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Case Letters submission to Emergency Medicine Australasia

## **Overdose of Pong Pong (*cerbera odollam*) seeds bought over the internet.**

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### Case Report

A 19-year-old male presented to the emergency department (ED) following deliberate ingestion of the seeds from two 'Pong Pong' seed kernels, four hours earlier. These were purchased on e-Bay™ two weeks prior in the setting of worsening suicidal ideation.

Within thirty minutes of ingestion, he developed epigastric pain, nausea and vomiting leading him to alert his mother, who drove him to hospital. The patient reported ongoing severe nausea with dry retching, chest tightness and generalized paraesthesia. He was pale and diaphoretic with a pulse of 100-bpm (sinus rhythm) but normotensive (117/80mmHg). A 12-lead ECG demonstrated widespread 'reverse tick' ST depression in leads II, III aVF, V2-V6 with ST-elevation in aVR (Figure 1). Investigations revealed a positive serum digoxin (0.7 nmol/L), serum potassium (4.4 mmol/L, NR 3.5 – 5.2 mmol/L) with normal renal function. A venous blood gas demonstrated a compensated respiratory alkalosis and an elevated serum lactate (pH 7.42, pCO<sub>2</sub> 31 mmHg, HCO<sub>2</sub> 20 mmol/L, Lactate 3.0 mmol/L). His other investigations were normal.

Attempted decontamination with activated charcoal was unsuccessful due to ongoing dry retching. Two vials (80mg) of digoxin-Fab antibodies (DigiFab™) were empirically administered intravenously due to the presence of clinical signs of cardiac glycoside toxicity in addition to previous case-based literature reporting significant mortality. Whilst the 'reverse tick' ST depression improved, his symptoms remained unchanged. A further 80mg of digoxin-Fab was administered two-hours later with resolution of his nausea and vomiting. After admission to ICU for ongoing monitoring, a further 80mg digoxin-Fab was given three-hours later for recurrence of vomiting, sinus arrhythmia and bradycardia to 40bpm. Symptoms resolved over the ensuing 24 hours and his ECG changes after 72 hours. There were no ventricular dysrhythmias or hyperkalaemia during the admission and he was admitted for ongoing psychiatric care once he had recovered.

### Discussion

Pong pong (*cerbera odollam*) is a plant indigenous to India as well as South-east Asia, bearing the ominous moniker of 'The Suicide Tree' [1]. A common method of committing suicide in these areas, one study found it represented 50% of plant poisoning cases in Kerala with up to 50 deaths per year [2]. *Cerbera odollam* belongs to the family, *Apocynaceae*,

which also includes yellow oleander (*Thevetia peruviana*) and similarly contains cardiac glycosides- cerberin is the best characterized and felt to be the most cardiotoxic [3]. The toxin is most abundant in the seeds of the kernels [4].

Cerberin, like other cardiac glycosides, inhibits the sodium-potassium-adenosine-triphosphate exchanger in myocardial cells and can produce symptoms akin to acute digoxin poisoning; vomiting, hyperkalemia, bradycardia and ventricular dysrhythmias [1, 2, 5]. The serum digoxin assay may be detectable due to cross-reactivity of the glycosides with the assay antibodies. However, as with other plant-based glycosides, the concentration is not quantifiable and a negative result does not exclude exposure [5]. Clinical features and hyperkalemia should be used as markers of significant toxicity and to guide therapy [1].

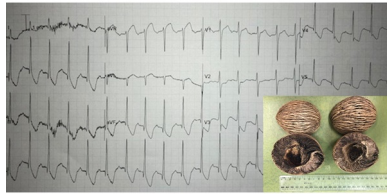
Digoxin-specific Fab antibodies have been recommended for treatment of toxicity, however, efficacy and dosing are unclear. Digoxin-specific Fab antibodies are antigenically specific for digoxin, but there may be binding to similar antigenic epitopes found on other cardiac glycosides. Consequently, larger doses (i.e. 10-20 vials) have been used previously in severe cases [5]. Clinical Toxicology advice should be sought to guide management and disposition. The mainstay of treatment includes supportive care for treatment of hyperkalemia and bradycardia using conventional therapies.

To our knowledge, this is the first documented case of Pong Pong toxicity in Australia and serves as a warning to clinicians regarding the relative ease of on-line access to potentially toxic substances. Restricting access to lethal methods for suicide has been one of the most successful interventions in reducing mortality from attempted suicide worldwide [6]. Current strategies to restrict online access to are inadequate and greater efforts should be made to prevent future harm.

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