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Case Report

Dermatology Section

Diagnostic Utility of Dermoscopy in Angiokeratoma of Fordyce: A Case Report

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ABSTRACT

Angiokeratomas are benign, rarely occurring vascular lesions characterised by marked ectasia of thin-walled blood vessels in the superficial dermis. Angiokeratoma of Fordyce is the second most common type. It is more frequent in men and usually presents as multiple bright red papules on the scrotum, occasionally on the penis, buttocks, and abdomen; it can also occur in females mainly over the vulvar region. Here, a case of a 70-year-old patient who presented with multiple asymptomatic elevated skin-coloured lesions over the scrotal region for six months is presented. Based on the clinical and dermoscopic findings, a diagnosis of angiokeratoma of Fordyce was made. Treatment involved proper counselling and reassurance about the benign nature of Angiokeratoma.

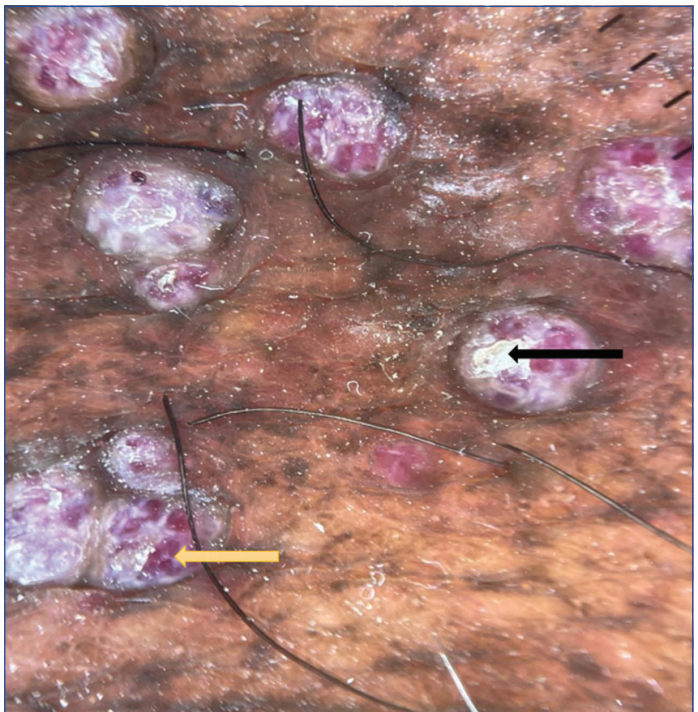
Keywords: Benign, Blood vessels, Cryotherapy, Scrotum

CASE REPORT

A 70-year-old male patient visited the dermatology Outpatient Department (OPD) with a complaint of multiple, asymptomatic, skin-coloured, elevated lesions present over the scrotal region for the last six months. Initially, there were a few lesions that gradually increased in number over time. There was no history of pain, itching, trauma, or bleeding from the lesions. The patient had no past medical history. On cutaneous examination, they were firm, non tender papules measuring about 1-6 mm in diameter over the scrotum. There was no varicocele or inguinal lymphadenopathy. Clinical pictures were taken after receiving consent from the patient [Table/Fig-1].

[Table/Fig-1]: Shows multiple well defined skin coloured papules of size varying from 1-6 mm in diameter over scrotum region.

Further, the patient underwent investigations, including a complete haemogram, Liver Function Tests (LFT), and Renal Function Tests (RFT), all of which were within normal limits. The patient was also screened for the Venereal Disease Research Laboratory (VDRL) test and Human Immunodeficiency Virus (HIV), both of which yielded negative results. Subsequently, contact polarised dermatoscopy was performed using Dermlite® DL4, revealing well-demarcated round reddish lacunae with a whitish veil [Table/Fig-2].



[Table/Fig-2]: Dermoscopic examination of the lesions showed well demarcated round reddish lacunae (yellow arrow) with a whitish veil (black arrow).

A skin punch biopsy was not performed as the patient was unwilling due to the invasiveness of the procedure. Based on the clinical and dermoscopic findings, a diagnosis of Angiokeratoma of Fordyce was made. The patient was counselled about the benign nature of the condition, and the first session of cryotherapy was conducted by applying liquid nitrogen with the help of a cotton swab stick. The patient was advised to return for the next session after two weeks, but he did not showed up for follow-up sessions.

DISCUSSION

Angiokeratoma is a term derived from three Greek words that mean vessels, horn, and tumour, respectively [1]. Angiokeratomas are uncommon benign vascular lesions characterised by marked ectasia of thin-walled blood vessels in the superficial dermis, often associated with an epidermal reaction such as acanthosis

and/or hyperkeratosis [2]. Its prevalence is approximately 0.16% among the general population and increases with age [3,4]. Angiokeratomas are most commonly seen in males. They may be localised or diffuse. Different types of angiokeratoma include angiokeratoma corporis diffusum, angiokeratoma circumscriptum, solitary or multiple angiokeratomas, angiokeratoma of Fordyce, and angiokeratoma of Mibelli [1]. Angiokeratoma of Fordyce is a type of angiokeratoma that is localised in nature. It commonly presents as many warty, vascular papules on both scrotums. JA Fordyce initially reported it in 1896 in a 60-year-old man who had bilateral varicocele [5].

The various types of angiokeratomas differ in their location and clinical presentation, but all variants exhibit similar histopathological findings [6]. Approximately 14% of all angiokeratomas are Fordyce angiokeratomas, making them the second most prevalent form [2]. They are more common in men and typically present as multiple bright red papules on the scrotum, occasionally on the upper part of the thighs, penis, and abdomen. They can also affect the vulva in females [7]. Clinically, they appear as multiple well-defined papules, ranging in diameter from 1 to 5 mm, usually asymptomatic but sometimes prone to bleeding due to trauma or during sexual activity. The exact aetiology and pathogenesis are not precisely known. However, local venous hypertension might also contribute to angiokeratomas, as they have been noted alongside conditions like hydrocele, varicocele, and haemorrhoids. They could also be associated with urinary tract tumours, intra-abdominal tumours, or solitary lesions linked to fabry's disease [7-9]. Two other predisposing factors for angiokeratoma include mechanical trauma and irritation, which can induce the expression of the matrix metalloproteinase-9 enzyme in the epidermis, triggering epidermal responses such as hyperkeratosis and acanthosis [6]. Various differential diagnosis for angiokeratoma include genital warts, Bowenoid papulosis, lymphangioma circumscriptum, condyloma acuminatum, and pyogenic granuloma.

In most cases, angiokeratoma can be diagnosed primarily through clinical examination; dermatoscopy, also known as dermoscopy, is a non invasive method that can help differentiate angiokeratoma from morphologically similar lesions like genital warts, lymphangioma circumscriptum, and bowenoid papulosis. Dermatoscopy is an intriguing diagnostic tool that dermatologists use to bridge clinical and histological evaluations due to its ability to reveal findings not visible to the naked eye [10]. Typical dermoscopic findings include well-defined, round to oval, large, red to black areas forming a lacunar or multicomponent pattern, along with a whitish veil contributing to the acanthotic and hyperkeratotic epidermis [11]. The most significant advantage of using a dermoscope is its non invasiveness, allowing patients to comfortably and willingly undergo the procedure.

However, in rare cases, histopathology, an invasive technique, may be necessary to differentiate angiokeratoma from various other conditions like verruca vulgaris, dermatofibroma, condyloma acuminatum, Spitz nevi, lymphangioma circumscriptum, and pyogenic granuloma. Histopathology may reveal hyperkeratosis and varying degrees of acanthosis, along with multiple dilated and congested thin-walled blood vessels in the papillary dermis, which may sometimes become thrombosed [1,2].

Angiokeratoma of Fordyce may cause anxiety and social embarrassment as it is not cosmetically acceptable. Treatment involves proper counselling and reassurance regarding the benign nature of angiokeratoma. It is advisable to assess for signs of related conditions that could elevate vulval or scrotal venous pressure, as treating the underlying cause may lead to lesion resolution. Since medication therapy is not recommended, alternative treatment options may be considered if bleeding or cosmetic concerns arise. These techniques include cryotherapy, electrocautery, laser therapy, sclerotherapy, and surgical excision. Topical rapamycin has recently emerged as a newer treatment modality for angiokeratoma [12]. [Table/Fig-3] provides an overview of previous cases published on Angiokeratoma of Fordyce [3,13-15].

Author	Age (years)/ Gender	Site of lesions	Symptoms	Dermoscopy findings	Treatment
Bjekić M et al., [3]	25/M	Scrotum	Aymptomatic multiple black coloured papules	Well demarcated round dark lacunae	Nil
	42/F	Vulva	Asymptomatic small red papules	Well demarcated dark lacunae	
Bell KA et al., [13]	61/M	Scrotum	Multiple, enlarging, tender papules	Nil	Pulsed dye laser, topical rapamycin
Laamari K et al., [14]	24/M	Corona of glans penis	Soft to firm, non tender papules	Dark lacunae and white veil	Nil
Leis-Dosil VM et al., [15]	71/M	Glans penis	Aymptomatic, non tender reddish papules	Red oval lacunae with a peripheral white collarette	Nil
Rachamadugu K et al.,	70/M	Scrotum	Asymptomatic, multiple, skin-coloured, non tender papules	Well-demarcated round reddish lacunae with a whitish veil	Cryotherapy

[Table/Fig-3]: Case reports on Angiokeratoma of Fordyce [3,13-15].

CONCLUSION(S)

Fordyce type of angiokeratoma is a rare condition that typically presents as asymptomatic, hyperkeratotic vascular cutaneous lesions, often leading to misdiagnosis. To address this issue, a non invasive technique, dermoscopy, has been adapted, which demonstrates classic features of angiokeratoma of Fordyce, thereby avoiding the need for a biopsy, which many patients hesitate to undergo due to the invasiveness of the procedure. The primary therapy involves proper counselling and reassurance, as the majority of cases do not necessitate treatment. However, treatment becomes essential in symptomatic cases such as bleeding or in situations where anxiety is related to cosmetic disfigurement. Various treatment modalities include laser therapy, electrocoagulation, surgical excision, or cryotherapy depending on the site of involvement.

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