

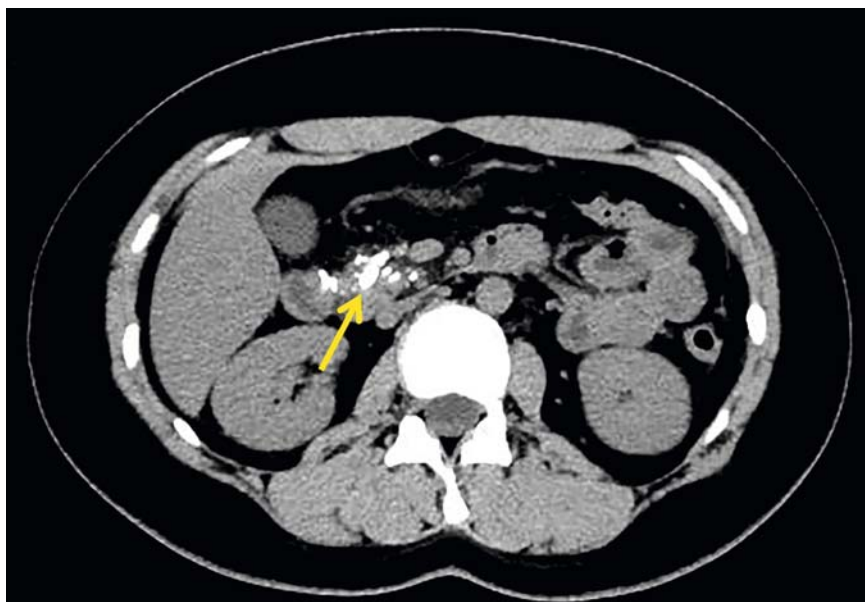
Successful removal of a trapped pancreatic plastic stent using extracorporeal shock wave lithotripsy

An 18-year-old woman was admitted to our department because of a 4-year history of intermittent upper abdominal pain. Previously she had been diagnosed with chronic pancreatitis and had undergone several sessions of extracorporeal shock wave lithotripsy (ESWL) and endoscopic retrograde cholangiopancreatography (ERCP). An 8.5-Fr plastic stent 5 cm in length (Boston Scientific, Marlborough, Massachusetts, USA) was placed in the pancreatic duct 11 months prior to admission at our department.

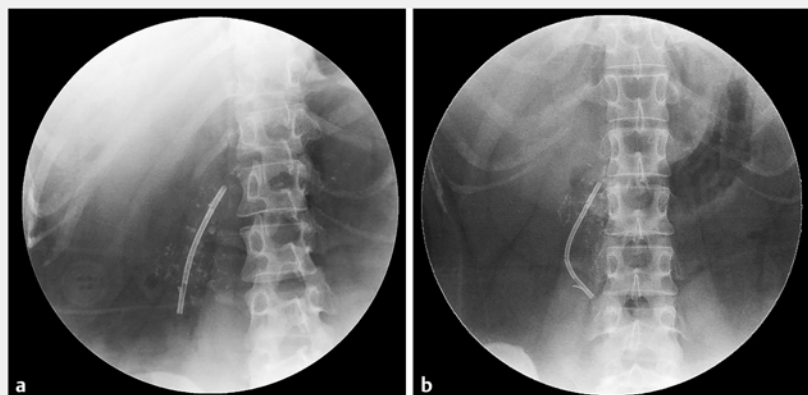
Computed tomography (CT) revealed the stent and multiple small pancreatic stones remaining in the main pancreatic duct (▶ **Fig. 1**). We planned to remove the stent and perform ERCP to clear the residual stones. However, after pulling out part of the stent, it became trapped by the stones attached to the main pancreatic duct and the stent itself (▶ **Fig. 2**, ▶ **Video 1**). We failed to remove the stent with either snare (Cook Medical, Bloomington, Indiana, USA) or foreign body forceps (Alton Medical Instruments, Shanghai, China) because of considerable resistance. We then tried to insert a guidewire beside the stent, but it could only proceed to the point at which the stent was trapped.

ESWL using a third-generation lithotripter (Compact Delta II; Dornier MedTech, Munich, Germany) was performed to pulverize the stones, targeting the area around the stent, especially the leading barb (▶ **Fig. 3**). A total of 5000 shocks were carried out at an intensity of 6 (16000 kV) on a scale of 1 to 6, with a frequency of 120 shocks/min.

We made a second attempt to retrieve the stent 5 hours after ESWL. It was removed successfully without any resistance (▶ **Fig. 4**, ▶ **Video 1**). The leading end of the pancreatic stent was covered with multiple small hard stones, which were extremely difficult to peel off (▶ **Fig. 5**).



▶ **Fig. 1** Computed tomographic scan revealing the stent (yellow arrow) and multiple small pancreatic stones remaining in the main pancreatic duct.



▶ **Fig. 2** X-ray images revealing the pancreatic stent surrounded by small radiopaque stones. **a** The shape and location of the stent before endoscopic retrograde cholangiopancreatography. **b** The stent was trapped and bent after a series of endoscopic procedures.

Nowadays, surgery is not the only choice to rescue trapped digestive endoscopic instruments [1–3]. Our case demonstrates that ESWL is an effective and safe method to release a pancreatic duct stent trapped due to pancreatic stones.

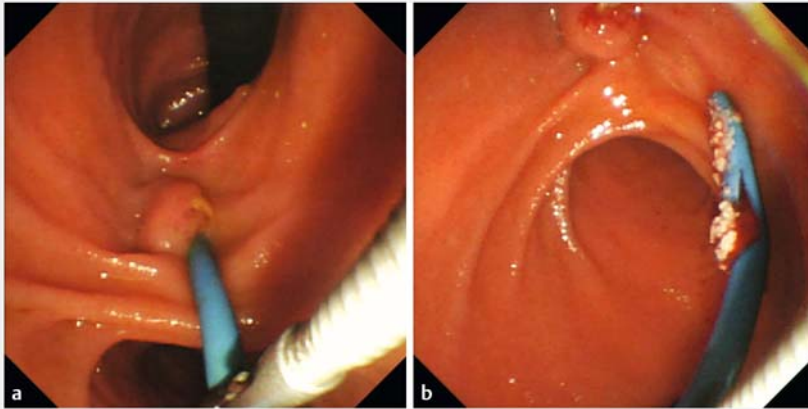
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Competing interests

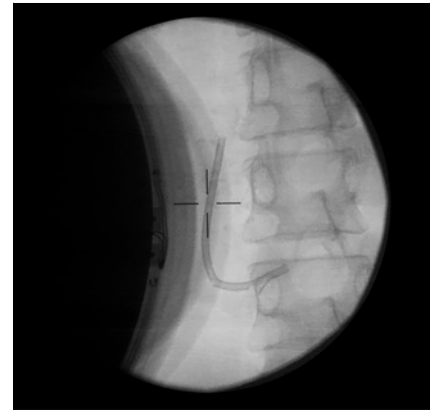
None



▶ **Video 1** The trapped pancreatic stent was removed successfully using extracorporeal shock wave lithotripsy.



▶ **Fig. 4** The procedure for removing the stent after extracorporeal shock wave lithotripsy. **a** The stent was retrieved using a foreign body forceps. **b** Successful removal of the pancreatic stent.



▶ **Fig. 3** Extracorporeal shock wave lithotripsy broke up the stones around the pancreatic stent, especially the leading barb.



▶ **Fig. 5** The pancreatic stent was covered with multiple small hard stones at the leading end.

References

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Bibliography

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