SEVERE IDIOSYNCRATIC REACTION TO POLIDOCANOL

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INTRODUCTION

Reports of severe life threatening reactions from the use of polidocanol as a sclerosant in the treatment of varicose veins are rare\textsuperscript{1,2,4}. POL was developed in 1936 as a local and topical anaesthetic. It was found to be a good sclerosing agent and has been used for this purpose since its registration with the trade name Aethoxysklerol in 1967. It has been available on a trial basis in Australia since 1990. The Australian Polidocanol Study has shown a very low incidence of side effects and complications from its use\textsuperscript{4}.

CLINICAL RECORD

The patient is a thirty-year-old woman who presented for sclerotherapy. She gave a history of left greater saphenous vein stripping in 1988. She was diagnosed with, and had surgery for right ovarian vein incompetence causing pelvic congestion syndrome in 1999. Her past medical history was uneventful other than suffering mild asthma for which she used a salbutamol inhaler. She had no history of specific allergies or migraine.

The patient did not wish to undergo further surgery for her left ovarian vein incompetence or for her recurrent varicosities. She elected to have ultrasound-guided sclerotherapy (UGS) followed by a session of standard sclerotherapy one week later, per leg, over a one month period. The total dose of sclerosant used at these four sessions was

Session 1: Sodium tetradecyl sulphate 1.5% - 0.5 mls, POL 3% - 2mls
Session 2: POL 1.5% - 3mls
Session 3: POL 3% - 1.75mls
Session 4: POL 1.5% - 3mls and 0.5% - 12mls (equiv 3.5mls of 3%)

On the fourth occasion she complained of feeling some heaviness and constriction in her chest. She assumed it was her asthma, used her salbutamol inhaler and felt normal in ten to twenty minutes. She stated this had also occurred after the previous treatment, but to a lesser extent, and she did not report the sensation.

Six months later she returned for further superficial sclerotherapy to her right leg and a total of 8mls of 1% POL and 1ml of 0.5% POL was used (equivalent to 2.8mls of 3% POL). Towards the end of the session she complained of heaviness in her chest, radiating to her neck and of feeling warm and faint while supine. She became unconscious, convulsed and vomited. Her pulse was not palpable, blood pressure was not recordable, both pupils were dilated and she was centrally cyanosed. Spontaneous respiration recommenced after two to three minutes. She regained consciousness, though was distressed and continued to vomit profusely. She complained of an excruciating generalized headache and bilateral severe earache. Her pulse rate was 50/min and blood pressure was unrecordable. She was given adrenaline 500mcg subcutaneously. Her pulse increased to around 60/min and her blood pressure rose to 110 systolic. She had mild bilateral rhonchi with good air entry. After thirty minutes she was given metoclopramide (Maxolon) 10mg intravenously which did not stop the vomiting. She was subsequently given prochlorperazine (Stemetil) 12.5mg intravenously. The vomiting lasted over one hour. There was no rash or flushing.

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She was transferred to hospital for observation due to her initial chest tightness with radiation to the neck, uncontrolled vomiting, severe headache and earache, a relative bradycardia after adrenaline administration and mild bilateral rhonchi. At hospital she had a CT scan, ECG, chest X-ray, full blood examination, electrolytes, blood sugar level and liver function tests, all of which were normal. She was discharged alert and well ten hours later.

She presented to my practice the following day complaining of dysosmia. Many foods smelled putrid, especially coffee. Fabric softener, amongst others, had a bizarre smell. The dysosmia lasted around six weeks with coffee remaining the only substance she still cannot tolerate six months later.

**DISCUSSION**

Goldman\(^1\) cites a number of references in the literature relating to anaphylactic shock from administration of polidocanol\(^5\)\(^6\)\(^7\)\(^8\). He quotes Kreussler having reports of thirty-five reactions from 1987 to 1994. The majority were vasovagal or unproven allergic reactions. There were two non-fatal anaphylactoid reactions and one fatal anaphylactic reaction. There is also a report of three reactions in the Netherlands\(^9\), one suffering a cardiac arrest (non fatal), another showed signs of Acute Respiratory Distress Syndrome, and the third developed urticaria, dyspnoea, paraesthesiae, and chest pain with ECG changes of ischaemia. Other unusual reactions reported to Kreussler include “rare episodes of short convulsive coughing, acute pressure sensation in the chest, acute difficulty with breathing and one case of stabbing chest pain...”\(^1\)

The clinical difficulty with this reported case was determining whether the patient was suffering from an anaphylactic reaction, an undefined idiosyncratic reaction, a vaso-vagal episode, cardiac depressant effects from POL or a combination of these.

There was no rash, flushing, tachycardia or significant bronchospasm to indicate an anaphylactic reaction. A simple vaso-vagal reaction normally resolves within minutes with the patient being well soon afterwards and occurs rarely when a patient is supine. The patient claimed the chest tightness that radiated to her neck was not typical of her asthma. Cardiac monitoring during the procedure may have helped determine the origin of the chest tightness, though it is difficult to justify the necessity for monitoring patients undertaking sclerotherapy.

If a negative ionotropic effect contributed to her reaction it was at a dosage level well within the manufacturer’s recommended dosage guidelines. Although cardiac toxicity from POL is dose-dependent, perhaps some individuals are particularly sensitive to these effects thus accounting for serious reactions to dosages that would normally be considered safe. Whether POL can induce cardiac or cerebral arterial spasm is unknown. The persistent vomiting, otalgia, severe headache and persistent dysosmia could be consistent with a cerebral cause.

Of the ‘general transient reactions’ listed in Kreussler’s product information, this patient had most of them, and all at once.

**REFERENCES**