Case report

Accidental Epipen® injection into a digit – the value of a Google search

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Despite the lack of awareness by the clinicians consulted of the most suitable treatment for accidentally injected epinephrine, this patient was successfully treated due mainly to the ability of clinicians on-site to access the Internet in the A&E department. A broad search engine such as Google can be an invaluable tool in finding important clinical information rapidly.

Key words: Epinephrine injection; Internet

A 10-year-old boy presented to the accident and emergency (A&E) department. He had accidentally injected his left (dominant hand) with his mother's Epipen® (automatically injects 0.3 mg of 1 in 1000 adrenalin in a 0.3 ml volume) 3 h earlier. He complained of pain and paralysis of the left thumb. On examination, a puncture site was visible in the ventral aspect of the distal part of the thumb. The lateral aspect of the left thumb was pale and tender from the metocarpophalangeal joint to the tip. There was minimal distal movement of the thumb with approximately a 10° range of movement at the interphalangeal and metocarpophalangeal joints. Initial management was to place the left hand in a bowl of warm water to little effect. Re-examination of the thumb showed no change with a capillary refill time of 6 s.

In order to institute appropriate management, the general surgical team contacted two consultant vascular surgeons, the anaesthetic, paediatric and A&E registrars in the local institution, and registrars in vascular surgery and paediatrics at Great Ormond Street Hospital, London. None of the colleagues consulted had heard of such a case and a variety of treatment options were suggested: brachial plexus block, GTN paste applied to the thumb; and intra-arterial infusion of GTN.

Simultaneously, a literature search was carried out on PubMed using the following key words: 'pediatric', 'digital artery', 'epinephrine injection'. No citations were found. Following this, a search was performed using the Internet search engine Google. Within 0.1 s an article was identified entitled *Accidental injection of epinephrine by a child: a unique approach to treatment*.¹ A full-text version of the article was available on the website. It described a case of a 9-year-old girl who attended a Canadian emergency department with an identical clinical problem. She was initially treated with GTN paste (with no improvement) and then with an injection of 0.5 mg of phentolamine, 1.0 ml of normal saline and 1.0 ml of 2% lidocaine along the course of the digital arteries and into the puncture site. Within 5 min, colour, sensation, temperature and capillary refill returned to normal and at 6 weeks the patient was symptom-free. Following consultation with the vascular team, a decision was made to proceed with phentolamine injection. A total of 2 ml of 1% lignocaine was infiltrated followed by 0.5 mg phentolamine in 2 ml of normal saline along the lateral digital artery and into the puncture site. Within 5 min, the thumb was slightly swollen, pink, had full movement and capillary refill was less than 1 s. There remained some

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diminished sensation on the lateral aspect of the thumb. The patient was reviewed at 1 and 6 weeks when some reduced sensation remained.

Discussion

A further literature search has demonstrated several reports²⁻⁷ of accidental injection of adrenalin into digits from auto-injector devices, usually in adults. Various methods of treatment have been suggested including: warm water immersion, amyl nitrite inhalation, meta-carpal nerve block, application of topical nitroglycerin paste, as well as phentolamine injection. The consensus from the literature is that phentolamine injection is the most suitable treatment modality in adults. This case is only the second paediatric case to be reported. Despite the lack of awareness by the clinicians consulted of the most suitable treatment in this clinical scenario, this patient was successfully treated due mainly to the ability of clinicians on-site to access the Internet in the A&E department. Despite PubMed's inability to find the relevant literature,

the simplicity and thorough nature of the Google search came to the rescue. A broad search engine such as Google can be an invaluable tool in finding important clinical information rapidly.

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