

Follicular Traction Urticaria: An Occult Case Diagnosed by Patch Testing

To the Editor:

Follicular traction urticaria (FTU) is a recently introduced term to describe the development of tiny wheals after traction/removal of the hairs in the absence of dermatographism.¹⁻⁵ Herein, a unique patient is presented who tolerated well the previous episode of waxing 1 month earlier in whom removal of patch test plasters was the presenting and initial trigger of FTU.

A 28-year-old nonatopic Turkish woman with suspected allergic contact dermatitis from adhesive wound tape underwent patch testing according to European Society of Contact Dermatitis patch test guidelines. Test plasters were covered with Hypafix tape, and occlusion was for 2 days. Tiny pruritic wheals of 1 to 3 mm, surrounded by an area of erythema, developed within 5 to 10 minutes after removal of patch tests on day 2 (Fig. 1A) and resolved spontaneously within 1 to 2 hours.

She had been getting laser hair removal for the past 1.5 years, without any problem. The last colophonium-free sugar wax depilation on the face and bikini areas 1 month prior caused no wheal-and-flare reaction.

Trigger factors such as drugs, focal/systemic infections, or autoimmune/systemic diseases were ruled out. There were no spontaneous attacks of urticaria or other forms of inducible urticaria such as linear/follicular dermatographism, heat, pressure, or vibration urticaria.

Hair removal test using Hypafix tape on the outer parts of the forearm and the upper arm led to pruritic, exclusively follicular urticarial papules within 5 to 10 minutes (Figs. 1B, C) resolving completely within 1 to 2 hours. The reaction could be highly inhibited by a 3-day course of desloratadine, two 5 mg pills twice daily peroral before, on, and after the day of the next epilation with sugar wax.

The term "traction urticaria" was first introduced by Gallo et al¹ to describe an unusual form of physical urticaria where wheals were suggested to be triggered exclusively by skin traction after removal of patch tests from a patient who had no

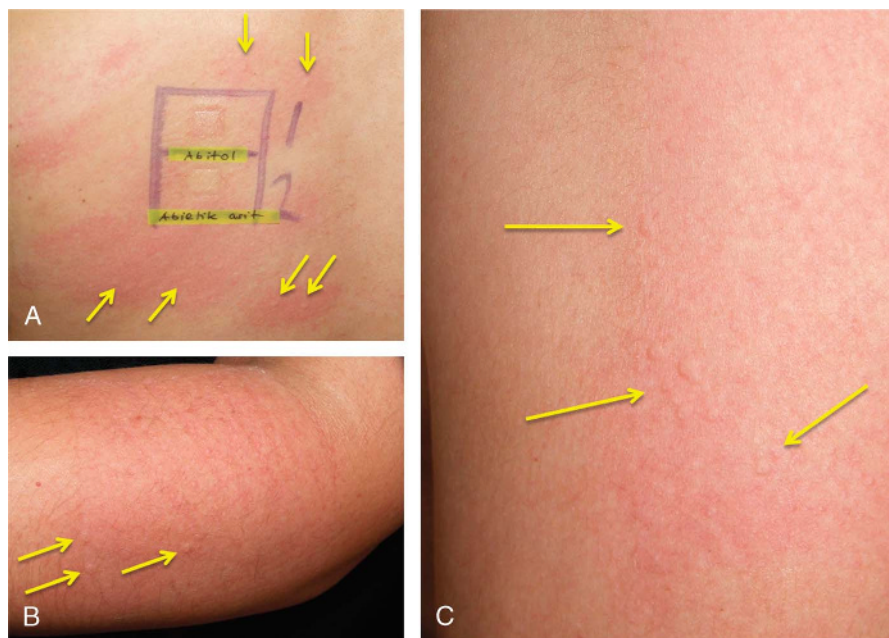


Figure 1. Follicular traction urticaria. A, Exclusively follicular urticarial papules (arrows) surrounded by erythema on the patch test area on the back, which developed within 5 to 10 minutes after removal of patch tests; on the outer part of the forearm (B); and on the upper arm (C) after hair removal test using adhesive tape.

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dermatographism. We have recently suggested renaming the condition "follicular traction urticaria" because hair traction seemed to be the exclusive trigger of tiny wheals rapidly appearing after

TABLE 1. Characteristics of Patients With Follicular Traction Urticaria

Author (Year)	Age/Sex	Current Trigger	Site of the Reaction (Any Spared Site)	Onset and Duration of the Reaction	Other Triggers (FTU Since When)	Linear/Papular Dermographism/ Other Types of Chronic IU/SU	Provocation Test Results
Gallo et al ¹ (2009)	25/F	Removal of patch test plasters	Patch test area	Rapid appearance/ spontaneous resolution within 3 h	Wax epilation of the legs (2 y)	Absent Stroking the skin with a pencil was negative	Gentle hair traction: positive
Özkaya and Yazganoğlu ² (2012)	32/F	Waxing or electrical epilation	Legs	Appearance within 10–15 min/ spontaneous resolution within 2–3 h	Plucking the eyebrows by tweezers (7 mo)	Absent Stroking the skin with a blunt object was negative	Gentle hair traction: negative Hair removal test with electrical epilator: positive
Duman et al ³ (2016)	29/F	Waxing or electrical epilation	Legs and forearms	Appearance within 5–15 min/ spontaneous resolution within 1–2 h	Plucking the eyebrows by tweezers causing erythema and mild pruritus only (1 y)	Absent Stroking the skin with a blunt object was negative	Gentle hair traction: negative Skin traction: negative Hair removal tests with wax/ electrical epilator/ plaster: positive
Raison-Peyron et al ⁴ (2017)	19/F	Waxing or electrical epilation	Legs and pubic area (all other sites*)	Appearance within 15–30 min/ spontaneous resolution within 15–18 h (long-lasting)	Plucking the eyebrows and armpit hair (2 y/3 mo*)	Absent Stroking the skin with a prick test was negative	Hair removal test with electrical epilator: positive
Patel and Lockey ⁵ (2018)	20/F	Shaving with wet straight razor	Legs (axilla)	Appearance within 30 min/ spontaneous resolution within 2 h	NM (3 mo)	Absent Stroking the skin with a blunt object was negative	Not performed. History and clinical appearance were characteristic for FTU
Özkaya (this case)	28/F	Removal of patch test plasters	Patch test area	Appearance within 5–10 min/ spontaneous resolution within 1–2 h	None (acute) Last sugar wax epilation on the face and bikini areas 1 mo ago was well tolerated. Laser epilation since 1 y well tolerated	Absent Stroking the skin with a blunt object was negative	Gentle hair traction: negative Hair removal test using adhesive tape: positive

*Lesions were initially restricted to the legs and pubic area for 2 years, whereas new lesions developed after plucking the eyebrows and armpit hair 3 months ago.

Abbreviations: FTU, follicular traction urticaria; IU, inducible urticaria; NM, not mentioned; SU, spontaneous urticaria.

traction or removal of the hairs.² Subsequently, a few new cases of FTU have been published (Table 1).^{1–5} Waxing or electrical epilation was the main trigger.^{1–5}

The differential diagnosis included transient nonitchy papules after epilation⁴ and follicular dermographism where stroking the skin with a firm object results in follicular whealing, probably due to high density of perifollicular mast cells. None of the patients reacted to stroking the skin with a blunt object

(Table 1). Furthermore, the presented patient tolerated well laser epilation, which might induce urticaria in rare instances.

This was an unusual case of acute FTU, initially triggered by patch testing. Patients with FTU seem to be highly sensitive to stimulation of perifollicular mast cells by traction of hairs and the resulting tension on and around the hair follicles. The underlying factors, as well as the trigger threshold, remain to be determined. We believe that hair traction/removal might be

considered as a novel trigger of inducible urticaria and FTU might be considered as a distinct form of inducible urticaria.

Esen Özkaya, MD

Department of Dermatology and Venereology
Istanbul Faculty of Medicine, Istanbul University
Istanbul, Turkey
profeo@istanbul.edu.tr

REFERENCES

1. Gallo R, Fausti V, Parodi A. Traction urticaria. *Contact Dermatitis* 2009;61:301–302.
2. Özkaya E, Yazganoğlu KD. Follicular traction urticaria. *J Am Acad Dermatol* 2012;67:e234–e236.
3. Duman H, Topal IO, Kocaturk E. Follicular traction urticaria. *An Bras Dermatol* 2016;91(5, suppl 1):64–65.
4. Raison-Peyron N, Reymann V, Bessis D. Follicular traction urticaria: a new form of chronic inducible urticaria? *Acta Derm Venereol* 2017;97:522–523.
5. Patel SS, Lockey RF. Follicular traction urticaria. *J Allergy Clin Immunol Pract* 2018;6:1383.

Methylisothiazolinone: Still on Leave-on Products, but No Longer on Baby Wipes

To the Editor:

Methylisothiazolinone (MI) and its related thiazolinone derivatives including methylchloroisothiazolinone (MCI) and octylisothiazolinone are potent biocides used as preservatives in primarily industrial products such as paints, solvents, and cleaning fluids. Methylisothiazolinone and MCI are potent sensitizers and can cause both occupational and nonoccupational allergic contact dermatitis (ACD). Methylchloroisothiazolinone and MI, at a ratio of 3:1, used as a combined biocide, caused a rise in nonoccupational cases of ACD in the late 1980s, related to primarily cosmetic non-rinse-off personal care products.¹

In 2005, MI began to be used as a noncombination preservative in cosmetic and household products at a maximum

concentration of 100 ppm, 26 times the MI level in the MCI/MI combination preservative.² This change drove an epidemic of nonoccupational MI ACD in the early and mid-2010s. The first and most memorable of these cases were related to MI-containing wet wipes/baby wipes.³ These cases and the resulting medical and media attention drove increased regulation in the European Union and new guidelines by the leading US-based trade association.⁴ This attention has impacted the choice of preservative use among baby wipe manufacturers, resulting in a near absence of MI in commercially available baby wipes.

The 100 best-selling items in the product categories baby wipes, lotions, and sunscreens from 2 major North American online retailers (Amazon and Walmart), as listed on their Web sites, were screened for MI and other preservative contents by ingredient list screening (Table 1, Supplemental Digital Content 1, <http://links.lww.com/DER/A19>, and Table 2, Supplemental Digital Content 2, <http://links.lww.com/DER/A20>). After excluding identical products with minor packaging differences (eg, different packaging sizes or dispensing mechanisms), 31 and 44 unique baby wipe products were identified from these 2 retailers. Of these, none listed MI or other isothiazoline derivatives as ingredients—for 5 products, no ingredient lists were available (Table 1). In contrast, 6.6% (4/61) and 5.4% (3/55) of the unique lotions from these retailers contained MI. Similarly, 12.2% (6/49) and 6.8% (3/44) of sunscreens from these retailers contained MI. Common preservatives used in baby wipes from these retailers include phenoxyethanol, sodium benzoate, and sorbic acid derivatives (Table 1).

Baby wipes have historically been a relevant avenue for MI sensitization and elicitation. However, based on this

TABLE 1. Preservatives Listed in Popular Baby Wipes From 2 Online Retailers

	Retailer 1 n = 31	Retailer 2 n = 39*
Phenoxyethanol	14 (45)	20 (51)
Sodium benzoate	20 (65)	23 (59)
Sodium citrate/citric acid	22 (71)	26 (67)
Potassium sorbate/sorbic acid	8 (26)	8 (21)
Iodopropynyl butylcarbamate	0	4 (10)
Silver citrate/silver dihydrogen citrate	3 (10)	1 (3)
Ethylhexylglycerin	2 (6)	1 (3)
Sodium levulinate/levulinic acid	1 (3)	2 (5)
Citrus grandis seed extract	1 (3)	2 (5)
Parabens	0	2 (5)
Dehydroacetic acid	1 (3)	1 (3)
Alcohol	1 (3)	1 (3)
Others (DMDM hydantoin, benzalkonium chloride, p-anisic acid)	0	3 (8)

Values are number (percentage).

*Ingredient lists were not available for 5 products.

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C.R.H. and S.S. had full access to all of the data in the study and take responsibility for the integrity of the data and the accuracy of the data analysis. C.R.H. and K.A.Z. did the study concept and design. All authors did the acquisition, analysis, and interpretation of data; drafting of the article; critical revision of the article for important intellectual content; administrative, technical, or material support; and study supervision.

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