

## Can Fractionated Microneedle Radiofrequency be an Effective Procedure for Treatment of Fox–Fordyce Disease? A Medical Hypothesis

Sir,

Fox–Fordyce disease (FFD), also known as apocrine miliaria, is a chronic and pruritic disorder of the apocrine glands. It presents as dome-shaped, skin-colored, and discrete perifollicular papules in the axillary skin.<sup>[1]</sup> Although the pathogenesis of FFD is not fully understood, occlusion of the apocrine duct resulting from the accumulation of keratin in the follicular infundibulum has been shown to have an important role. The lymphohistiocytic infiltration may be the cause of intense pruritus.<sup>[1]</sup>

Treatment of FFD is difficult and can be challenging; however, treatment is often necessary because of associated pruritus. There is no standard guideline for treatment of FFD because data on treatments are limited to case reports and small series. The initial preferred treatment options are topical corticosteroids, topical clindamycin, and topical calcineurin inhibitors.<sup>[2]</sup> Oral and procedural therapies are primarily reserved for refractory disease.<sup>[3]</sup>

The fractionated microneedle radiofrequency (FMR) device, which delivers heating in a fractional manner, was introduced for the use in skin treatments including skin rejuvenation,<sup>[4]</sup> acne scar,<sup>[5]</sup> axillary hyperhidrosis,<sup>[6,7]</sup> and striae alba.<sup>[8]</sup> The FMR device delivers uniform heat at a controlled depth to the dermal-hypodermal layers where the sweat glands and hair follicles are present,<sup>[4]</sup> resulting in thermolysis of the sweat glands and subsequent necrosis.<sup>[9]</sup>

It has been shown that FMR in the treatment of primary axillary hyperhidrosis (PAH) can induce a decrease in the number and size of both sweat glands and hair follicles.<sup>[9]</sup>

The existence of zones of thermal wounds between areas of unaffected zones can be a supply of reservoir cells to promote healing, so there is less downtime and considers as a safe modality.<sup>[10,11]</sup> In addition, skin needling with microneedles has been reported to stimulate the migration and proliferation of keratinocytes and fibroblasts by inducing the release of several growth factors,<sup>[4,12]</sup> which may alter the patterns of infiltration around the hair follicle and may contribute to the resolve of intense pruritus.

Although there are no reports on the application of FMR in FFD, given the important role of occlusion of the apocrine gland in the pathogenesis of FFD and the efficacy of FMR on sweat glands and hair follicles, we hypothesized that FMR can be effective against FFD. Therefore, clinical studies on this subject are warranted.

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### Conflicts of interest

There are no conflicts of interest.

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