

# Neonatal Urticaria Due To Topical Mupirocin

## Topikal Mupirosine Bağlı Yenidoğan Ürtikeri

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#### Abstract

Urticaria is one of the most common childhood dermatoses, but is uncommon under the age of 6 months. There are only few studies defining the characteristics, etiology and therapy of urticaria in this age group. As urticaria is uncommon under the age of 6 months and very few medications have been tested for safety or efficacy in this age group, there is little information in the literature regarding its therapy. We herein report a newborn who developed urticaria due to mupirocin ointment, which has not been reported previously, and aimed to discuss the treatment of this rare condition in newborns.

Key Words: **Infant, Newborn; Mupirocin; Urticaria.**

#### Özet

Ürtiker çocukluk çağında sık görülen deri hastalıklarından biridir, ancak 6 aydan küçük yaşta nadirdir. Bu yaş grubuna özgü ürtikerin özelliklerini, etyolojisini ve tedavisini tanımlayan sadece birkaç çalışma vardır. Ürtiker 6 aydan küçüklerde nadir olduğundan ve bu yaş grubunda sadece bir kaç tedavinin etkinliği ve güvenilirliği denenmiş olduğundan, literatürde tedavisi ile ilgili çok az bilgi mevcuttur. Bu yazıda, daha önce bildirilmemiş olan mupirosine bağlı yenidoğan ürtiker olgusu sunularak yenidoğanlardaki bu nadir durumu tartışmayı amaçladık.

Anahtar Kelimeler: **Yenidoğan; Mupirosin; Ürtiker.**

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## Introduction

Urticaria is one of the most common childhood dermatoses affecting up to 15%-20% of children before adolescence, but is relatively uncommon under the age of 6 months (1). As urticaria is relatively uncommon under the age of 6 months and very few medications have been tested for safety or efficacy in this age group, there is little information in the literature regarding its therapy (2). Much of information about current management has been derived from studies performed in older children and adults (3).

We herein report a newborn who developed urticaria due to topical mupirocin (Bactroban, GlaxoSmithKline, Brentford, England) ointment, which has not been reported previously, and aimed to discuss the treatment of this rare condition in newborns.

## Case Report

A 24-day-old male infant admitted to Pediatric Emergency Room was referred to Neonatology Department because of diffuse rash that appeared a few hours ago. The infant had been delivered to a healthy 26-year-old gravida 2 mother following an uncomplicated pregnancy. He was exclusively breast-fed up to 24<sup>th</sup> day. The parents had applied to a physician for penile phymosis, and mupirocin as topical application had been prescribed to treat the abrasion on glans on the previous day before rash developed. The mother told that she had penicilline allergy, but there was no history of any additional drug use in both the infant and mother.

The rash was maculopapular, migratory, with individual lesions lasting several hours and then fading without any residual skin discoloration. It was diffuse but common especially on extremities and gluteal region, and did not seem to itch (Figure 1). The physical examination of the infant was normal. The laboratory data including complete blood count, C-reactive protein, protrombin time and partial thromboplastin time ruled out infection and hematological diseases. The only pathologic finding in laboratory data was peripheral blood smear that demonstrated moderate eosinophilia (8%).

The characteristics of the rash, atopy history in family and laboratory results led us to the diagnosis of urticaria due to mupirocin. The application of the mupirocin was discontinued. Cetirizine (Zyrtec, UCB, Brussels, Belgium) 1 mg/kg in drop form orally and methyl-prednisolone (Prednol-L, Mustafa Nevzat, Istanbul, Turkey) 1 mg/kg

intramuscular were administered. The lesions faded in few hours and after 4 hr observation in emergency room, we planned to follow the patient ambulatory. All lesions except for those that faded on extremities disappeared on the following day and cetirizine was discontinued.



**Figure 1.** Maculoerythematous type rash was obvious around the umbilicus and gluteal region and extending to the extremities.

## Discussion

The maculoerythematous lesions of our patient were in accordance with urticaria. The classical wheals of urticaria are slightly raised, blanching, pink-red, edematous, geographic or annular papules and plaques of varying sizes. Lesions may appear anywhere on the skin and mucous membranes, and if generalized, may become confluent or polycyclic. By definition, individual lesions are transient, often changing by the hour, and do not persist in the same location for more than 24 hours (3). Two studies involving infants with urticaria and aged less than 6 months showed that all infants had acute urticaria (1, 2).

A careful history and physical examination are usually sufficient to determine the diagnosis and likely etiology of urticaria. Laboratory studies, although often suggested, are usually unnecessary and yield negative results, but they may help to confirm a suspected diagnosis (4). In drug induced urticaria, the eosinophil count may be elevated as we observed in our patient (2).

The most common causes of urticaria in children are infections, medications, food allergy, physical agents, and insect bites (5). In a study of 57 infants aged 1-36 months with urticaria, the most commonly medications associated with urticaria were amoxicillin, cephalosporins and macrolides, but the study included only two infants under the age of 6 months with urticaria (2). A second study included 12 patients under the age of 6 months who had acute urticaria and the most common etiology of acute urticaria was reported as food allergy (1). Thus, in children under the age of 6 months, food and infection, rather than medications, seem to be the most common causes (1, 2). In the present patient, urticaria appeared after the application of mupirocin for penile abrasion. It is highly probable that mupirocin, introduced for two days, was the cause because no other medication had been introduced during the 24 proceeding days. Mupirocin is a topical antibiotic which is commonly used in children. It is usually well tolerated but can occasionally induce burn-type lesions, rash, edema and exudation (6). Mupirocin contains polyethyleneglycol as an excipient, a product well known for its allergic properties (7). It seems reasonable to imply a highly probable relationship between urticaria and the application of mupirocin, although such a phenomenon has never been described in a newborn in the literature. Our patient had a family atopy history with an allergy to penicillin in addition to damaged penile skin due to

fimosi. All of these elements might have enhanced a hypersensitivity reaction to the topical application of mupirocin and provoked urticaria.

The first step of therapy in urticaria is identification and avoidance of the causative factor. H1 antihistamines are the mainstay of urticaria therapy. Although no antihistamines have been tested or approved for use in children under the age of 6 months, several have been used as off-label prescribing in young infants. H1 antihistamines should be avoided or used with extreme caution in the neonatal period as a result of the potential increased risk of sedation, respiratory suppression, acidosis, or convulsions (4, 8, 9). Systemic steroids are rarely indicated for the treatment of urticaria, especially in infants, unless severe systemic symptoms are present. If used, a dose of 1 mg/kg/day as a single dose is recommended for acute urticaria in older children, but no data exist for infants (4). Although urticaria in newborns is typically benign, their presentations can be dramatic and alarming. This was the main reason why we used steroid in addition to cetirizine (that might be unnecessary) in our patient.

It is important to be aware of neonatal urticaria and its clinical futures, so that families can be reassured, excessive laboratory evaluations can be avoided, and proper treatment can be initiated promptly. Family education regarding generic and trade names of the medication is important to prevent future repeat exacerbations.

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