

## Clinical Toxicology

# Paraquat poisoning: per vagina

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**Summary:** We describe a fatal case of paraquat poisoning as a result of per vaginal contact with the herbicide. Death occurred 18 days later from hepatic, renal and respiratory failure.

### Introduction

Paraquat is a highly effective herbicide, marketed in Malaysia in aqueous solution form with strengths of about 180 to 200 g/l. Death from its ingestion has been well reported in the literature but death from systemic toxicity after percutaneous absorption is less common.<sup>1</sup> Severe paraquat poisoning is associated with multiple organ (cardiac, respiratory, hepatic, renal, adrenal, pancreatic, neurological) failure. We report here a case of paraquat poisoning after intravaginal insertion of a tampon soaked in paraquat.

### Case report

A 28 year old Chinese prostitute was seen in the Casualty Department 4 days following alleged insertion per vagina of a tampon inadvertently soaked in paraquat. Ten minutes later she had felt a severe burning sensation and removed the tampon. Following this she complained of progressive nausea, vomiting, abdominal pain and decreased urine output. A laparoscopic diagnosis of chronic pelvic inflammatory disease had been made a few months previously. The patient was being treated with rotating courses of antibiotics. Although repeated high vaginal and cervical swabs showed no microbial pathogens, she complained of vaginal discharge and from time to time was in the habit of inserting Dettol-soaked tampons in the vagina. She denied any suicidal intent.

On examination, she was conscious but jaundiced. Her blood pressure was 110/70 mmHg. There were no cardiac abnormalities but in the lungs there were fine crepitations in both bases. There was mild hepatomegaly. Vaginal examination revealed a small

introital ulcer together with extensive ulceration and sloughing of the vaginal epithelium. The cervix was normal. There was no pelvic tenderness.

Liver function test showed normal proteins but elevated liver enzymes and increased conjugated bilirubin. Serum urea was elevated (17.1 mmol/l) and so was serum creatinine (943  $\mu$ mol/l). Arterial blood gases on admission showed a  $PO_2$  of 4.7 kPa and a  $PCO_2$  of 7.6 kPa while breathing air. Urine for paraquat was negative. Serum paraquat estimation was not available. The patient was treated with supportive measures but despite that her condition deteriorated. Her liver and renal function worsened and she developed adult respiratory distress syndrome. She died 2 weeks after admission. Post-mortem liver and lung biopsies showed changes compatible with paraquat poisoning: perivascular cholestasis and alveoli largely obliterated by fibroblastic proliferation were notable features.

### Discussion

This patient demonstrated typical features of moderate to severe paraquat poisoning.<sup>1</sup> About 10 cases of paraquat poisoning a year are seen at University Hospital, Kuala Lumpur, usually following oral ingestion of the herbicide. Percutaneous paraquat poisoning has, however, been previously reported: systemic toxicity is more likely to result if the paraquat solution is concentrated (as in this case), if exposure is prolonged or if the skin is traumatized.<sup>2</sup> To our knowledge, this is the first reported case of fatal poisoning via the vaginal epithelium, although a non-fatal case of systemic toxicity following perineal cleaning with paraquat in an adult male has been described.<sup>3</sup>

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Accepted: 1 June 1989

### Acknowledgement

We wish to acknowledge the help of Dr Puay Eng Tan for her assistance with the histopathology.

### References

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*Postgrad Med J* 1989 65: 835-836  
doi: 10.1136/pgmj.65.769.835

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