Multiple small keratotic papules on the penis

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A 43-year-old man presented with multiple asymptomatic dark, raised lesions located on the penis of nine months duration with progressive course. Physical examination revealed multiple, dark blue-purple hyperkeratotoic papules measuring 1-3 mm in diameter encircling the coronal arc of the glans penis and penile shaft (Fig.1 A, B).

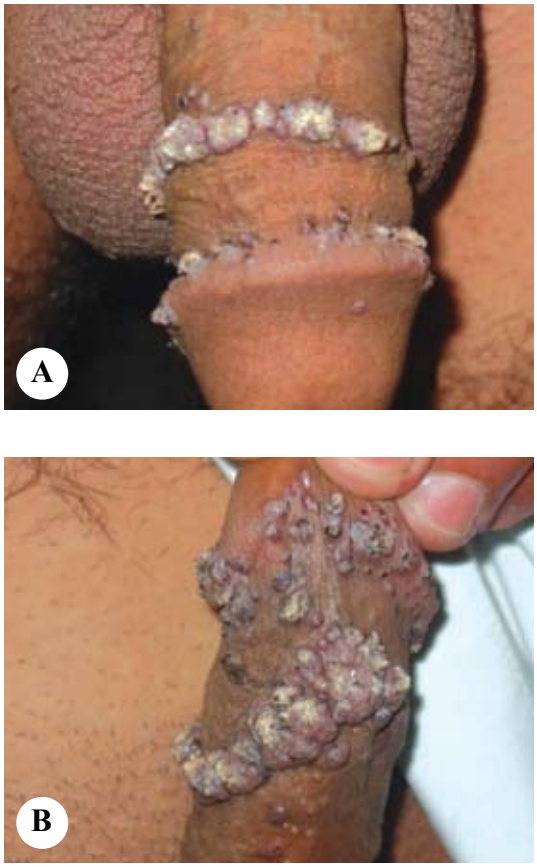

Fig. 1 A. Multiple, hyperkeratotoic papules encircling the coronal arc of the glans penis and,
B. Penile shaft.

Skin biopsy from a purplish papule showed prominent dilated blood vessels in the upper reticular and papillary dermis. The walls were thin and lined by single layer of flat endothelial cells and the lumens were filled with erythrocytes. The overlying epidermis showed hyperkeratosis and acanthosis with rete ridges encircling dilated vessels (Fig. 2 A, B, C).

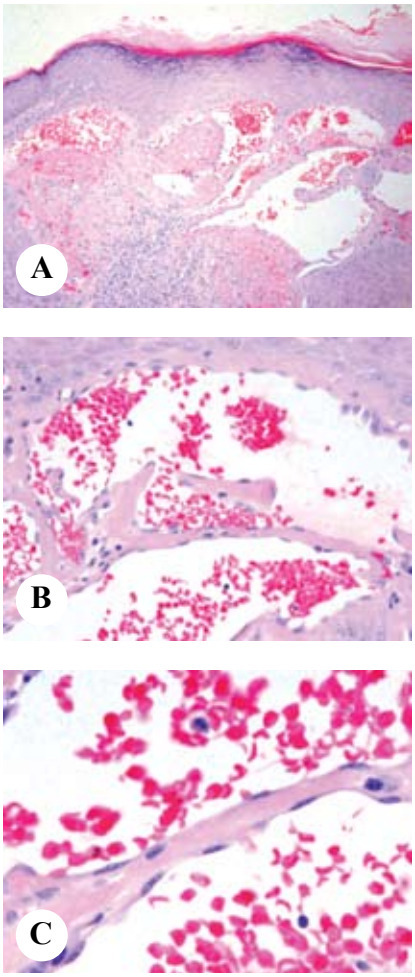

Fig. 2 A, B, C. H & E Section.

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What is the clinical diagnosis?

1. Norwegian Scabies
2. Genital warts
3. Angiokeratoma of Fordyce
4. Bowenoid papulosis
5. Pearly penile papules

The diagnosis is Angiokeratoma of the penis (Angiokeratoma of Fordyce).

DISCUSSION

The term angiokeratoma is applied to several distinct unrelated conditions with cutaneous vascluar lesions, the histology of which shows superficial dermal vascular ectasia with overlying hyperkeratosis of the epidermis. Several different types of angiokeratoma have been described: angiokeratoma circumscriptum, angiokeratoma of Fordyce, angiokeratoma of Mibelli, solitary papular angiokeratoma and angiokeratoma corporis diffusum (Fabry).

Angiokeratomas of the scrotum were first described by Fordyce in 1896, in a 60-year-old man with bilateral varicoceles.[1] Although angiokeratoma of Fordyce is the most common type of angiokeratoma, it is not frequent. The estimated incidence of this type of angiokeratoma increases with age 13 and in the largest studies on this topic the onset of the condition has been reported as typical of senile or young-adult age. It has been supposed that angiokeratoma of the scrotum usually appears early in adulthood but in most cases remains unnoticed until old age In any case it has been very rarely observed in childhood and adolescence and it was reported to occur as a congenital condition.[2]

They are typically asymptomatic, but cases with pain, pruritus, and bleeding have been reported. The papules are blue to red and their size varies from 2–5 mm. There may have a scaly surface and early lesions usually appear red, soft and compressible; later, they become blue, keratotic, and non-compressible.[3] Although angiokeratoma of the scrotum is often a benign condition, it has the potential to cause considerable worry and distress to patients. It is a relatively common condition and is more prevalent among people older than 40 years. It is most commonly found on the scrotum, with occasional affection of the shaft and glans of penis, rarely it affects the legs, crural area and bulbar conjunctiva. The lesions are most common in males, and predominantly affected Caucasian and Japanese populations.[4]

Malignant melanoma (nodular melanoma type) can have a similar appearance and distribution to angiokeratoma, appearing as dark dome shaped papules prone to spontaneous bleeding. Importantly, this sub-type of melanoma does not exhibit the warning signs of asymmetry, irregular border, variegation in colour, large diameter and rapid change in radial growth pattern, which are usually associated with melanoma. It is also important to consider melanocytic naevi and genital warts in the differential diagnosis.[5]

Exact pathophysiology of angiokeratomas remains unknown; although it has been proposed that increased venous pressure may contribute to their formation.[5] Fordyce angiokeratomas have been associated with inguinal hernia, varicocele, prostatitis, lymphgranuloma venereum, thrombophlebitis, and carcinoma of the bladder.[6] On the other hand, in the majority of cases, no cause for increased venous pressure was found. However, it is possible that in these cases, the increase in venous pressure may be so mild as to be undetectable by the ordinary methods leading only to

capillary dilatation at a site that has probably the lowest tissue pressure.[7]

Treatment of angiokeratomas is usually performed for cosmetic purposes and rarely due to the recurrent bleeding or over anxiety of the patient. Laser therapy has been tried frequently in the last decade. A potassium titanyl phosphate (KTP) 532 nm laser, a carbondioxide laser, a 578 nm copper vapor laser, a long-pulsed Nd:YAG laser, a diode laser, a 585 nm pulsed dye laser and combined erbium: YAG and 532 nm KTP (frequency-doubled neodymium:YAG laser); all were reported to have good permanent cosmetic results with minimal adverse effects.[8-9]

Bechara et al. reported a case of angiokeratoma of Fordyce of the glans penis. Combined treatment with erbium: YAG and 532 nm KTP (frequency-doubled Nd: YAG) lasers provided excellent clinical results. They have suggested that one should evaluate angiokeratomas individually before any form of laser therapy and choose a laser based on the intensity of the hyperkeratosis of each lesion. They have proposed that if present, marked hyperkeratosis should first be removed by means of an ablative laser such as a CO2 or an erbium:YAG laser. To treat the vascular lesions they have suggested the use of a laser that targets hemoglobin such as a KTP laser following an ablative laser treatment of the hyperkeratosis.[10]

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