Direct percutaneous endoscopic jejunostomy (D-PEJ) is not yet globally carried out because of two technical difficulties in the procedure. The first is difficulty in reaching the jejenum with good maneuverability by conventional endoscopy. The second involves the anatomical features of the jejenum. The jejunal lumen is much smaller than that of the stomach. In addition, the location of the jejunal loop is not stable in relation to the abdominal wall. To solve these problems, we developed a new technique for D-PEJ using double-balloon endoscopy (DBE) and magnetic anchors.

DBE was used for the access to the jejenum. Two magnetic anchors were prepared for the inside and outside anchors. The inside anchor was tied to the tip of the endoscope. Two anchors were used to fix the jejunal wall to the abdominal wall. Puncture was carried out from the abdominal wall beside the outside anchor without fluoroscopy. The jejunal wall was fixed to the abdominal wall by suturing the fixing thread. Percutaneous endoscopic gastrostomy (PEG) tube was placed through the overtube of DBE (Fig. 1).

To evaluate the feasibility and safety, placement of D-PEJ using DBE and magnetic anchors was carried out on eight pigs with survival. Procedure of the animal experiments was investigated and permitted by The Judging Committee of Experimental Animal Ethics of Jichi Medical University.

D-PEJ was successfully placed in all eight pigs. DBE and magnetic anchors were useful for stabilization of the maneuvers. PEG tube placement through the overtube was useful for preventing contamination of the tube and trauma of the intestinal wall. The mean procedure time was 89 min. There were no complications.

D-PEJ using DBE and magnetic anchors was feasible and safe in the porcine model.

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REFERENCES

SUPPORTING INFORMATION
Additional Supporting Information may be found in the online version of this article:

Video Clip S1. New technique for direct percutaneous endoscopic jejunostomy using double-balloon endoscopy and magnetic anchors in a porcine model.

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