Case reports

Acute anaphylaxis following midline catheterisation in a patient with cystic fibrosis

C S Haworth, R McL Niven, A J Moorcroft, A Phillips, M E Dodd, A K Webb

Abstract

A 16 year old male with cystic fibrosis experienced an acute life threatening anaphylactic reaction following the insertion of an Ohmeda Hydrocath™ midline peripheral venous catheter. The catheter was immediately withdrawn and treatment with intravenous adrenaline, hydrocortisone, chlorpheniramine, and colloid over a 24 hour period resulted in a gradual resolution of symptoms.

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Patients with cystic fibrosis often require frequent treatment with intravenous antibiotics and these are now commonly administered via midline peripheral venous catheters (longlines). Longlines have significant advantage over cannulas in terms of duration of patency. Unfortunately, however, life threatening complications can occur. We report three cases of anaphylaxis associated with Ohmeda Hydrocath™ peripheral venous catheters.

Case report

A 16 year old male with cystic fibrosis attended clinic to start a routine course of home intravenous antibiotic therapy. He was colonised with *Pseudomonas aeruginosa* when he was four years old and since the age of six and a half had been treated with intravenous antibiotics on a three monthly basis, usually with meropenem via a Vygon longline. Prior to treatment his forced expiratory volume in one second was 102% of predicted. He had a past medical history of portal hypertension and oesophageal varices.

An Ohmeda Hydrocath midline peripheral venous catheter was inserted for the two week course of intravenous antibiotics. Three months earlier the patient had used this type of longline for the first time without complication. No subcutaneous anaesthetic was used. Approximately one minute after insertion, before the line had been flushed, the patient complained of nausea and breathlessness. He then deteriorated rapidly, displaying the signs and symptoms typical of acute anaphylaxis. On examination he was distressed and had facial swelling. His blood pressure was unrecordable. Examination of the chest revealed new wide-

spread expiratory wheeze. Acute anaphylaxis was diagnosed and the longline was immediately withdrawn. Intravenous access was established with a cannula (Venflon™) and chlorpheniramine, hydrocortisone, adrenaline, and colloid were administered. His condition stabilised over a two hour period but an adrenaline infusion was required overnight to support his blood pressure. The following day he was discharged home.

Two further patients attending our clinic have experienced anaphylactic reactions following the insertion of an Ohmeda Hydrocath midline peripheral venous catheter. The reactions were characterised by facial swelling, hypotension, tachycardia, and bronchospasm. In one patient the reaction developed after the longline was flushed with heparinised saline and may therefore represent heparin induced histamine release. In both cases prompt removal of the longline and treatment with hydrocortisone, adrenaline, and chlorpheniramine resulted in complete resolution of symptoms. In each case the longlines were inserted using the same technique, but by a different physician.

In all three patients skin tests to water extracts from the line, guide wire, and gloves failed to produce a reaction. IgE specific antibodies to latex and ethylene oxide (the sterilising agent) were also normal.

Discussion

Systemic reactions to elastomeric hydrogel midline catheters have been reported.¹⁻³ To our knowledge this is the first published account of a life threatening reaction after the insertion of an Ohmeda Hydrocath polyurethane midline peripheral venous catheter.

Considering the large number of longlines used in the treatment of cystic fibrosis and other conditions, these events are fortunately rare. However, those responsible for inserting longlines should be aware of the possible complications and have access to emergency resuscitation facilities.

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Adult Cystic Fibrosis Unit, Wythenshawe Hospital, Southmoor Road, Manchester M20 9LT, UK

C S Haworth
R McL Niven
A J Moorcroft
A Phillips
M E Dodd
A K Webb

Correspondence to:
Dr A K Webb.

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