

Acute Generalized Exanthematous Pustulosis due to Amoxicillin use in a Dialysis Patient

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Abstract: We report a rare but severe case of a drug reaction known as Acute Generalized Exanthematous Pustulosis (AGEP) in a dialysis patient due to prophylactic Amoxicillin use prior to dental extraction. AGEP is a delayed hypersensitivity reaction (T cell mediated). His condition further deteriorated and he progressed to develop a severe form of AGEP with features more usually seen with Toxic Epidermal Necrolysis (TEN).

Key words: AGEP – Acute Generalised Exanthematous Pustulosis, SJS- Stevens Johnson Syndrome, and TEN- Toxic Epidermal Necrolysis.

Case:

An eighty-two-year-old man presented to the emergency department with vomiting, confusion, fever and hypotension. His past medical history includes: end stage kidney disease on haemodialysis, Hypertension, hypothyroidism and hypopituitarism due to non-secretory macro adenoma on steroid replacement. He recently has had a dental extraction and was given a dose of Amoxicillin two grams a day prior to the procedure. He did not have any preceding illness or skin condition and his dental extraction was uneventful.

A day after consuming Amoxicillin, he developed erythema over the face and the front of his trunk, associated with confusion and febrile illness (38.5-degree C). He was brought to hospital.

The initial examination revealed symmetrical pin head sized pustular eruption involving the face, arms, lips, thighs and the lateral back of the trunk. It was associated with the underlying erythema with flaccid blisters and superficial erosion. There were petechial signs over the trunk mainly in abdominal area. The nail beds showed subungal haemorrhages; however, no pitting or onycholysis was noted. There were no target lesions or macules seen. The Nikolisky sign was positive. There was no mucosal involvement. He developed

hypotension and required intensive care admission for management.

Picture 1



Picture 2



Positive Nikolisky sign

The blood investigations showed mild neutrophilia and moderately elevated C reactive protein. His biochemistry was unremarkable. The blood culture did not grow any organism. The swabs were taken from the blisters from both thighs were positive for neutrophils.

The punch biopsy revealed subcortical pustules composed of numerous neutrophils with occasional eosinophils. There was also significant papillary dermal oedema and spongiosis associated with a moderate superficial mixed dermal inflammatory infiltrate with included some neutrophils and eosinophils. These histological features were consistent with those seen in AGEP.

His clinical condition deteriorated over the following four days as he developed more purpuric rash over the trunk and the thighs. His palmar aspect of the hands became more ecchymotic. The skin of the back and arms showed signs of blisters and erosions with the signs of detachment of epidermis over up-to 40- 50 % body-area. Repeat skin biopsy was obtained, which again confirmed histological features of AGEP.

His clinical condition improved following one week in ICCU and he was transferred to the ward for ongoing conservative management from where, he was discharged home. His skin condition had resolved in two weeks with no residual scarring.

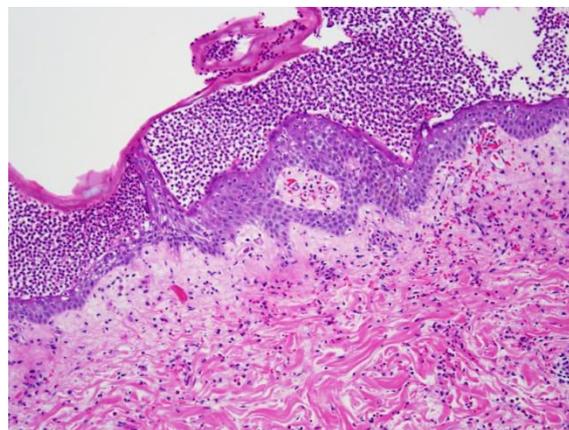
Discussion:

Acute generalized exanthematous pustulosis (AGEP) is potentially a benign and rare skin eruption that develops mostly due to drugs, but has also been reported to develop after viral infections, UV radiation, and heavy metal exposure such as mercury (1,2) . It is characterized by fever and a pustular eruption on the erythematous skin with an acute onset. The duration between the administration of the causative drug and the appearance of pustules is relatively short, usually one to three days (3). However, in a case series the median time between drug exposure and development of symptoms was extended up-to eleven days (3).

AGEP is diagnosed on the basis of the presence of clinical and pathological findings. The most important factor for the diagnosis of AGEP is the prompt improvement of characteristic areas of skin eruption following the cessation of the causative drug. However, in some cases, it may progress to the severe form of AGEP or associated with overlap TEN- like picture or even death. Therefore, its clinical course is not always benign and it can

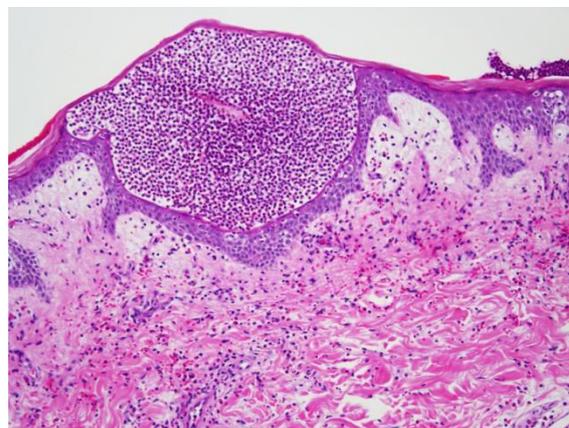
lead to fatal illness particularly if it is associated with TEN. Repeat biopsy would be useful under those conditions to delineate the entity.

Figure 1



The mortality rate is about 5% and the differential diagnosis includes Stevens- Johnson syndrome (SJS)/TEN. Contrary to SJS/TEN, in AGEP mucosae are usually not affected, which means that there are no blisters in the mouth or vagina.

Figure 2



The discontinuation of the offenders is essential. The conservative skin care is enough in most cases like applying moisturisers, topical corticosteroid, oral antihistamines and analgesics, and almost all cases resolve within two weeks of discontinuing the offending drug (3, 4).

In this case, we report the unusual manifestation of AGEP with clinical features more keeping with TEN in a dialysis patient. It is noteworthy that the literature on AGEP in the dialysis group patients is scant and, therefore, the incidence of high severity of this condition in this cohort has not been well described. A positive pseudo Nikolsky sign in the

AGEP patient is an uncommon finding; however, it has been described in the literature (5).

We propose that clinical manifestation of acute generalised exanthematous pustulosis in haemodialysis patients is often severe and it can be associated with haemodynamic instability. However, more observational studies are required to assess this hypothesis.

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