Introduction

Vomiting is common in patients with renal colic but concurrent oesophageal perforation is extremely rare. Boerhaave syndrome is spontaneous oesophageal perforation. Typically caused by vomiting, it remains rare and has a high mortality. This represents only the second reported case of the syndrome secondary to renal colic-induced vomiting.

Case presentation

A 30-year-old male presented with a one-day history of acute left flank pain, associated with vomiting and mild chest pain. The patient denied any significant past medical history. The patient smoked four cigarettes per today and consumed ten standard drinks of alcohol per week. He took no regular medications.

On examination the patient was well. Temperature was 38.3 °C. Other vital signs were normal. Chest and abdominal examination were unremarkable. Urine dipstick was positive for blood, and negative for leucocyte esterase or nitrates. White cell count was 21x10⁹/L, C-reactive protein (CRP) 16 mg/L and estimated glomerular filtration rate (eGFR) 53 mL/min/1.73 m². Other values were normal.
fluoroscopic guidance.

The following day, the patient’s symptoms and serum investigations were further improved. Gastrografin swallow revealed a normal oesophagus, without contrast leak into the mediastinum. Blood and urine cultures were confirmed as negative. The patient was discharged on prophylactic oral amoxicillin/ clavulanic acid 875/125 mg twice a day for five days.

Following chest X-ray to rule out new pneumothorax, four weeks later that patient received rigid cystoscopy, left ureteropyeloscopy and laser lithotripsy, with excellent stone clearance. His ureteric stent was exchanged, and the patient discharged the same day. Two weeks later, the patient underwent flexible cystoscopy and removal of his stent under local anaesthesia. The patient remains well at four months' follow up.

Discussion

In 1724, Herman Boerhaave first described oesophageal perforation secondary to raised intra-abdominal pressure (1). Classically, gastric contents spill into the mediastinum causing a chemical and later septic mediastinitis. Vomiting is the typical cause, but other aetiologies include blunt trauma, weightlifting, parturition, defecation and seizures (1,2). There is only a single prior report of Boerhaave syndrome secondary to renal colic-induced vomiting (3).

Patients typically report chest or upper abdominal pain and dysphagia. Examination reveals tachypnoea and low-grade fever then progressive cardiovascular compromise and septic shock if untreated. Pneum mediastinum may cause Hamman’s sign (crackling on auscultation accompanying each systole) or subcutaneous emphysema (2). Mackler’s triad of lower chest pain, vomiting and subcutaneous emphysema is seen only in a minority of patients (4).

Plain chest X-ray may reveal pleural effusion, pneumomediastinum, subcutaneous emphysema, hydropneumothorax and pneumothorax (1). Gastrografin (sodium amidotrizoate) swallow is favoured over barium because it does not contribute to inflammation (2). Cross-sectional imaging is extremely useful for patients where the diagnosis is in doubt. CT CAP is a sensitive study for demonstrating free mediastinal gas, associated sequelae and ruling out other causes of acute abdomen. Endoscopy is diagnostic and potentially therapeutic via placement of a nasogastric tube, endoluminal stent or metal clips, but mandates an expert endoscopist (4,5).

Boerhaave syndrome is commonly fatal if left untreated (2). Initial management consists of intravenous access, resuscitation and early involvement of critical care specialists. Attention must be paid to the treating the cause, such as renal colic in this case. As in this case, conservative management may be considered in a stable patient with no mediastinitis, and involves close monitoring, care, nil by mouth, broad-spectrum intravenous antibiotics and potentially antifungal agents.

Surgical intervention is required if patient is septic,
has gross mediastinal contamination or fails non-operative management. It includes oesophageal access via posterolateral thoracotomy or video-assisted thoracoscopic surgery and mediastinal washout (1,2,4). Oesophageal repair may be immediate primary, placement of oesophago-cutaneous T-tube or delayed oesophagectomy (1,4).

Vomiting is common in patients with renal colic but concurrent spontaneous oesophageal perforation is extremely rare. This patient was fortunate to have only small volume pneo-mediastinum, no spillage of gastric contents and early antibiotics.

Boerhaave syndrome is rare but potentially fatal and may complicate vomiting of any aetiology. This report represents only the second report of the syndrome secondary to renal colic-induced vomiting.

**Acknowledgments**

*Funding:* None.

**Footnote**

*Conflicts of Interest:* All authors have completed the ICMJE uniform disclosure form (available at http://dx.doi.org/10.21037/tau.2019.12.11). The authors have no conflicts of interest to declare.

*Ethical Statement:* The authors are accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved. Written consent was obtained for publication of this case report.

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Cite this article as: Barnett D, Kinnear N, Yao HH, Chee J. Renal colic causing Boerhaave syndrome. Transl Androl Urol 2020;9(2):828-830. doi: 10.21037/tau.2019.12.11