Endoscopic ultrasound-guided gastrojejunostomy with a Nagi stent for relief of jejunal loop obstruction following hepaticojejunostomy

A 27-year-old man with unresectable periampullary neoplasm underwent a Roux-en-Y hepaticojejunostomy with gastrojejunostomy 1 year previously. He presented with a 1-month history of progressive yellowish discoloration of his eyes, abdominal pain and distension, and intermittent high fever with chills and rigors. On admission his results showed a bilirubin of 9 mg/dL, alkaline phosphatase of 1467 IU/mL, and total white blood cell (WBC) count of 28700/mm³. A blood culture grew *Escherichia coli*. A contrast-enhanced computed tomography (CT) scan of the abdomen showed a grossly dilated loop of jejunum with distal obstruction, in communication with a patent hepaticojejunostomy anastomosis (● Fig. 1).

We planned to decompress the jejunal loop to relieve the cholangitis; however, the presence of a distal obstruction precluded enteroscope-assisted drainage. The distended jejunal loop was punctured with a 10-Fr cystotome (Cook Medical, Winston-Salem, North Carolina, USA) using endoscopic ultrasound (EUS) guidance (● Fig. 2a). The needle was removed and a 0.035-inch guidewire was placed through the inner catheter into the jejunal loop. The over-the-wire 10-Fr outer catheter of the cystotome with a diathermic ring was advanced into the jejunal loop using pure cut (Video 1). A 30-mm Niti-S Nagi stent (Taewoong Medical, Seoul, South Korea) was deployed over the wire (● Fig. 2b).

[Fig. 1] Contrast-enhanced computed tomography (CT) scan of the abdomen showing a dilated loop of jejunum with an intact hepaticojejunostomy anastomosis.

[Fig. 2a] Endoscopic ultrasound (EUS) images showing: a puncture of the dilated jejunal loop with a 10-Fr cystotome; b the Niti-S Nagi stent being deployed over the wire.

[Fig. 2b] Radiographic and endoscopic views of the dilated jejunal loop being punctured, a Nagi stent being positioned across the gastrojejunostomy, with a double-pigtail stent positioned through it to prevent migration.

[Video 1] Radiographic and endoscopic views of the dilated jejunal loop being punctured, a Nagi stent being positioned across the gastrojejunostomy, with a double-pigtail stent positioned through it to prevent migration.

[Fig. 3a] Endoscopic views showing: a the Niti-S Nagi stent in position allowing free flow of bile across the gastrojejunostomy; b a 7-Fr double-pigtail plastic stent (7 cm in length) that has been inserted through the stent to prevent migration.

[Fig. 3b] Endoscopic views showing: a the Niti-S Nagi stent in position allowing free flow of bile across the gastrojejunostomy; b a 7-Fr double-pigtail plastic stent (7 cm in length) that has been inserted through the stent to prevent migration.
was placed across the tract between the stomach and jejunal limb (Fig. 2b), and bile was seen to drain through the gastro-jejunal anastomosis (Fig. 3a). To prevent migration of the stent, a 7-Fr double-pig-tail plastic stent (7 cm in length) was placed across the Nagi stent (Fig. 3b).

After the procedure the patient’s fever subsided, his bilirubin decreased to 3.1 mg/dL, his total WBC count decreased to 15,200/mm³ and he was moved from the intensive care unit. He was discharged from hospital after 15 days.

Obstruction of the jejunal loop can occur as a late complication of hepaticojejunostomy due to either adhesions or tumor recurrence. EUS-guided gastrojejunostomy for afferent-loop syndrome using a Hot Axios stent was first described by Ikeuchi et al. in 2015 [1]. Mutignani et al. recently used the Nagi stent to gain access to the jejunal loop in a patient with an hepaticojejunostomy [2]. In our patient, we used the Nagi stent to decompress the obstructed jejunal loop. The procedure appears to be a safe alternative for the management of patients with hepaticojejunostomy presenting with cholangitis secondary to jejunal loop obstruction.

**Competing interests:** None

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**References**
