

## BRIEF ARTICLE

## Angiokeratoma Corporis Diffusum in the Absence of Known Metabolic Disease and Systemic Features

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### ABSTRACT

Angiokeratomas are benign capillary ectasias in contact with epidermis. Angiokeratoma corporis diffusum (ACD) is a clinical variant typically associated with an enzyme deficiency in the metabolism of glycoproteins, most notably Fabry disease. ACD has also been found to occur in a benign form with the absence of metabolic disease and lack of systemic features. We present the case of ACD in a 20-year-old male with normal enzyme function and in the absence of any detectable metabolic disorders.

### INTRODUCTION

A 20-year-old male presented for treatment of violaceous lesions on the trunk, buttocks, and thighs that had been present since adolescence and had gradually increased in size and number. The lesions would often bleed with minor trauma but were otherwise asymptomatic. There was no history of similar lesions in any family members. Medical history was remarkable for attention-deficit hyperactivity disorder, diabetes mellitus, and hypertension. Physical exam revealed diffuse papules coalescing into hyperkeratotic plaques of varying thickness on the anterior and posterior trunk, buttocks, and upper thighs (**Figure 1**, **Figure 2**). Histopathological findings were consistent with angiokeratoma. The patient reported a suspected diagnosis of a lysosomal storage disease from a previous provider. Review of external medical records indicated negative initial testing for Fabry disease, with subsequent plans to perform a urine

oligosaccharide profile, to be followed by DNA testing. This would identify potential lysosomal storage conditions associated with angiokeratoma corporis diffusum. Given the complexity of the lesions we recommended a serial approach utilizing neodymium-doped yttrium aluminum garnet (Nd:YAG) laser for the deeper/purple component and pulsed dye laser (PDL) for the superficial/redder component.

### CASE REPORT

Angiokeratomas are vascular lesions characterized histologically by capillary ectasia in the papillary dermis with epidermal hyperplasia. These lesions typically present as purple papules or dark red to blue violaceous nodules or plaques with warty or hyperkeratotic features. Notably, hyperpigmentation may result from intra-epidermal hemorrhage or dermal hemosiderin deposition.<sup>1</sup> Several clinical variants of angiokeratomas have been

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**Figure 1.** Hyperkeratotic plaques on trunk, buttocks, and upper thighs.



**Figure 2.** Hyperkeratotic plaques on right buttock and flank.

described owing to the different entities causing vessel dilation. They are classified according to their clinical characteristics as systemic, usually associated with an inborn error of metabolism, or localized, commonly presenting unilaterally on the lower extremities.<sup>2</sup>

Localized variants include the solitary papular form which tends to be larger and more verrucous than the other variants and favors the lower extremities.<sup>3,4</sup> Fordyce-type angiokeratomas are usually localized to the genitals as solitary or multiple lesions. Angiokeratoma circumscriptum naeviforme is the congenital form that presents as multiple lesions, usually unilaterally on the lower leg, foot, thigh, and buttock. Finally, angiokeratomas of Mibelli is characteristically found over the bony prominences on the dorsum of the hands and feet.<sup>5</sup>

The systemic variant, Angiokeratoma corporis diffusum (ACD), is prominently associated with lysosomal storage diseases, notably Fabry disease. This X-linked disorder caused by  $\alpha$ -galactosidase A deficiency, leads to the accumulation of glycosphingolipids in endothelial cells results in impaired capillary wall integrity.<sup>3</sup> According to a multicenter European database, angiokeratomas are the most common skin finding in Fabry disease, occurring in about 66% of males and 36% of females.<sup>6</sup> These lesions most commonly increase in number with age and occur between the umbilicus and the knees. While ACD was previously thought exclusive to Fabry disease, it has been identified in various rare genetic disorders including GM1 gangliosidosis, fucosidosis, Kanzaki disease, sialidosis, and  $\beta$ -mannosidosis. Idiopathic cases have been reported in patients with normal enzyme function and in the absence of any detectable metabolic disorders.<sup>3</sup>

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