

## CPD

## Localized, ovoid urticarial plaques with fine, nonfollicular pustules

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## Clinical findings

A 60-year-old woman presented with fever, chills, leucopenia and hypotension. Her medical history included recurrent *Klebsiella* sepsis secondary to chronic cholangitis in the setting of polycystic liver disease. She had recently been discharged from another hospital on 14 days of ceftriaxone after inpatient treatment with furosemide, enoxaparin, piperacillin/tazobactam and vancomycin. Upon admission, she reported a rash of 3 days' duration along the waistline with an associated burning sensation. Within 3–4 days of each past admission for sepsis, similar cutaneous eruptions occurred and resolved within 4 weeks of discharge. During each hospitalization, she received piperacillin/tazobactam and was discharged on ceftriaxone. Other medical history included polycystic kidney and liver disease, and idiopathic chronic pancytopenia. The inpatient team suspected varicella zoster infection and treated with valaciclovir 1000 mg three times daily with no improvement, so dermatology was consulted.

On physical examination, several annular to ovoid erythematous urticarial plaques stippled with fine, white, non-follicular pustules were noted on the patient's abdomen and waistline. The patient reported new lesions in this area several days after discharge from the outside hospital. A representative area was biopsied (Fig. 1).

Ceftriaxone was discontinued and the rash promptly resolved with clobetasol.

## Histopathological findings

Histopathological examination revealed an orthokeratotic stratum corneum with subcorneal neutrophils, a minimally spongiotic epidermis, and an underlying perivascular and interstitial infiltrate composed of lymphocytes and eosinophils (Fig. 2).

What is your diagnosis?

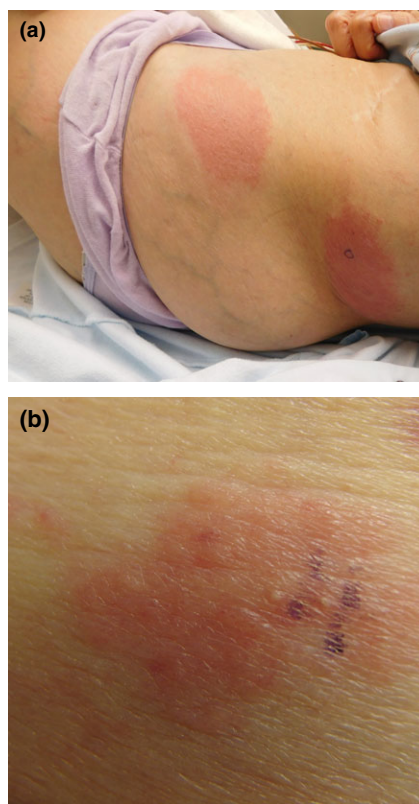


**Figure 1** (a) Sharply demarcated localized erythematous plaques; (b) nonfollicular pustules over an erythematous base.

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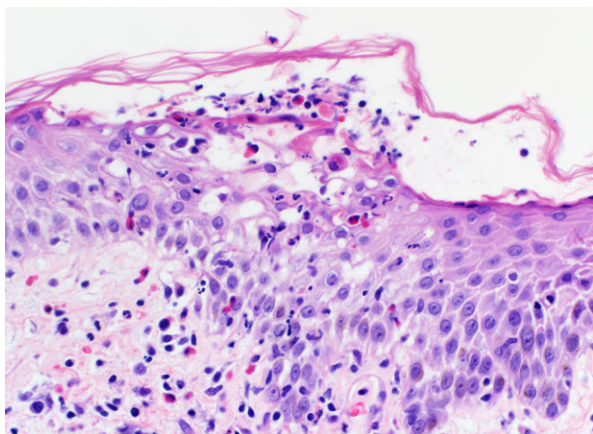


**Figure 2** Subcorneal spongiform pustule with abundant eosinophils (haematoxylin and eosin, original magnification  $\times 200$ ).

## Diagnosis

Acute localized exanthematous pustulosis (ALEP) induced by beta-lactam antibiotics.

## Discussion

ALEP was first described in 2005 as a clinically localized drug eruption with similar histopathological features to acute generalized exanthematous pustulosis (AGEP).<sup>1</sup> To date, only about 25 cases have been reported. Sterile pustular eruptions that spare mucosal surfaces, do not generalize, and manifest only occasionally with systemic symptoms of fever and leucocytosis typify ALEP.<sup>2–4</sup> Lesions commonly develop on the face, but involvement of the neck, trunk and inguinal areas has also been reported.<sup>3,4</sup> In our case, the rash was heralded by a burning sensation leading to a misdiagnosis of varicella zoster. Similar sensations have been reported in other cases of ALEP.<sup>1</sup> Of note, our patient's eruption was localized to the abdomen and waistline, which is exceptionally rare. Amoxicillin and other beta-lactam antibiotics are the main causative agents of ALEP, but acetaminophen, ibuprofen, docetaxel, sorafenib, finasteride and levofloxacin are also implicated.<sup>2,4</sup> Progression of the rash after discontinuing piperacillin/tazobactam suggested ceftriaxone was the offending drug.

Clinically, cases of ALEP may be mistaken for acne, allergic contact dermatitis, Darier disease, varicella zoster infection, fixed drug eruption, pustular psoriasis, IgA pemphigus and subcorneal pustular dermatosis.<sup>1,4,5</sup> Some consider ALEP to be an early, abortive form of AGEP and there is one reported case of an intermediate, patchy 'APEP' variant,

suggesting a spectrum of disease.<sup>6</sup> Others propose that ALEP is akin to a fixed drug eruption, given the tendency of certain drugs to cause more neutrophilic than lymphocytic infiltrates.<sup>2</sup> Reports of neutrophilic fixed drug eruptions lend support to this hypothesis and may represent an immunological response between that of ALEP and classic fixed drug eruption. As more cases are reported, the relationship of ALEP to other well-defined drug eruptions should become clearer.

## References

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## MCQs

### Learning objective

To gain up-to-date knowledge on the diagnosis of acute localized exanthematous pustulosis.

### Question 1

Which of the following findings have been reported in both acute localized exanthematous pustulosis (ALEP) and acute generalized exanthematous pustulosis (AGEP)?

- (a) Hypocalcaemia.
- (b) Fever.
- (c) Delayed generalization.
- (d) Involvement of mucous membranes.
- (e) Infected pustules.

## Question 2

Which of the following is the agent most often implicated in acute localized exanthematous pustulosis (ALEP)?

- (a) Ibuprofen.
- (b) Clozapine.
- (c) Amoxicillin.
- (d) Bleomycin.
- (e) Trimethoprim–sulfamethoxazole.

## Instructions for answering questions

This learning activity is freely available online at <http://www.wileyhealthlearning.com/ced>

Users are encouraged to

- Read the article in print or online, paying particular attention to the learning points and any author conflict of interest disclosures
- Reflect on the article
- Register or login online at <http://www.wileyhealthlearning.com/ced> and answer the CPD questions
- Complete the required evaluation component of the activity

Once the test is passed, you will receive a certificate and the learning activity can be added to your RCP CPD diary as a self-certified entry.

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