Direct Percutaneous Jejunostomy

- Direct percutaneous jejunostomy is indicated for enteral feeding when access to the jejunum is not possible via the stomach due to:
  - Prior gastric or gastroesophageal surgery
  - Gastric ulcer or malignancy
  - Gastric outlet obstruction
  - Inadequate window for gastric access
  - Repeated retraction of gastrojejunostomy tubes
- Direct percutaneous jejunostomy tubes may also be used for:
  - Lumen Drainage
  - Diagnostic and/or therapeutic biliary or intestinal interventions

Enteral feeding is indicated in a number of situations in which a patient is unable to consume sufficient nutrition normally or it is unsafe for them to do so. Such patients include those who are critically ill as well as those with chronic illness. If nutritional support is required for 30 days or less, nasogastric or nasojejunal tube feeding is generally used. For longer periods, direct enteral access is preferable because of the discomfort of nasogastric tubes and their associated risk of infection.

In most cases, interventional radiologists are able to access the jejunum percutaneously by placing a gastrojejunostomy (GJ) tube, in which a catheter is advanced into the jejunum via a gastric puncture. This approach is technically easier than direct access because the jejunum is not fixed in place. However, in some cases GJ tube placement cannot be achieved or is not practical because of prior or planned gastric surgery, obstruction of the gastric outlet, gastric malignancy, or other problems. In other cases, a GJ tube can spontaneously and repeatedly retract into the stomach despite correct placement. In these cases, a direct percutaneous jejunostomy may be preferred.

Jejunostomy tubes are recommended primarily for enteral feeding in patients with pancreatitis, gastroparesis, or gastroesophageal reflux disease associated with recurrent aspiration. In addition, jejunostomy tubes may be used for drainage or for access to allow biliary or intestinal interventions (Table 1).

### Table 1. Indications for Percutaneous Jejunostomy

<table>
<thead>
<tr>
<th>Indications</th>
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<tr>
<td>Enteral feeding in patients with:</td>
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<tr>
<td>- Prior gastric surgery</td>
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<td>- Gastric malignancy or ulcer</td>
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<td>- Gastric outlet obstruction</td>
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<tr>
<td>- Repeated retraction of GJ tube back into stomach</td>
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<tr>
<td>Palliative drainage for bowel or biliary obstruction</td>
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<td>Access for biliary or intestinal interventions</td>
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</table>

Percutaneous Jejunostomy Procedure

Direct percutaneous jejunostomy was first introduced in 1987 as an image-guided procedure using fluoroscopy. While it is technically challenging and its use has been limited, there are several published reports that demonstrate its safety and effectiveness, with a technical success rate of >90%. In recent years, demand for this procedure has been growing.

From experience at our institution, CT guidance is superior to fluoroscopy for performing direct percutaneous jejunostomy. The procedure is usually performed with local anesthesia and sedation but general anesthesia may be needed, depending on the patient’s clinical status. Prior to the procedure, patients must fast for several hours.
Figure 1. Jejunal tube placement in a 60-year-old man in need of enteral access for nutrition after esophageal and gastric surgery for cancer. (A) Needle placement into a jejunal loop under CT-guidance. (B) CT image shows wire that was advanced through the needle into the jejunum. (C) CT image shows feeding tube within the jejunum and the access port on the abdomen.

To begin the procedure, the bowel is dilated with air through a nasojejunal tube, and CT imaging is used to select a safe route into a proximal loop of the jejunum close to the anterior abdominal wall. A needle is then inserted through the abdominal wall into the jejunum under CT guidance (Figure 1A). A T-fastener is deployed by passing a wire through the needle into the jejunum, and its position is confirmed by CT imaging (Figure 1B). The bowel loop is pulled close to the abdominal wall, to which it is affixed with a suture. The tract is then serially dilated to allow the passage of the feeding tube (Figure 1C).

Following the procedure, patients may be admitted into the hospital for observation and care due to the risk of enteral content leakage. Feeding through the jejunostomy tube is initiated 24–48 hours after the procedure.

Contraindications
Certain anatomic and pathologic conditions may increase the risk of complications for this procedure. Absolute contraindications include uncontrolled coagulopathy and the absence of a safe access route. Relative contraindications include ascites.

Complications
Mild catheter-site discomfort is expected for several hours after tube placement. Complications may also include leakage and infection, which the patient and health care provider can routinely monitor during dressing changes. Pericatheter leakage has been reported at a rate of 0.19 per 100 catheter-days and inadvertent dislodgement of jejunostomy tubes at 0.17 per 100 catheter-days. Additionally, jejunostomy tubes may become occluded, in which case they can be replaced. They can also be replaced soon after accidental displacement, although the tracts may close up within hours.
Scheduling
Direct percutaneous jejunostomy is offered though the Interventional Radiology Clinic on the main campus of Massachusetts General Hospital. Appointments can be made through ROE (inside Partners network) or ROE Portal (outside Partners network) or by calling 617-726-8396.

Further Information
For further information on CT-guided direct percutaneous jejunostomy, please contact Ashraf Thabet, MD, Interventional Radiology, Department of Radiology, Massachusetts General Hospital, at 617-726-8396.

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References


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