

## **ASMBS POSITION STATEMENT ON SLEEVE GASTRECTOMY AS A BARIATRIC PROCEDURE**

The American Society for Metabolic and Bariatric Surgery Clinical Issues Committee  
Approved by the ASMBS Executive Council June 2007

***Preamble:** The following position statement is issued by the American Society for Metabolic and Bariatric Surgery in response to numerous inquiries made to the Society by patients, physicians, hospitals, health insurance payers, the media, and others, regarding the relatively new bariatric surgical procedure commonly known as the ‘sleeve (vertical) gastrectomy’. In this statement, available data regarding the safety, efficacy, and durability of the sleeve gastrectomy procedure as a treatment option for certain patients are summarized and suggestions made regarding its reasonable utilization based upon current knowledge, expert opinion, and published peer-reviewed scientific evidence available at this time. The intent of issuing such a statement is to provide objective information about the procedure and its possible role as an accepted alternative procedure in the treatment of obese patients.*

*This statement will be revised in the future as additional evidence becomes available.*

### **Position statement**

The bariatric procedure commonly called “sleeve (vertical) gastrectomy” is a form of unbanded gastroplasty involving subtotal gastric resection for creation of a long lesser curve-based gastric conduit (Figure 1). This procedure may be viewed as a modification of the widely-accepted bariatric procedure of vertical banded gastroplasty and is the gastric component of the more established malabsorptive procedure of biliopancreatic diversion (BPD) with duodenal switch. Sleeve gastrectomy is a resectional form of the Magenstrasse and Mill procedure, an unbanded long lesser curve gastroplasty without resection (Figure 2), after which durable 5 year weight loss has been reported in the morbidly obese at 5 years.<sup>1</sup> The mechanism of weight loss and resultant comorbidity improvement seen following sleeve gastrectomy may be related to gastric restriction or to neurohumoral changes observed following the procedure due to the gastric resection or some other unidentified factor(s).

There are currently 15 published reports in the peer-reviewed literature describing short-term outcomes in 775 patients after sleeve gastrectomy.<sup>2-16</sup> A single study provides data to 3 years after the procedure and no follow-up beyond 3 years has been reported.<sup>7</sup> The reports describe surgical treatment of patients with preoperative body mass index ranging from 35 to 69 kg/m<sup>2</sup> and excess weight loss ranging from 33% to 83%. Comorbidity resolution 12 to 24 months after sleeve gastrectomy has been reported in 345 patients,<sup>3-6</sup> demonstrating resolution rates of diabetes, hypertension, hyperlipidemia, and sleep apnea after sleeve gastrectomy are comparable to results of other restrictive procedures.

Similar to other forms of gastroplasty, perioperative risk for sleeve gastrectomy appears to be relatively low, even in high risk patients. Published complication rates range from

zero to 24% with an overall reported mortality rate of 0.39%. Only a single prospective randomized trial<sup>7</sup> is published which compares sleeve gastrectomy to a more widely accepted bariatric procedure. In that trial, sleeve gastrectomy was found to be at least as effective and durable as adjustable gastric banding at one and three years following surgery.

The sleeve gastrectomy procedure has been utilized as a first-stage bariatric procedure to reduce surgical risk in high-risk patients by induction of weight loss, to be then followed by subsequent surgical procedures to convert the sleeve gastrectomy to an intestinal bypass. Sleeve gastrectomy appears to be a technically easier and/or faster laparoscopic procedure than Roux-en Y gastric bypass or malabsorptive procedures in complex or high risk patients including the super-super-obese patient (BMI  $\geq$  60 kg/m<sup>2</sup>). From a technical standpoint, there appears to be no consensus regarding the optimal dilator size that should be utilized to create the lesser curve conduit with various reports recommending diameters between 32 and 60Fr. It has been suggested that dilation of the unbanded gastric sleeve conduit may provide a mechanism of long-term weight loss failure.

Long-term ( $\geq$  5 yr) weight loss and comorbidity resolution data for sleeve gastrectomy have not been reported at this time. Weight regain or a desire for further weight loss in a super-super-obese patient may require the procedure to be revised to a gastric bypass or BPD with duodenal switch. This is a known possibility and should be discussed with the patient as part of a detailed informed consent process.

### **Sleeve Gastrectomy Position Statement and Standard of Care**

This Position Statement is not intended to provide inflexible rules or requirements of practice and is not intended, nor should it be used, to state or establish a local, regional, or national legal standard of care. Ultimately, there are various appropriate treatment modalities for each patient, and the surgeon must use their judgment in selecting from among the different feasible treatment options.

The American Society for Metabolic and Bariatric Surgery cautions against the use of this position statement in litigation in which the clinical decisions of a physician are called into question. The ultimate judgment regarding appropriateness of any specific procedure or course of action must be made by the physician in light of all the circumstances presented. Thus, an approach that differs from the position statement, standing alone, does not necessarily imply that the approach was below the standard of care. To the contrary, a conscientious physician may responsibly adopt a course of action different from that set forth in the position statement when, in the reasonable judgment of the physician, such course of action is indicated by the condition of the patient, limitations on available resources or advances in knowledge or technology. All that should be expected is that the physician will follow a reasonable course of action based on current knowledge, available resources, and the needs of the patient, in order to deliver effective and safe medical care. The sole purpose of this position statement is to assist practitioners in achieving this objective.

### Sleeve Gastrectomy--Outcomes

Author	Patients (n)	Preoperative BMI	Follow-up	Postoperative BMI	%EWL	Complication Rate	Comments
Lee et al. (2007) <sup>2</sup>	216	49	2 yrs	27.7 (2 yrs)	59% (1 yr)	7.4%	32 Fr Bougie, 0 mortality
Cottam et al.(2006) <sup>3</sup>	126	65.3	1 yr	49	46%	13%	46-50 Fr Bougie, 0 mort
Hamoui et al.(2006) <sup>4</sup>	118	55	2 yrs	NR	47.3%	15.3%	97% Open, 1 mort
Moon Han et al. (2005) <sup>5</sup>	60	37.2	1 yr	28	83.3%	2.9%	48 Fr Bougie, 1 mort
Silecchia et al (2006) <sup>6</sup>	41	57.3	1 yr	40.8	NR	12.1%	48 Fr Bougie, 0 mort
Himpens et al. (2006) <sup>7</sup>	40	39	3 yrs	Median decrease 27.5	66%	5%	34 Fr Bougie; RCT v band, 0 mort
Baltasar et al. (2005) <sup>8</sup>	7	61-74	4 – 27 mo	NR	56.1%	6.7% (2/30)	32 Fr Bougie, 1 mort
	7	>40	4 – 16 mo	NR	33.6 – 90%		
	16	35 – 43	3 – 27 mo	NR	62.3%		
Roa et al. (2006) <sup>9</sup>	30	41.2	6 mo	32	52.8	13.3%	52 Fr Bougie
Langer et al (2006) <sup>10</sup>	23	48.5	18 mos	NR	57%	NR	48 Fr Bougie, one sleeve dilation at 1 yr
Melissas et al. (2007) <sup>11</sup>	23	47.2	1 yr	31.1	NR	21.7%	34 Fr Bougie 19 lap/4 open, 0 mort
Almogoy et al. (2004) <sup>12</sup>	21	57.5	18 mo	NR	61.4%	23.8%	0 mort
Milone et al. (2005) <sup>13</sup>	20	69	6 mo	53	35%	5%	60 Fr Bougie, 0 mort
Mognol et al. (2005) <sup>14</sup>	10	64	1 yr	41	51%	0%	32 Fr Bougie, 0 mort
Langer et al. (2005) <sup>15</sup>	10	48.3	6 mo	NR	61%	0%	Decr ghrelin comp to band, 0 mort
Regan et al. (2003) <sup>16</sup>	7	63	11 mo	50	33%	3 complications	60 Fr Bougie, 0 mort
<b>SUMMARY: 15 studies</b>	775	35 -69	6 mo – 3 yr	27.7 - 53	33 – 83%	0 – 24%	3 perioperative mortalities (3/775) 0.39%

### Comorbidity Resolution after Sleeve Gastrectomy

Author	Patients (n)	Follow-up	T2DM	HTN	Hyper-lipidemia	Sleep Apnea	DJD/ joint pain	GERD	Peripheral Edema	Depression
Cottam et al. (2006) <sup>3</sup>	126	1 yrs	81% R 11% I	78% R 7% I	73% R 5% I	80% R 7% I	85% R 6% I	70% R 8% I	91% R 3% I	67% R 9% I
Hamoui et al.(2005) <sup>4</sup>	118	2 yrs	47% R 22% I	15% R 16% I	--	--	--	--	--	--
Moon Han et al. (2005) <sup>5</sup>	60	1 yr	100% R	93% R 7% I	45% R 30% I	100% R	76% R 24% I	80% R 20% I	--	--
Silecchia et al (2006) <sup>6</sup>	41	18 mo	79.6% R 15.4% I	62.5% R 25% I	--	56.2% R 31.2% I	--	--	--	--

T2DM, Type 2 diabetes mellitus; HTN, hypertension; DJD, degenerative joint disease; GERD, gastroesophageal reflux; R, Resolved; I, Improved.

## References

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17. ASBS Code of Ethics

Figure 1. Sleeve Gastrectomy

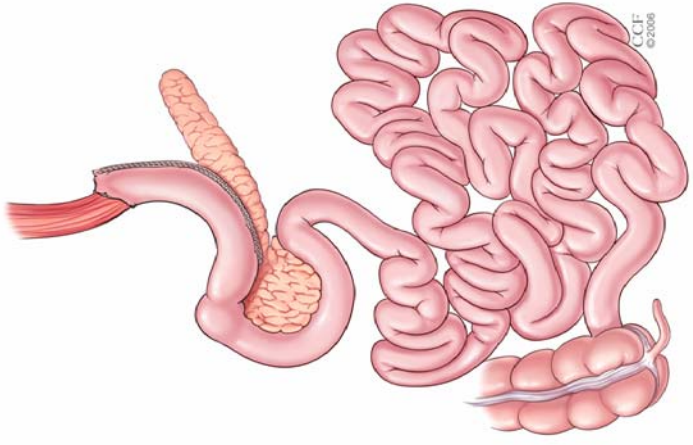
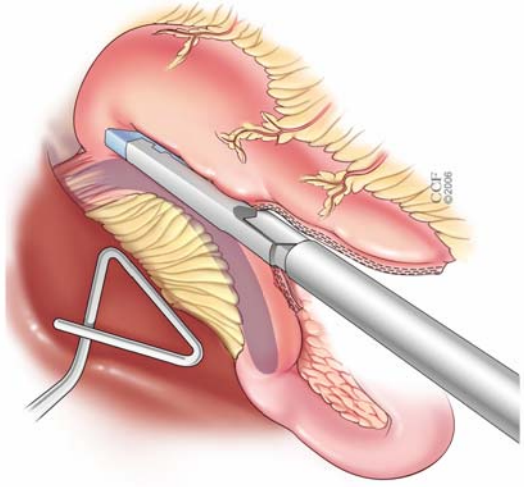


Figure 2. Magenstrasse and Mill

