P-60
Parenteral exposure of chlorpyrifos pesticide – A case report

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Objective Self-poisoning with organophosphorus pesticide is common in Asian countries, but parenteral administration is uncommon. This is to report a rare case of deliberate chlorpyrifos exposure by injection

Case report Eighteen year-old girl who aspires to get into nursing profession, presented to the emergency department with swelling of the left upper limb. She reported self-injection of chlorpyrifos pesticide in 5 mL syringe to left antecubital fossa 19 hours previously. She attempted to deliver it intravenously, but it had probably gone subcutaneously. She developed pain and swelling of the left upper limb within first hour, but ignored the symptoms. She developed multiple episodes of vomiting 12 hours after the injection and progressive swelling of the upper limb. On examination, GCS 15, pulse rate 80/minute, BP 120/70 mmHg, respiratory rate 14/minute, temperature 99 degree F. Pupils were 3mm in size bilaterally, chest clear, abdomen soft and bowel sounds were normal. There was no fasciculations, salivation, lacrimation or diarrhoea. The left upper limb was swollen, warm, tender and erythematous. Left radial and brachial arteries were palpable. Atropine 2 mg IV stat dose was given. She was admitted and monitored for development of cholinergic features. Hemogram showed Hb 122 g/L, white blood count 14.5 $x10^9$/L, 86% polymorphs, platelet count 190 $x10^9$/L. Blood biochemistry was within normal limits. Doppler ultrasound of the upper limb showed normal arterial flow and no features of deep vein thrombosis. She was diagnosed with cellulitis of the left upper limb due to subcutaneous injection of chlorpyrifos. She was started on antibiotics. No further dose of atropine was required. She was managed conservatively for 7 days as an inpatient until the swelling subsided. Evaluation by a psychiatrist diagnosed an adjustment disorder with brief depressive reaction and emotionally unstable personality disorder trait. Cellulitis had subsided by the 14th day except for a small area of skin necrosis.

Conclusion Local cellulitis was the predominant feature rather than systemic cholinergic toxidrome in the patient with alleged history of subcutaneous injection of chlorpyrifos. Vomiting could either be due to systemic response to cellulitis or due to cholinergic feature of chlorpyrifos. Review of literature showed few cases of parenteral OP exposure (intramuscular or subcutaneous) which presented with predominantly local reaction with or without mild cholinergic features.