ulcerated mass of angiomatous tissue protruding above the surrounding skin, constricted at its base by a collarette of adnexal epithelium. The angiomatous tissue was composed of dilated and congested capillaries and venules embedded in an oedematous stroma containing a mild chronic inflammatory infiltrate. In the deeper stroma a scar was noted. Diathermy coagulation of the base of the lesions was performed under local anaesthesia and no recurrences were observed at 3 months' follow up.

Figure 1 Multiple papillomatous lesions in floret-like arrangement around the inner aspect of the prepuce.

Discussion

In the case presented here, the history of rapid growth, tendency to bleed, and the pedunculated aspect of the lesions were typical changes of pyogenic granuloma. Differential diagnosis of our patient's condition included mainly condylomata acuminata, Kaposi sarcoma, verrucous carcinoma, Bowen disease, bacillary angiomatosis, and donovanosis but these entities were ruled out not only by clinical findings but also by histopathology.

Pyogenic granuloma is a solitary, rapidly growing, easily bleeding, bright red papule or nodule that often appears at the site of minor trauma of the skin. It occurs usually on exposed surfaces such as the hands, forearms, and face but it may also appear in the oral mucosa, palms and soles, or nail folds.¹ Multiple pyogenic granuloma is a rare type of pyogenic granuloma that recurs with several satellites.^{2,3} Satellite lesions erupt after irritation or attempted destruction of the original lesion, most frequently on the trunk of children.

To our knowledge, only one case of pyogenic granuloma affecting the penis has been reported in the literature.⁴ In this case, the lesion was solitary and developed on the inner aspect of the prepuce of a 25 year old healthy man, seemingly without history of trauma. Conversely, in our case the lesions were multiple and developed shortly after circumcision, during the process of wound healing. Wound repair is an integration of dynamic interactive processes that follow a specific time sequence.⁵ After inflammation, new tissue begins to form shortly after injury in order to re-establish dermal integrity. This tissue, often called granulation tissue, is composed mostly of newly formed blood vessels, macrophages, fibroblasts, and loose connective tissue. In time, fibroplasia of granulation tissue supervenes, the wound contracts, and finally tissue remodelling occurs. When injuries persist or recur, the process of tissue repair is inhibited. Complications in wound repair mainly include infection, delay in closure, painful scars, hypertrophic scars, and keloids.⁶ Surprisingly, pyogenic granuloma is not included among the complications of wound healing, although the relation

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between skin injury and the development of this condition is well known. Histopathologically, in an early stage, pyogenic granuloma is indistinguishable from granulation tissue. In time, as the oedema and infiltrate of inflammatory cells wane, the vascular channels become smaller, fibrocytes join the granulation tissue, and collagen formed by them becomes arranged in struts that intersect lobules composed of small blood vessels.

In our case, it is likely that failure in surgical wound repair (probably due to excess movement and tension of the prepuce) caused exuberant granulation tissue formation that in time eventuated in multiple pyogenic granuloma arranged in a floret-like fashion around the surgical scar. A similar phenomenon would

seem to be implicated in the pathogenesis of recurrent pyogenic granuloma which develops in a satellite fashion around the surgical scar of a previously removed solitary pyogenic granuloma.

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