

CASE REPORT

Chronic urticaria due to *Blastocystis hominis*

Ritu Gupta and Kurosh Parsi

Department of Dermatology, St Vincent's Hospital, Sydney, New South Wales, Australia

SUMMARY

A 24-year-old woman had a 9-week history of second to third daily urticaria that began after an episode of contact urticaria to topical bufexamac. She was found to have an underlying gastrointestinal infection with *Blastocystis hominis*. This was thought to be clinically relevant as she had a history of mild chronic diarrhoea. After treatment of the *Blastocystis hominis*, her urticaria ceased. This could indicate the importance of performing stool microscopy and culture on all patients with chronic urticaria of unknown aetiology. The relationship of urticaria to intestinal parasites and the possibility that non-steroidal anti-inflammatory medications could act as cofactors that help precipitate an urticarial reaction is discussed.

Key words: bufexamac, contact urticaria, diarrhoea, hives, intestinal parasite, non-steroidal anti-inflammatory cream.

INTRODUCTION

Intestinal parasites are a rare but recognized cause of chronic urticaria.¹ There are, however, only two published reports to our knowledge concerning the role of *Blastocystis hominis* in chronic urticaria.^{2,5} This organism has previously been thought to be non-pathogenic and therefore clinical observations regarding its role in disease may be useful.⁴ We present a patient with an initial contact urticaria that evolved into chronic urticaria, probably precipitated by the use of a NSAID cream together with an underlying bowel infection.

CASE REPORT

A 24-year-old woman presented with a 5-day history of a bilateral itchy, erythematous eruption on her lower limbs that was initially diagnosed as cellulitis. She had a background history of hayfever for which she took oral cetirizine 10 mg daily but denied any other illnesses.

She had been on a holiday in Thailand 2 weeks prior to her presentation when she was bitten by mosquitoes on both feet and the right shin (three bites in total). These blistered and were debrided by the patient. She then applied a non-steroidal cream containing bufexamac 50 mg/g, lignocaine hydrochloride 10 mg/g and chlorhexidine gluconate 2 mg/g in a base of emulsifying wax, isopropyl palmitate, sodium calcium edetate, glycerol and sorbitol (Paraderm Plus®). The cream was used 2–3 times. The lesions improved over 1 week until 5 days prior to presentation when she noted an erythematous, itchy eruption on both lower limbs extending to the thighs and also on the eyelids. At the time of her worsening, she had reapplied Paraderm Plus® to the legs. She was initially treated with oral cephalexin 500 mg q.i.d. for 5 days, but the eruption continued to spread and worsen over this time. She was still taking the antibiotic when she presented to hospital. Systemically, she was mildly lethargic and had had one loose bowel motion on the morning of her presentation.

She was noted to have well-circumscribed, erythematous and oedematous plaques on her face, neck and upper thighs that came and went over a period of a few hours, possibly secondary to the use of Paraderm Plus®. A diagnosis of cellulitis due to insect bites with a secondary urticarial eruption was made. She was subsequently admitted and treated with intravenous ampicillin 1 g 6 hourly, intravenous dicloxacillin 1 g 6 hourly and oral promethazine 20 mg b.d. However, neither the skin rash nor the cellulitis improved and she developed new urticarial lesions on the face, neck and thighs.

She was re-examined and a revised diagnosis of contact urticaria was made. She was commenced on oral prednisone 25 mg daily for 3 days, topical betamethasone dipropionate cream 0.5 mg/g under wet dressings with aqueous cream three times daily and oral promethazine 20 mg nocte. Intravenous antibiotics were ceased and she was prescribed a 5-day course of oral dicloxacillin 500 mg q.i.d. All skin signs rapidly improved over the next 24 hours, and she was discharged the next day on prednisone for a further 2 days (in case of further urticaria), dicloxacillin 500 mg q.i.d. for 4 days and promethazine 20 mg nocte if required. The topical corticosteroid cream was ceased.

Correspondence: Dr Ritu Gupta, 24/14 Hosking Street, East Balmain, NSW 2041, Australia. Email: ritu1gupta@hotmail.com
Ritu Gupta, MB BS (Hons). Kurosh Parsi, FACD.
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Abbreviation:

NSAID	non-steroidal anti-inflammatory drugs
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At outpatient review 4 days post-discharge, skin examination was essentially normal and follow-up patch testing to the components of Paraderm Plus® was recommended but refused by the patient. One month later, she presented with a history of recurrent hives on the face, shoulder and right thigh. This had resolved following 2 days of oral prednisone 25 mg daily and cetirizine 10 mg daily. She also reported having had multiple episodes of hives lasting between 4 and 24 hours over the 4-week period since her discharge from hospital. This occurred despite regular use of cetirizine 10 mg mane and avoidance of Paraderm Plus® and other oral and topical NSAID. At the time of review, examination only showed dermatographism. A diagnosis of urticaria was made and she was advised to continue avoiding NSAID and aspirin and to continue taking daily cetirizine 10 mg mane.

She re-presented 1 month later complaining of an intermittent urticarial eruption occurring every few days despite daily cetirizine and avoidance of NSAID and aspirin. It was now 9 weeks since her initial presentation to the Emergency Department. An elimination diet consisting of boiled rice and pear did not have any effect and was abandoned after 4 days. Further history revealed that she had been diagnosed with irritable bowel syndrome earlier in Ireland on the basis of a 5-year history of 2–3 episodes of diarrhoea per day with associated cramping abdominal pain after certain foods including pasta and alcohol. This was ongoing but had not been mentioned by the patient during her hospital admission and therefore no bowel chart had been kept. Her condition had never been investigated and therefore she was advised to see a gastroenterologist, but she declined to do so. Her examination was unremarkable except for the presence of dermatographism.

A diagnosis of chronic urticaria was made and she was extensively investigated for a possible cause (Tables 1 and 2). Despite the growth of 4-plus *B. hominis* in her stool culture, she had a normal eosinophil count. In view of the history of diarrhoea and abdominal pain, it seemed possible that the *B. hominis* infection may have been present for a number of years. She was treated for the *B. hominis* infection with oral metronidazole 750 mg t.d.s. for 10 days.

On review 1 month later, the patient reported that the urticaria had ceased since finishing the metronidazole and that her diarrhoea and abdominal pain had also disappeared. Despite stopping cetirizine, the urticaria did not recur. Repeat stool sample showed no evidence of *B. hominis* nor of any other organism.

DISCUSSION

Paraderm Plus® is unlikely to have been a direct cause of our patient's ongoing urticaria as despite having ceased its use, she still had episodic urticaria 9 weeks later. For this reason, we thoroughly investigated her for a possible cause. There are differing opinions in the literature as to whether chronic urticaria should be investigated with a battery of tests, or whether thorough history taking should suffice in the first instance as it often resolves spontaneously and no cause is found. In our patient, a thorough history of the

Table 1 Normal and negative results

Full blood count
Renal function tests
Liver function tests
Antinuclear antibodies
Rheumatoid factor
Extractable nuclear antibodies
Complement levels
Serum and protein electrophoresis
<i>Helicobacter pylori</i> serology

Table 2 Abnormal results

	Result	Normal range
Serum IgA	3.6	0.7–5.4 g/L
Stool culture	Heavy growth of <i>Blastocystis hominis</i>	

events surrounding the urticaria uncovered the only possible precipitant as a gastrointestinal infection and as these only rarely cause urticaria, comprehensive investigations were indicated.

Blastocystis hominis has been implicated in two reports as a cause of chronic urticaria.^{2,5} It is an intestinal protozoan regarded by some as a mere commensal⁴ and by others as a parasite that can cause diarrhoea and intestinal disease.⁵ The main risk factor for infection with *B. hominis* is exposure to contaminated drinking water, and for this reason the incidence of infection is highest in developing nations. Our patient denied having had any such exposure prior to the onset of her diarrhoea and abdominal cramps 5 years ago.

One case report concerning the role of *B. hominis* in chronic urticaria² described a woman with a 6-year history of chronic urticaria and severe asthma after aspirin or diclofenac ingestion. Her stool culture grew *B. hominis* which was treated with an aminoglycoside antibiotic, paromomycin. After eradication of the parasite, she was finally free of urticaria. The possibility that aspirin or NSAID acted as cofactors with *B. hominis* in causing the urticarial reaction was suggested by the authors. Non-steroidal anti-inflammatory drugs have been reported to act as cofactors in urticarial reactions that have involved either exercise or food provoking anaphylaxis or severe urticaria in the presence of a prior history of aspirin or NSAID ingestion.^{6–8} The only other report we have found concerning *B. hominis* described chronic urticaria in 10 patients infected with *B. hominis*. Again, the urticaria ceased after treatment of the infection with paromomycin.⁵

This case provides further evidence that *B. hominis* can be associated with chronic urticaria and that concomitant NSAID exposure could precipitate the urticaria by an as yet unknown mechanism. The successful eradication of *B. hominis* in our patient and in the cases in the literature resulted in clearing of urticaria. We therefore suggest that stool microscopy and culture be performed on patients with chronic urticaria of unknown aetiology.

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