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REPLY

Sleeve gastrectomy: an ideal choice for T2DM

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As Ricardo Cohen pointed out (Sleeve gastrectomy: the ideal option for metabolic surgery? *Nat. Rev. Endocrinol.* 9, doi:10.1038/nrendo.2013.100-c1)[1] concerning my News and Views article (Sleeve gastrectomy—the ideal choice for weight-loss surgery. *Nat. Rev. Endocrinol.* doi:10.1038/nrendo.2013.100),[2] the title of my article was on sleeve gastrectomy being the ideal surgery for weight loss, and I did not discuss specifically the subject of diabetes surgery, an entirely different matter. Bariatric surgeons treats type 2 diabetes mellitus (T2DM) in only about one-third of their patients. The meta-analysis of Buchwald *et al.* on weight loss surgery and also on T2DM, points towards the best operation with resolution of T2DM being the one that gives the most weight loss, hence best results for resolution of T2DM are achieved with biliopancreatic diversions with or without duodenal switch.[3,4] Mingrone *et al.* had similarly demonstrated in a randomized study that biliopancreatic diversion gave a much better resolution of T2DM than gastric bypass (95% versus 75%).[5] Furthermore, the correspondence letter failed to mention that the duodenum bypassing intervention that had a superior effect on T2DM, was in fact a biliopancreatic diversion (BPD), not a gastric bypass. This study was not randomized, and conclusions on exclusion of duodenum not proven, as BPD has a gastrectomy and gastro-ileal anastomosis, which according to the 'hindgut theory' increases early stimulation of L cells (GLP-1 and PYY).[6] Sleeve gastrectomy, a better choice, is amenable in the future to a duodenal switch (after recurrence of T2DM), and not gastric bypass (a much more complicated proposition) as recurrences and failures of remission of T2DM after gastric bypass are quite well documented (>40%).[7]

The randomized prospective trial comparing sleeve gastrectomy and gastric bypass by Karamankos *et al.* has clearly demonstrated a superior weight loss, greater appetite suppression and greater decrease in ghrelin with sleeve gastrectomy.[8,9] The randomized trial by Lee *et al.* I also think is flawed, as the sleeve gastrectomy was not performed with a bougie, making a much larger sleeve, that is subjected to a much higher failure rate, and the 'mini' gastric bypass (non Roux-en-Y) studied is a nonstandard operation at the moment.[10] The trial by Schauer *et al.* did not demonstrate any significant differences between sleeve and bypass at 1 year.[11] In this trial, sleeves were performed over a gastroscope, which introduces air, creating a larger sleeve. Furthermore, the two groups were not comparable, as the gastric bypass group had substantially less female patients and less total body fat.[12]

Even if it is proven that gastric bypass has better outcomes than sleeve gastrectomy on T2DM (beyond 5 years), it would save a substantial number of patients (50–80%) from undergoing intestinal surgery, which has a plethora of serious complications, reserving failures to a conversion with a duodenal switch. It would also bring more patients to a cure worldwide overall, as sleeve is faster, easier and less complicated to perform than gastric bypass (at least double).

Finally, Cohen and colleagues have performed simple duodeno-jejunal bypass in patients with T2DM (as a duodenum bypassing intervention) and the results were inferior to those with sleeve gastrectomy alone.[13] However, when sleeve gastrectomy was added to duodeno-jejunal bypass, 96% of remission was noted, rendering the intervention metabolically active.[14] In conclusion, when one looks at a period of 10 years or more, the combination of sleeve gastrectomy first, followed by duodenal switch when indicated, will be superior for T2DM remission than a gastric bypass.

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Competing interests
The author declares associations with the following companies: Covidien, Ethicon, Gore, MID, Transenterix. See the article online for full details of the relationships.

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