

## Fixed drug eruption resulting from amoxicillin use: a case report

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**Abstract:** Amoxicillin is commonly administered antibiotic to treat mainly the respiratory tract infections. Fixed drug eruption is a rarely seen reaction to penicillins. Commonly observed side effects of amoxicillin include nausea, vomiting, diarrhea, allergic skin reactions (a morbilliform rash). Uncommon side effects include, reversible leucopenia, antibiotics associated colitis (pseudomembranous and haemorrhagic colitis), black hairy tongue, superficial tooth discolouration. This is a rare case of fixed drug eruption due to amoxicillin at dorsum of hand and foot.

**Key words:** Amoxicillin, Side effect, Fixed drug eruption

### Introduction

Amoxicillin is a broad-spectrum beta-lactum antibiotic used for the treatment of wide range of bacterial infections. Amoxicillin acts by binding to penicillin-binding protein 1A (PBP-1A) located inside the bacterial cell wall so that cross linking is prevented. It is widely used to treat infections of middle ear (otitis media), tonsillitis, laryngitis, pharyngitis, bronchitis, pneumonia, urinary tract infections and skin infections. Recently, American Heart Association (AHA), American Dental Association (ADA) and American Academy of Orthopaedic Surgeons (AAOS) have recommended the use of amoxicillin in high risk cardiac patients (patients with underlying cardiac conditions associated with the highest risk of adverse outcome from infective endocarditis) with prosthetic joint replacements and those undergoing dental procedures<sup>1</sup>.

Commonly observed side effects of amoxicillin include nausea, vomiting, diarrhea, allergic skin reactions (a morbilliform rash). Uncommon side effects include, reversible leucopenia, antibiotics associated colitis (pseudomembranous and haemorrhagic colitis), black hairy tongue, superficial tooth discolouration. Reported hypersensitivity reactions stemming from amoxicillin consumption include, anaphylaxis, erythema multiforme, Stevens-Johnson syndrome,

toxic epidermolytic necrolysis, bullous exfoliative dermatitis, acute generalized exanthematous pustulosis and angioneurotic oedema<sup>2</sup>.

Fixed drug eruption (FDE) is characterized by an appearance of single or multiple, round or oval lesions, which may affect any part of the skin and/or mucous membrane. It is commonly seen in the extremities, genital areas, lips and perianal areas.<sup>3</sup> The lesions appear within 30 minutes to eight hours after the exposure of offending drug. Lesions are generally preceded and accompanied by itching and burning sensation. Initially, the lesions are dusky red macules with definitive edematous and erythematous outline. Later, it may be accompanied with bulla formation, desquamation and crusting. The accompanying systemic symptoms are mild in Fixed drug eruption (FDE).

### Case presentation

A 53-year old man was prescribed oral amoxicillin for sore throat. He received 500 mg of oral amoxicillin. He had no history of previous allergic manifestations nor did he report a family history of allergic reactions. The patient noticed a reddish erythematous macule with central bullae over the dorsum of his left hand as well as right foot 6 hours after ingestion of the first dose. The lesions were accompanied by itching. Hyper-

pigmented areas were seen to be residual after the lesions disappeared from the affected areas. Following this, a dermatological consultation was done and the patient was treated with topical steroids. Four years later, he was prescribed oral amoxicillin for sore throat. He took 500 mg of amoxicillin and developed reddish erythematous macules with a central bullae over the same sites (dorsum of left hand and right foot) as before, 6 hours after ingestion. (figure 1 and 2)

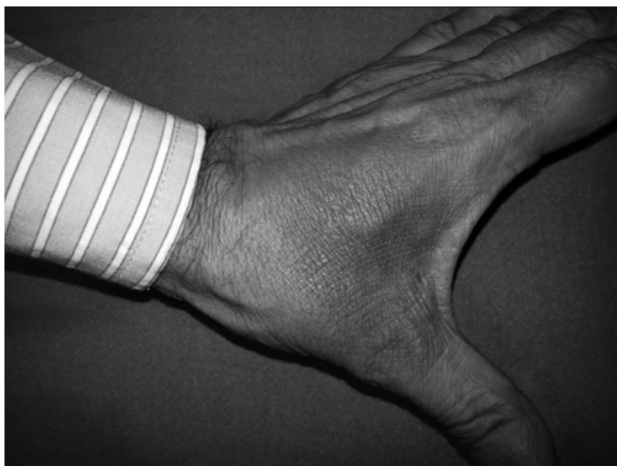


Figure 1. Reddish erythematous macules with a central bullae on the dorsum of hand



Figure 2. Reddish erythematous macules with a central bullae on the dorsum of foot

An oral challenge test with 500 grams of amoxicillin was conducted. One week later similar lesions were seen to develop at the same sites, 6 hours after ingestion. Patient was prescribed topical steroid to expedite the healing. We followed him up for 6 months and he hasn't complained of similar episodes up till now.

## Discussion

Fixed drug eruption occurs through CD8-mediated reaction, in which the offending drug may induce local reactivation of memory T cell lymphocytes localized in epidermal and dermal tissues.<sup>4</sup>

The characteristic finding of a fixed drug eruption is the recurrence of similar lesions at the same sites that heal with residual hyperpigmentation which may persist for months to years. We found 8 reports of Fixed drug eruption due to use of amoxicillin although the site and appearance of the skin lesions were different among the reported cases. We found the reported cases of fixed drug eruption due to amoxicillin on the sites like, thigh and palms, on contrary to our finding of fixed drug eruption at dorsum of hand and foot.<sup>5-7</sup> The lesions may be solitary or multiple. Rechallenge with the same drug is the most reliable method of identifying the causative drug of fixed drug eruption<sup>8</sup>. The diagnostic hallmark of fixed drug eruption is its recurrence at the previously affected sites and healing with residual hyperpigmentation. Commonly reported drugs causing fixed drug eruption are cotrimoxazole, tetracycline, metamizole, phenylbutazone, paracetamol, acetylsalicylic acid, mefenamic acid, metronidazole, tinidazole, chlormezanone, ampicillin, erythromycin, belladonna, griseofulvin, phenobarbitone, diclofenac sodium, indomethacin, ibuprofen, diflunisal, pyrantel pamoate, clindamycin, allopurinol, orphenadrine and albendazole.<sup>9</sup>

Fixed drug eruption is a rarely seen reaction to penicillins. Few cases of ampicillin or amoxicillin-induced fixed drug eruption have been reported. This is a rare case of fixed drug eruption due to amoxicillin at dorsum of hand and foot for the first time in the tertiary level hospital from Nepal.

## Conclusion

Amoxicillin is commonly administered antibiotic to treat mainly the respiratory tract infections. Fixed drug eruption owing to amoxicillin could be missed out or be neglected in clinical practice. Hence we suggest, fixed drug eruption as one of the possible side effects of amoxicillin.

**Conflict of interests:** None Declared

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