

Furosemide-induced eruption of haemorrhagic bullae on the fingers

Introduction

This article describes a man who developed severe haemorrhagic necrotizing blisters within 1 week of being started on regular furosemide. The lesions were confined to the fingers bilaterally and accompanied by severe swelling and loss of function. There were no associated features. All investigations were negative and an adverse drug reaction to furosemide was diagnosed. The drug was stopped and the lesions resolved fully. This form of cutaneous drug reaction is one of the rarest forms of reactions to furosemide especially when confined only to the fingers. One must be aware of such complications and be prepared to withdraw the diuretic to confirm the diagnosis and achieve resolution of the lesions.

Discussion

Furosemide is a commonly used loop diuretic in the management of pulmonary oedema and oedema associated with congestive heart failure, renal disease and hepatic cirrhosis. Loop diuretics are also gaining ground in the treatment of resistant hypertension (Leto et al, 2014).

Furosemide is not significantly metabolized before urinary excretion, and is 95% protein-bound. Loop diuretics work by inhibiting the sodium-potassium-dichloride pump in the thick ascending limb of the loop of Henle, resulting in the metabolic

dose-related and long-term side effects including hypokalaemia, hypomagnesaemia, dehydration, hypocalcaemia, metabolic alkalosis, hypochloraemia, hyponatraemia, hypotension (Davies and Wilson, 1975).

Several dermatological reactions have been reported (Moore, 2002), including

acute generalized exanthematic pustulosis or bullous pemphigoid (Noce et al, 2000), erythema multiforme, acquired epidermolysis bullosa, cutaneous necrotizing vasculitis, Sweet's syndrome and acute febrile neutrophilic dermatosis (Hendricks and Ader, 1977). Some dermatological

Figure 1. Dorsum of right hand showing the lesions at presentation.



Figure 2. Dorsum of left hand showing lesion on little finger at presentation.



CASE REPORT

A 79-year-old man was admitted for elective coronary artery bypass surgery and aortic valve replacement. Preoperatively he was taking aspirin, digoxin, perindopril, simvastatin, carvedilol and warfarin for chronic atrial fibrillation. Postoperative recovery was uneventful, with discharge after 6 days.

The patient presented 1 week later with lethargy, orthopnoea, chest discomfort, haemoglobin 8 g/dl and was transfused two units of red cell concentrate. After transfusion, the patient was still orthopnoeic. Echocardiography excluded pericardial effusion or regional wall motion abnormalities. Owing to lower limb pitting oedema and a 3 kg weight gain over 1 week, furosemide was started, the patient improved and was discharged.

The following week the patient re-presented with haemorrhagic bullous lesions on the second to fifth digits on the dorsum of the right hand (Figure 1) and on the dorsum of the left little finger (Figure 2). The lesions were painless, non-pruritic, and developed over the course of 3–4 days after which they began to ulcerate and

bleed on contact. The patient remained afebrile but was unable to grasp objects because of the swelling.

Anti-neutrophil cytoplasmic antibody, anti-nuclear antibody, extractable nuclear antibodies, erythrocyte sedimentation rate, C-reactive protein, complement C3 and C4, creatine kinase, cryoglobulins, hand and chest X-rays, and culture from fluid from lesions were requested following rheumatological review. All investigations were normal. Bactigras and Tubifast dressings were applied.

After initial treatment with ciprofloxacin and topical steroid by dermatologists, the lesions worsened over the next 3 days. The diagnosis of a vasculitic drug reaction to furosemide was considered, and an excision skin biopsy was performed, which revealed necrotic skin cells, eosinophil infiltration and thrombosed dermal vessels with negative immunofluorescence. This suggested a drug reaction. Furosemide was stopped and after 4 days the lesions dried up. Spironolactone was added to his treatment and soon after his hands were back to normal.

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