

# Perianal streptococcal infection precipitating pustular psoriasis in an adult



Corinne Maiolo, MBBS,<sup>a</sup> Samuel M. Kwok, MBBS,<sup>a</sup> Christopher Ross, BMBS,<sup>a</sup> and Jan Ibbetson, MBBS, FRCPA<sup>b</sup>  
Adelaide, Australia

**Key words:** adult; infection; perianal; psoriasis; pustular; *Streptococcus*.

## INTRODUCTION

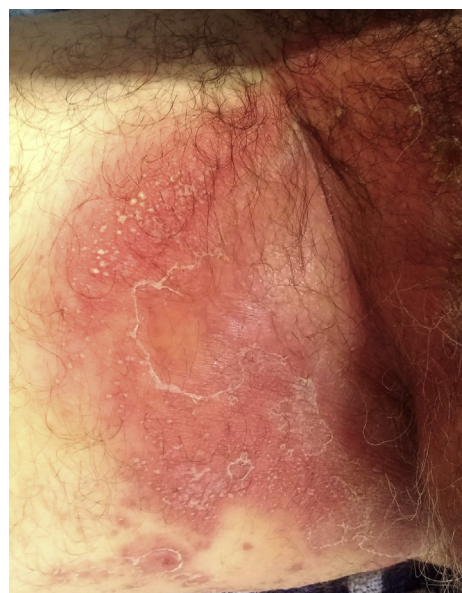
We present a case of new diagnosis of psoriasis in an adult man, with the unusual presentation of a pustular phenotype, precipitated by a perianal streptococcal infection. To our knowledge, this has not been previously reported in the literature.

## CASE REPORT

A 68-year-old man who was otherwise well, with no personal or family history of skin disease and not on any regular medications, developed a perianal/groin irritation after a digital prostate examination. His general practitioner diagnosed seborrheic dermatitis with secondary fungal infection and treated him empirically with topical betamethasone valerate cream, clotrimazole cream, and oral cephalexin. A swab demonstrated *Streptococcus pyogenes*.

The eruption progressed into widespread erythematous symmetric papules and plaques and he was referred to a dermatologist, who made an assessment of contact dermatitis with id reaction (potentially to the KY jelly [Reckitt Benckiser, Slough, UK] or latex gloves used in the examination) and secondary infection in the groin. Oral prednisolone was commenced at 50 mg, tapered to 25 mg, as was topical methylprednisolone aceponate. After this, the eruption became pustular and the patient was admitted under dermatology in a tertiary hospital.

On admission, the patient had a low-grade fever but was otherwise hemodynamically stable and systemically well with an increased C-reactive protein level of 43 mg/L (normal <8.0 mg/L) and mildly increased white blood cell count of  $12.8 \times 10^9/L$  (normal  $4-11 \times 10^9/L$ ) with associated neutrophilia at  $11.66 \times 10^9/L$  (normal  $1.8-7.5 \times 10^9/L$ ) and



**Fig 1.** Well-demarcated salmon-pink to erythematous plaque with overlying scale and pustules on the right side of the groin.

lymphopenia at  $0.57 \times 10^9/L$  (normal  $1.5-3.5 \times 10^9/L$ ). Calcium and albumin levels were normal. The monomorphic pustules on an erythematous base were initially confined to the groin and perianal region (Fig 1), but rapidly progressed to the legs and torso. Repeated perianal swabs demonstrated *S pyogenes*. Biopsy specimen of an abdominal plaque demonstrated multiple discrete mounds of parakeratosis with degenerate neutrophilia, loss of the granular layer, developing psoriasiform epidermal hyperplasia, and a subclinical macropustule (Fig 2). There were no eosinophils in the dermal infiltrate and no apoptosis. Periodic

From the Department of Dermatology, Royal Adelaide Hospital,<sup>a</sup> and Department of Anatomical Pathology, SA Pathology.<sup>b</sup>

Funding sources: None.

Conflicts of interest: None declared.

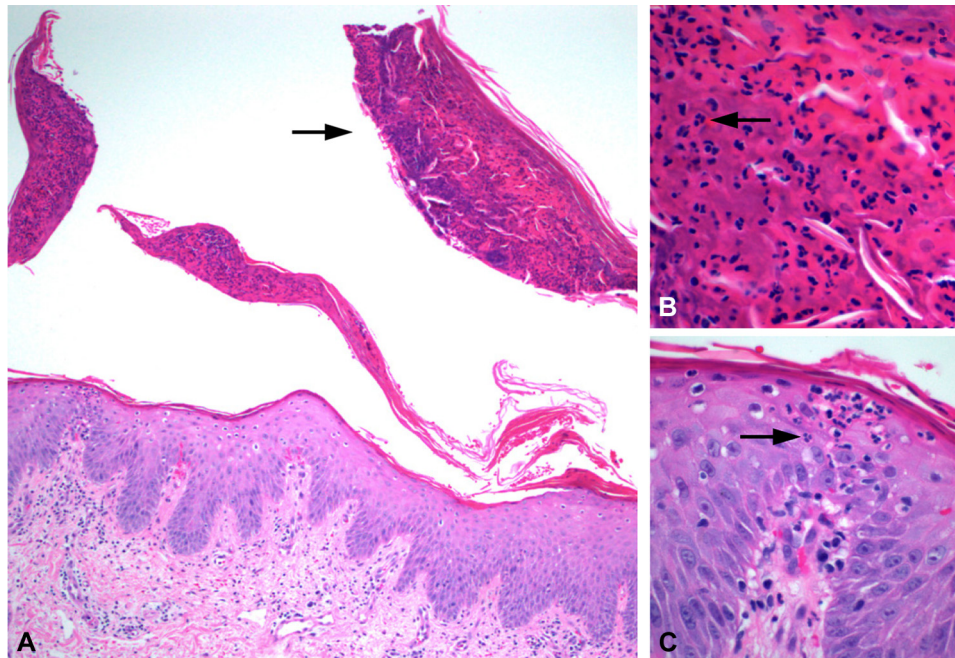
Correspondence to: Corinne Maiolo, MBBS, Department of Dermatology, Royal Adelaide Hospital, North Terrace, Adelaide, 5000 South Australia, Australia. E-mail: corinne.maiolo@sa.gov.au.

JAAD Case Reports 2016;2:281-3.

2352-5126

© 2016 by the American Academy of Dermatology, Inc. Published by Elsevier, Inc. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

<http://dx.doi.org/10.1016/j.jidcr.2016.05.010>



**Fig 2.** A, Pustular psoriasis: largely detached macropustule (arrow) and developing psoriasiform epidermal hyperplasia. B, Close-up view of macropustule with numerous neutrophils (arrow). C, Neutrophil spongiosis (arrow).

acid–Schiff–diastase and Gram stains were negative. These histologic features supported acute pustular psoriasis rather than a drug eruption, such as acute generalized exanthematous pustulosis.<sup>1</sup>

Cephalexin (day 3) and oral prednisolone were ceased on admission. The patient was treated with clindamycin (14 days), topical steroids, potassium permanganate soaks, clioquinol 0.5%/betamethasone valerate (to groin), and 20 mg acitretin. His eruption resolved over several weeks. Subsequent patch testing to the Australian Standard Series, KY jelly, and latex 1 month after cessation of prednisolone demonstrated no positive reactions. Acitretin was ceased after 4 months and at 9 months the patient reported no ongoing sequelae.

## DISCUSSION

Pustular psoriasis is an uncommon initial presentation of psoriasis in adults. Contact dermatitis has been implicated as a precipitant of pustular psoriasis in 2 case reports.<sup>2,3</sup> Negative patch test results after the patient had been off prednisolone confirmed that contact dermatitis was not the cause of this patient's eruption.

*S pyogenes* has a well-established association with both acute and chronic psoriasis, particularly guttate psoriasis. The prevailing current theory regarding this relationship is that psoriasis is an autoimmune disease triggered by the bacterial microbiota of the skin, including the presence of *Streptococcus*.<sup>4</sup> It has

been suggested that the streptococcal antigen sensitizes T cells to epitopes in skin keratin.<sup>5</sup> Perianal<sup>6</sup> and vulvar<sup>7</sup> streptococcal infection has been linked to the development of psoriasis in children.

Antibiotic treatment for *Streptococcus* has not been shown to be reliably effective in the treatment of established guttate or chronic plaque psoriasis<sup>8</sup> but may be beneficial in early infection in children with psoriasis.<sup>9</sup> Withdrawal of topical and systemic corticosteroids and cyclosporine has been shown to trigger pustular psoriasis in some cases,<sup>10</sup> and avoidance of potentially irritating topical preparations such as tar and dithranol when pustules are present is generally accepted.

This case demonstrates pustular psoriasis as the initial presentation of psoriasis in an adult after perianal *S pyogenes* infection. A search of PubMed and MEDLINE did not reveal any reports of pustular psoriasis as the initial presentation of psoriasis in an adult secondary to a cutaneous infection. This case highlights the need for the clinician to consider a nonpharyngeal streptococcal infection as a cause of a pustular psoriasiform eruption.

## REFERENCES

1. Kardaun SH, Kuiper H, Fidler V, et al. The histopathological spectrum of acute generalized exanthematous pustulosis (AGEP) and its differentiation from generalized pustular psoriasis. *J Cutan Pathol*. 2010;37:1220-1229.
2. Jo J, Jang HS, Ko HC, et al. Pustular psoriasis and the Koebner phenomenon caused by allergic contact dermatitis from zinc

- pyrithione-containing shampoo. *Contact Derm.* 2005;52(3):142-144.
3. Nielson NH, Menne T. Allergic contact dermatitis caused by zinc pyrithione associated pustular psoriasis. *Am J Contact Dermatit.* 1997;8(3):170-171.
  4. Fry L, Baker BS, Powels AV, et al. Psoriasis is not an autoimmune disease? *Exp Dermatol* 2015;24:241-244.
  5. Wu W, Debbaneh M, Moslehi H, et al. Tonsillectomy as a treatment for psoriasis: a review. *J Dermatolog Treat.* 2014;25(6):482-486.
  6. Patrizi A, Costa AM, Fiorillo L, et al. Perianal streptococcal dermatitis associated with guttate psoriasis and/or balanoposthitis: a study of five cases. *Pediatr Dermatol.* 1994;11(2):168-171.
  7. Fischer G, Rogers M. Vulvar disease in children: a clinical audit of 130 cases. *Pediatr Dermatol.* 2000;17(1):1-6.
  8. Dogan B, Karabudak O, Harmanyeri Y. Antistreptococcal treatment of guttate psoriasis: a controlled study. *Int J Dermatol.* 2008;47:950-952.
  9. Kim SK, Kanf HY, Kim YC, et al. Clinical comparison of psoriasis in Korean adults and children: correlation with serum anti-streptolysin O titers. *Arch Dermatol Res.* 2010;302:295-299.
  10. Robinson A, Van Voorhees AS, Hsu S, et al. Treatment of pustular psoriasis: from the Medical Board of the National Psoriasis Foundation. *J Am Acad Dermatol.* 2012;67:279-288.