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CASE REPORT

Reversal of hand peripheral ischaemia due to extravasation of adrenaline during cardiopulmonary resuscitation



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Received 20 January 2013; accepted 10 March 2013

KEYWORDS

Extravasation injury;
Vasopressor;
Treatment algorithm

Summary A 63 year old woman sustained an extravasation of vasopressor during a successful in hospital cardiopulmonary resuscitation resulting in an acutely ischaemic hand. This was treated with multiple washouts of the hand due to incipient recurrence of the ischaemia. Extravasation of vasopressor is exceedingly rare and potentially devastating. This case highlights the specific problems associated with extravasation of vasopressor. We present an algorithm for treatment of these and identify the potential need to use specific antidotes for the vasoconstriction caused by adrenaline extravasation.

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Introduction

Extravasation injuries are common and occur in variety of clinical settings.¹ Whilst these iatrogenic injuries can often be treated conservatively, severe cases must be diagnosed and managed promptly to avoid long-term sequelae of extensive soft tissue destruction.² Extravasation injuries with vasopressors are extraordinarily rare and the treatment may be dictated by the specific extravasate in addition to the standard treatment of removing the source of the extravasation and flushing out of the extravasate.²

We report a case of a severe extravasation injury resulting in whole hand ischaemia following extravasation of adrenaline as part of cardiopulmonary resuscitation. The literature was reviewed in order to present a treatment algorithm for the specific issues associated with vasopressor extravasation injuries.

Case report

A 63 year old female had an in hospital cardiac arrest on the background of congestive cardiac failure secondary to severe aortic stenosis. Adrenaline was administered as part of the cardiopulmonary resuscitation via an intravenous cannula on the dorsum of her left hand. An unknown quantity extravasated into the soft tissue on the dorsum of her hand. Cardiopulmonary resuscitation was successful after 7 min

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Figure 1 Image of the hand at time of referral.

and she was transferred to the intensive care unit she was commenced on noradrenaline and dobutamine infusion for inotropic support.

Six hours post arrest, the dorsal aspect of her left hand was grossly oedematous, with a 5 × 5 cm area of epidermolysis surrounding the injection site. The hand was dusky and congested in appearance with delayed capillary refill at 6 s (Figure 1). Her right hand was of normal colour and had a capillary refill of 3 s.

Initially this was treated with the standard treatment of extravasation injuries²; the line was removed and radial puncture holes were made over the dorsum of the hand with an 18 gauge cannula allowing removal of the extravasated solution and normal saline was used to flush out the subcutaneous tissues. The hand returned to a pink colour with bright red blood on pinprick, capillary refill improved to 3 s within minutes (Figure 2).



Figure 2 Image of the hand after successful washout, demonstrating a returned perfusion in the hand. The area of dorsal skin necrosis is clearly visible. (For interpretation of the references to colour in this figure legend, the reader is referred to the web version of this article.)

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