



ELSEVIER

**Video Available Online**

Surgery for Obesity and Related Diseases ■ (2016) 00–00

SURGERY FOR OBESITY  
AND RELATED DISEASES

Video case report

# A safer and simpler technique of duodenal dissection and transection of the duodenal bulb for duodenal switch

Amit Surve, M.D., Hinali Zaveri, M.D., Daniel Cottam, M.D.\*

*Bariatric Medicine Institute, Salt Lake City, Utah*

Received February 17, 2016; accepted February 19, 2016

**keywords:** Duodenal transection; Dissection; Duodenal switch; Technique; Duodenal bulb; Duodenal stump leak

One common reason that many surgeons do not perform a duodenal switch (DS) is lack of experience with the dissection over the head of the pancreas [1]. We have developed a more tolerable and simpler technique for this dissection that allows any surgeon who has the skills to perform a gastric bypass to perform this dissection easily.

One of the most common fears with this dissection is injury to the portal triad [2]. This can result in serious injuries. Our technique offers the surgeon complete exposure so that injury to the portal triad is rare.

The second most common fear is a duodenal stump leak [3,4]. In the past, papers have reported duodenal leak rates after DS of 1.5% [3,5]. We believe this occurs when there are injuries to the supraduodenal artery and vein or the superior pancreaticoduodenal artery and vein, leading to ischemia [1,6]. These injuries can be avoided using our technique, preserving the blood supply to the duodenal stump.

Briefly, the technique involves taking down all the perforating gastroepiploic vessels from 4 cm proximal to the pylorus, thus raising the antrum and providing exposure of the pancreas and portal triad. When the dissection is carried down to the head of the pancreas, the superior pancreaticoduodenal artery branches are seen rising from the body of the pancreas onto the posterior duodenal surface. These vessels are always 2–4 cm beyond the pylorus and afford a safe and vascularized spot to perform the duodenal transection. This is also safely above the

gastroduodenal artery. This dissection should not take more than 10 minutes. After these simple steps, one can almost entirely avoid the 2 most dreaded complications associated with the DS. Since adopting this technique, we have had no leaks of the duodenal stump and no injuries to the portal triad in over 300 cases.

## Video description

The patient is placed in the supine position and general endotracheal anesthesia is administered. Four trocars are placed into the abdominal cavity under direct vision.

1. The technique starts with dissection of the gastrocolic omentum. The gastric branches of the gastroepiploic vessels are sealed from the point where the sleeve ends until just past the pylorus.
2. Dissect the loose attachment from antrum of the stomach to the head of the pancreas posteriorly. Carry this dissection down until the branches of the superior pancreaticoduodenal artery adherent to the posterior wall of the duodenum are visible. These vessels are almost always 2–4 cm beyond the pylorus. They almost never need to be taken down to perform dissection and fire the stapler distal to the pylorus.
3. This point is almost always superior to the gastroduodenal artery. Depending on the amount of adhesions and the mobility of the duodenum, more attachments of the gastrocolic ligament may need to be taken down.
4. Space is created between the first part of the duodenum and the gastrohepatic ligament, lateral to the superior

\*Correspondence: Daniel Cottam, M.D., Bariatric Medicine Institute, 1550-East 100 South, Salt Lake City, Utah 84102.

E-mail: [drdanielcottam@yahoo.com](mailto:drdanielcottam@yahoo.com)

<http://dx.doi.org/10.1016/j.soard.2016.02.022>

1550-7289/© 2016 American Society for Metabolic and Bariatric Surgery. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

56  
57  
58  
59  
60  
61  
62  
63  
64  
65  
66  
67  
68  
69  
70  
71  
72  
73  
74  
75  
76  
77  
78  
79  
80  
81  
82  
83  
84  
85  
86  
87  
88  
89  
90  
91

- pancreaticoduodenal artery branches on the right side of the patient.
5. A band passer is passed through the space created under the duodenal bulb, toward the liver, and through the gastrohepatic ligament, with care taken to preserve the blood vessels. This space will be used to pass the gastrointestinal anastomosis stapler. The band passer is used to enlarge this space.
  6. A linear stapler is placed across the first part of the duodenum.
  7. Always check before firing the stapler to make sure the stapler is distal to the pylorus. In many patients, the pylorus is not easy to feel and may require endoscopy.
  8. Transect the duodenal bulb.

### Disclosures

*The authors have no commercial associations that might be a conflict of interest in relation to this article.*

### Appendix

#### Supplementary material

Supplementary data associated with this article can be found in the online version at <http://dx.doi.org/10.1016/j.soard.2016.02.022>.

### References

- [1] Barnett WO, Tucker FH Jr. Management of the difficult duodenal stump. *Ann Surg* 1964;159(5):794–800.
- [2] McVay TR, Adler DG. Bile duct injuries: multidisciplinary evaluation and treatment. *Pract Gastroenterol* 2015;XXXIX(11):56–68.
- [3] Nelson L, Moon RC, Teixeira AF, Jawad MA. Duodenal stump leak following a duodenal switch: a case report. *Int J Surg Case Rep* 2015;14:30–2.
- [4] Tsuei BJ, Schwartz RW. Management of the difficult duodenum. *Curr Surg* 2004;61(2):166–71.
- [5] Biertho L, Lebel S, Marceau S, et al. Perioperative complications in a consecutive series of 1000 duodenal switches. *Surg Obes Relat Dis* 2013;9(1):63–8.
- [6] Marchesini JB. A safer and simpler technique for the duodenal switch. *Obes Surg* 2007;17(8):1136.

112  
113  
114  
115  
116  
117  
118  
119  
120  
121  
122  
123  
124  
125  
126  
127  
128  
129  
130  
131

UNCORRECTED PROOF