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A rare complication of follicular hair unit extraction: Kaposi's varicelliform eruption

A. Tulin Mansur[1], Gulsen T. Demirci[1], M. Adnan Uzunismail[2], Semsi Yildiz[3]

1 Department of Dermatology, Baskent İstanbul University Hospital, İstanbul, Turkey
2 Department of Plastic Surgery, Baskent İstanbul University Hospital, İstanbul, Turkey
3 Department of Pathology, Baskent İstanbul University Hospital, İstanbul, Turkey

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Corresponding author: Gulsen Tukenmez Demirci, MD, Başkent Üniversitesi İstanbul Hastanesi 3. Poliklinik Binası MahirİZ Cad. No:43 P.K. 34662, Turkey. Tel. +9005334918376; Fax. +902166515153. Email: gulsentukenmez@yahoo.com

ABSTRACT

Follicular hair unit extraction (FUE) is becoming a popular type of hair transplantation recently. Kaposi's varicelliform eruption (KVE) is an uncommon skin emergency due to cutaneous dissemination of several types of viruses, most notably herpes virus, over the lesions of preexisting skin disorders.

A 34-year-old man visited our dermatology outpatient clinic with a blistering, itchy and tender eruption on his head and body. He had undergone follicular FUE for androgenic alopecia 12 days previously, and 5 days after the procedure, umbilicated and/or hemorrhagic vesiculopustules appeared firstly on the occipital scalp skin where the hair units were taken. The lesions had rapidly spread over the upper chest and back. After the operation, he had taken oral methylprednisolone, amoxicillin clavulanate and had used fusidic acid ointment without any benefit. Bacterial culture of the pustules yielded no microorganism, while Tzanck smear from the vesicles revealed multinuclear giant cell groups. Based on a diagnosis of KVE, we treated the patient with oral valacyclovir hydrochloride 1000 mg 3 times a day for 14 days. Symptoms cleared rapidly, pustules and vesicles dried in a few days, and re-epithelialization of the eroded areas started at the end of the first week.

The reported complications of FUE include necrosis of the donor site, postoperative hyperesthesia, recipient area folliculitis, keloids, bleeding, infection and pyogenic granuloma. Up to this date there are only three reports of KVE developing just after dermatological surgery, including dermabrasion, laser resurfacing, and skin grafting. According to our knowledge, this is the first case of KVE occurring after the FUE procedure. We think that the traumatic effects and skin barrier disruption due to operation and immune alteration due to postsurgical steroid treatment might have precipitated the activation and dissemination of latent herpesvirus infection.

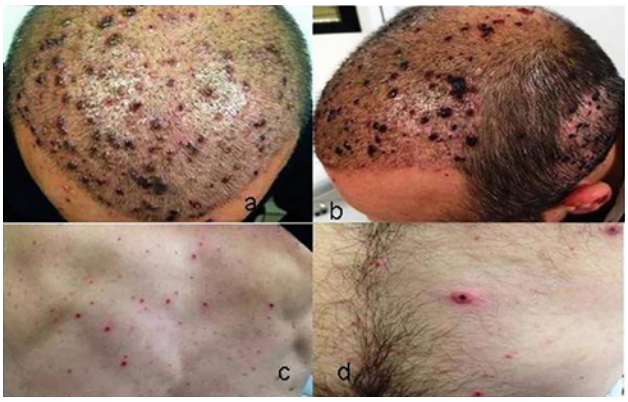

Figure 1. (**a, b**) Several vesiculopustules spreading on the hairy scalp. Note some of them are intact, dome shaped and/or umbilicated vesicles, some contain hemorrhagic serum with overlying dark-colored scabs. (**c, d**) There are also similar lesions scattered over the neck and upper trunk. [Copyright: ©2015 Mansur et al.]

Introduction

Follicular hair unit extraction (FUE) has become a popular type of hair transplantation in recent years because of many advantages for both patients and the surgeons. FUE is performed by extracting follicular units with the aid of 1 mm punches and implanting them to the unhaired scalp skin [1]. Although this procedure has been performed on a large number of patients, only a few complications have been reported in the literature [2]. Kaposi's varicelliform eruption (KVE) is an uncommon skin emergency due to cutaneous dissemination of certain viral agents, most commonly herpesviruses, on a preexisting dermatosis. There are some reports of KVE developing just after some dermatological treatments, such as dermabrasion and skin grafting [3-5]. Herein, we report a case of KVE that occurred after an FUE procedure.

Case report

A 34-year-old man visited our dermatology outpatient clinic with an itchy and tender eruption on his head and body. Twelve days before his referral, he had FUE for androgenetic alopecia at another clinic. After the operation he had been given methylprednisolone 32 mg per day for 3 days, and 16 mg per day for 2 days. On the sixth postoperative day, vesiculopustular lesions had started to appear on the occipital area where the hair units had been taken, and then they rapidly spread over the whole scalp, neck and upper trunk. He had received amoxacillin clavulanate 625 mg 3 times a day and applied topical fusidic acid ointment twice a day, with a diagnosis of pyoderma. As the lesions did not improve, it was suggested that the eruption was an allergic drug reaction, and the patient was referred to our hospital.

He had no preexisting dermatoses including atopic dermatitis and he was immunocompetent.

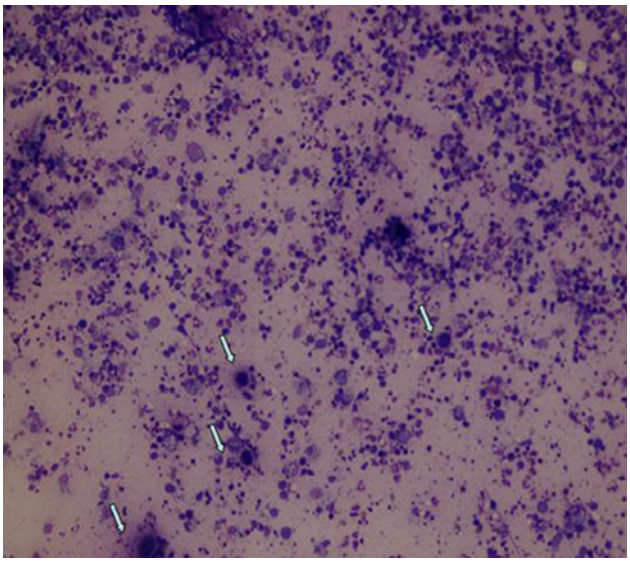

Figure 2. Tzanck smear with Giemsa stain show multinucleated giant cells. [Copyright: ©2015 Mansur et al.]

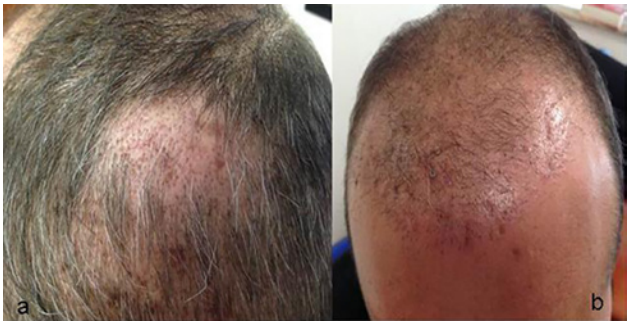

Figure 3. At the end of the fourth week almost all lesions were healed with atrophic scars. [Copyright: ©2015 Mansur et al.]

Skin examination revealed numerous dome-shaped vesiculopustules, some umbilicated, hemorrhagic, and crusted. They were mostly seated on the hairy scalp but also scattered over the neck, upper chest and back (Figure 1). Tender discrete lymph nodes were palpated on cervical areas. There was no sign of ophthalmic or labial herpes. Oral mucosa was intact and the rest of his physical examination was unremarkable. Routine biochemical and hematologic tests were within normal limits except for increased white blood cell count (12,000/μL), and increased level of C reactive protein (28 mg/L). Serum total IgE level was not elevated (40.2 U). Bacterial culture of the pustules yielded no microorganism, while Tzanck smear from the vesicles revealed multinucleate giant cell groups (Figure 2). After diagnosis of KVE based on clinical and laboratory findings, we treated the patient with oral valacyclovir hydrochloride 1000 mg 3 times a day, and topical mupirocin ointment twice a day for 14 days. Symptoms cleared rapidly, pustules and vesicles dried up in a few days, and re-epithelialization of the eroded areas started at the end of the first week. At the fourth week, the lesions had mostly improved with some of them leaving behind atrophic scars (Figure 3).

Discussion

Kaposi's varicelliform eruption (KVE) is an uncommon skin disorder resulting from sudden dissemination of herpes simplex virus (HSV) Type I and II, Coxsackie virus and Vaccinia virus over some skin conditions. The most common etiologic agent is herpes simplex virus, and the lesions are mainly superimposed on atopic dermatitis [6]. KVE has also been reported in patients with Darier's disease, pityriasis rubra pilaris, psoriasis, seborrheic dermatitis, rosacea, contact dermatitis, pemphigus foliaceus, Hailey-Hailey disease, Grover's disease, ichthyosis vulgaris, congenital ichthyosiform erythroderma, mycosis fungoides, Sézary syndrome, lupus vulgaris and burns [7,8].

Kaposi's varicelliform eruption is characterized by closely grouped, painful, monomorphic, umbilicated vesicles, accompanied by fever, malaise, and regional lymphadenopathy. The vesicles tend to evolve rapidly to pustules or dry out, forming crusts over punched-out erosions during the course of the disease. The eruption is most frequently located on the head, neck, and the upper part of the body, and spreads caudally in 7 to 10 days [3-9].

The diagnosis of KVE is mainly clinical and usually not challenging, when there are umbilicated vesiculopustules that progress to punched-out and crusted erosions in areas of preexisting dermatosis, accompanied by systemic findings. Tzanck test is a time-honored and quick test that can provide diagnosis when characteristic acantholysis and multinucleated giant cells appear. Viral culture, direct fluorescent antibody staining, and PCR can support the diagnosis if the lesions are atypical and Tzanck smear is not fruitful [6]. Both histopathologic examination and serology are of little diagnostic value and are not recommended on a routine base [9]. In our patient, the virtually pathognomonic lesions, which started on the donor area and rapidly spread over the head and upper trunk in addition to multinucleated giant cells consistent with the HSV infection, led us to the diagnosis of KVE that developed on areas of FUE.

The etiopathogenesis of KVE is not elucidated yet, but the impaired function of skin barrier has been suggested to play the major role for the disease [6,9]. Accordingly, KVE has been reported on skin disorders in which the skin barrier is disrupted, either by congenital defects, such as atopic dermatitis and ichthyosis, or by acquired disorders, such as pemphigus and burns. Immunosuppression due to medication or immune deficiency disorders, also have been an additional risk factor for increased spread of HSV on the skin [4,6,9].

In our patient, who had not had an underlying skin condition or immune disorder, KVE developed just after FUE procedure. We think that the traumatic effect of punch biopsies and multiple minute wounds causing skin barrier dysfunction might have been a triggering factor for KVE. Psychogenic stress due to the operation and the oral corticosteroid regimen just after the procedure might have suppressed the immune defense of the patient and precipitated the activation and dissemination of latent herpes virus infection.

The reported complications of FUE include necrosis of the donor site, postoperative hyperesthesia, recipient area folliculitis, keloids, and pyogenic granuloma [2,10]. KVE occurring after dermatologic surgery, including skin autografting, laser resurfacing, and dermabrasion, has only been reported three times [3-5].

According to our knowledge, this is the first report of KVE occurring after FUE procedure. It is important to diagnose the clinical features of this disease because it may progress to a systemic disease if the antiviral treatment is not started promptly. Surgeons dealing with hair transplantation should be aware of this rare complication.

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