

# Endoscopic electrohydraulic lithotripsy treatment of sigmoid bowel obstruction caused by gallstones

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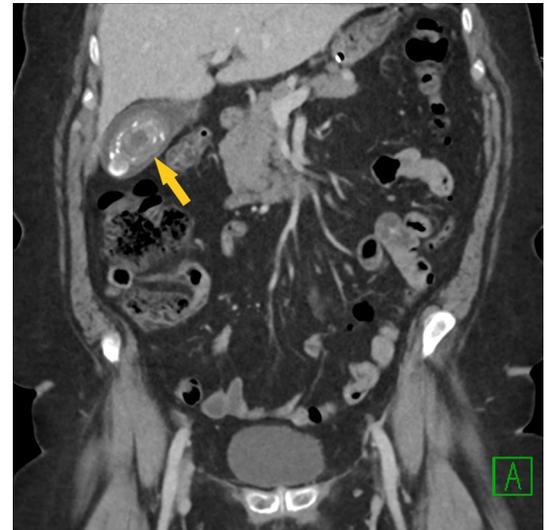
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## DESCRIPTION

A woman in her 70s previously diagnosed with gallstones was admitted to the hospital with myocardial infarction. There was ST-segment elevation on her ECG. She underwent acute percutaneous coronary intervention with the placement of a drug-eluting stent in her right coronary artery and subsequently lifelong anti-coagulant therapy. After admittance, she had increasing abdominal pain and had no bowel function for 4 days. A CT scan showed a gallbladder with a thickened wall and a fistula to the right colic flexure with incomplete large bowel obstruction due to a gallstone of approximately 5×4.5×3 cm in the sigmoid colon (**figure 1**). The gallstone was located in the gall bladder 1 year earlier (**figure 2**).

Bowel obstruction caused by gallstones is a rare complication to cholecystolithiasis. When occurring, the most common location of the obstruction is the terminal ileum (60%–85%). In only 4% of patients with gallstone ileus, the obstruction is in the sigmoid part of the colon.<sup>1</sup> The probability of this is increased in the presence of diverticular disease.<sup>2</sup>

We present a case where we used endoscopic electrohydraulic lithotripsy (EHL) as a first-line strategy. EHL is a minimally invasive technique to fragment stones using a high-voltage electric spark between two isolated electrodes through a liquid. EHL works by creating a hydraulic shock



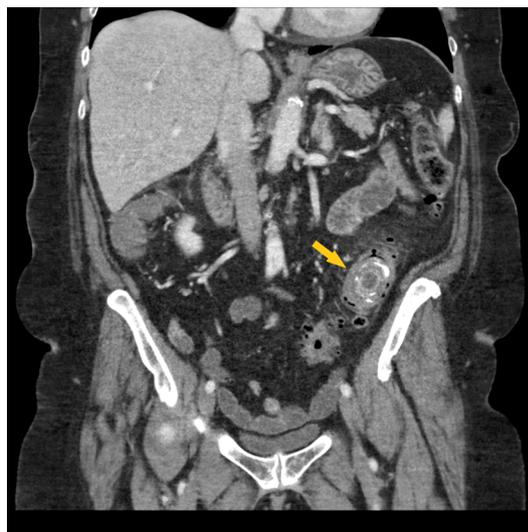
**Figure 2** CT scan of the abdominal from 1 year earlier, showing the gallstone in the gallbladder (arrow).

wave that can generate pressure, fragmenting solid objects in its path.<sup>3</sup>

Under mild sedation, the stone was broken down and removed during a 2-hour EHL session. During the subsequent inspection of the large bowel, multiple diverticula and a fibrotic sigmoid colon were found. See video.(**video 1**)

The patient had recovered and could be discharged after 2 days. At 3-month follow-up, the patient had normal bowel function and symptoms expectable in a patient with diverticulosis.

EHL is an effective treatment for gallstones in the bowel.<sup>2,4</sup> This case presents an effective and successful treatment of sigmoid gallstone ileus in a high-risk patient using EHL. In stable patients suffering from large bowel obstruction



**Figure 1** CT scan of the abdominal from admission, showing the gallstone in the sigmoid colon (arrow).



**Video 1** Endoscopic electrohydraulic lithotripsy was performed with fragmenting and removal of a large gallstone in the sigmoid colon



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caused by gallstones, transfer to hospitals where EHL can be performed should be considered.

### Learning points

- ▶ Bowel obstruction caused by gallstones is a rare condition, and even rarer when located in the sigmoid colon.
- ▶ In selected patients, endoscopic electrohydraulic lithotripsy (EHL) and endoscopic stone removal may be considered for relief of bowel obstruction secondary to gallstone in the sigmoid colon. EHL is especially relevant in patients with contraindications to surgery, like a newly placed drug-eluting stent requiring anticoagulant therapy.

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Case reports provide a valuable learning resource for the scientific community and can indicate areas of interest for future research. They should not be used in isolation to guide treatment choices or public health policy.

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