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Indications for Single Port Laparoscopic Bariatric Surgery

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What do we know about “SILS”

- ▶ We all know that laparoscopy is the gold standard for all the bariatric procedures currently.
- ▶ With the introduction of new technologies surgeons modified the conventional laporoscopic surgery to single incision multiple trocar surgery.
- ▶ Technological innovations in the field of laporoscopic surgery lead our way to special single ports basically modified from gel-ports which has been used in hand assisted laporoscopic surgery.
- ▶ The most important question is that: How should we select patients for SILS surgery in bariatric field and do we need to use special instruments for this procedure?



Advantages of SILS in Bariatric Operations:

- ▶ Less postoperative pain and decreased use of postoperative analgesics.
- ▶ Better cosmesis
- ▶ Shorter Hospital Stay
- ▶ Less trocar site infection
- ▶ Less incidence of trocar hernias



Disadvantages of SILS Bariatric Surgery

- ▶ Loss of triangulation and exposure
- ▶ Need for articulating, flexible devices and scope
- ▶ Liver retraction problem
- ▶ Need of XL instruments for superobese patients and patients with central obesity.
- ▶ Patient selection and consent
- ▶ Lack of government insurance payments in some countries.
- ▶ Needs more surgical skills and experience
- ▶ Longer operative time



Patient Selection Criteria for SILS in Bariatric procedures:

- ▶ Patients with BMI 35-45
- ▶ Patients desiring better cosmetic results.
- ▶ Patients without significant scarring of the abdomen or dislocation of the belly button.
- ▶ Adolescent morbid obese patients???
- ▶ Patients who did not have multiple laparotomies.
- ▶ Patients who are eligible for bariatric surgery as described by NIH.



Patient demographics in Literature

Author	Year published	Mean BMI	Number of patients	Procedure choice
Huang et al.	2011/Obes. Surg.	40.1	40 (32F/8M)	Multiple(RYGB, SG,AGB)
Huang et al.	2010/Obes. Surg.	43.6	50(36F/14M) (25-25)	Comparison (SITU-LRYGP)
Tacchino et al.	2010/Obes.Surg	43.5	16F	RYGB(double and single loop)
Saber et al.	2009/Surg. Lap. End. Techniques	52.8	6(2F/4M)	SILS Sleeve Gastrectomy
Saber et al.	2009/ Obes. Surg.	38.9	8(7F/1M)	SILS Gastric Banding



Reported Series of SILS Bariatric Surgery in Current Literature

Table 1
Case series of single-incision laparoscopic surgery bariatric surgery reported in the literature

Procedures	Author	Case	Route	BMI (mean)	Surgical time (mean)	Conversion /adding trocar	Complication
Gastric Band	Teixeira <i>et al.</i>	22	Transumbilical / multiple trocars	42	84	1 (4.4%)	0
	Huang <i>et al.</i>	3	Transumbilical / multiple trocars	38.1	62	0	0
	Saber <i>et al.</i>	8	Transumbilical / multiple trocars	38.9	105	1 (12.5)	0
	Keidar <i>et al.</i>	10	Transabdominal / multiple trocars	40.9	60	10(100%) Nathanson liver retractor	0
	Tacchino <i>et al.</i>	3	Transumbilical / single port	40.6	101	0	0
Total/Mean		46		40.87	82.1	12/46 (46.15%)	0
Sleeve gastrectomy	Saber <i>et al.</i>	7	Transumbilical / multiple trocars	49.3	143	1 (14.3%)	0
	Huang <i>et al.</i>	6	Transumbilical / multiple trocars	38.9	65.3	0	0
	Saber <i>et al.</i>	6	Transumbilical and Transabdominal / single port	52.8	123	3/6 (50%)	0
	Gentileschi <i>et al.</i>	8	Transumbilical /single port	56.2	128	0	1/8 (12.5%) Wound infection
Total/Mean		27		49.81	116.8	4/27 (14.81%)	0
Gastric bypass	Huang <i>et al.</i>	25	Transabdominal / multiple trocars	41.98	99.8	0	0
	Tacchino <i>et al.</i>	16	Transumbilical / single port	43.5	<120	0	0
Total/Mean		41		42.57	107.6	0	0

Preliminary Surgical Results of Single-Incision Transumbilical Laparoscopic Bariatric Surgery

Chih-Kun Huang • Jui-Chi Tsai • Chi-Hsien Lo •
Jer-Yiing Houng • Yaw-Sen Chen • Shu-Ching Chi •
Po-Huang Lee

Table 2 Operative results of SITU laparoscopic bariatric surgery

Quartile	LRYGB (<i>n</i> =32)	LAGBP (<i>n</i> =2)	LSG (<i>n</i> =6)
Number of LST used	35	3	7
Placement time for LST (mean)	5 min 29 s ± 2 min 35 s	5 min 9 s ± 1 min 10 s	4 min 3 s ± 1 min 4 s
Duration of surgery in minutes, mean (range)	101.19 (81–144)	53.50 (44–63)	65.33 (37–96)
Length of postoperative stay in days, mean (range)	1.15 (1–3)	2 (1–3)	1 (1)
Complications: wound seroma	1	0	1
Wound satisfaction score ^a , mean (range)	4.56 (4–5)	5 (5)	4.67 (4–5)

Five patients underwent concomitant cholecystectomy and bariatric surgery

LRYGB laparoscopic Roux-en-Y gastric bypass, *LAGBP* laparoscopic adjustable gastric band placement, *LSG* laparoscopic sleeve gastrectomy

^a Wound satisfaction score: very unsatisfied=1, unsatisfied=2, acceptable=3, satisfied=4, very satisfied=5

Do we need special instruments?

- ▶ SILS bariatric surgery can easily be done with the conventional laparoscopic devices used in bariatric surgery. Though special instruments provides better exposure, ergonomics and shortens operative time.
- ▶ Eventually a fiberoptic or an anchoring scope will be usefull for better exposure and to prevent the clashing of the instruments with the scope.
- ▶ All we need to do is to find a better retraction system for the massive liver of the obese patients.
- ▶ There are some different retraction techniques published in the literature though none of them provides easy to use, safe and ergonomic universal solutions.



Liver Retraction Techniques

- ▶ Huang et al. described the liver suspension tape for the retraction of the left lobe of the liver in single port gastric bypass surgery.



Veress Needle: A Simple Liver Retraction Technique for Lap Band Positioning in (Single Incision Laparoscopic Technique) SILS

Segato Gianni • Maurizio De Luca • Banzato Oscar •
Ceoloni Andrea • Busetto Luca • Ashton David •
Favretti Franco

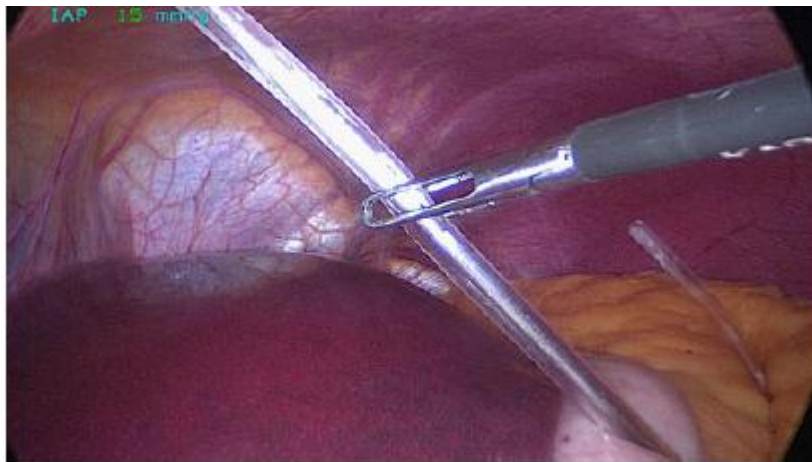


Fig. 2 Covered Veress needle by the tube



Fig. 3 Retraction of the left lobe of the liver by the covered Veress

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- ▶ Tacchino *et al.* used a transfixation suture, applied on the right crus and suspended outside as a liver retractor suture.

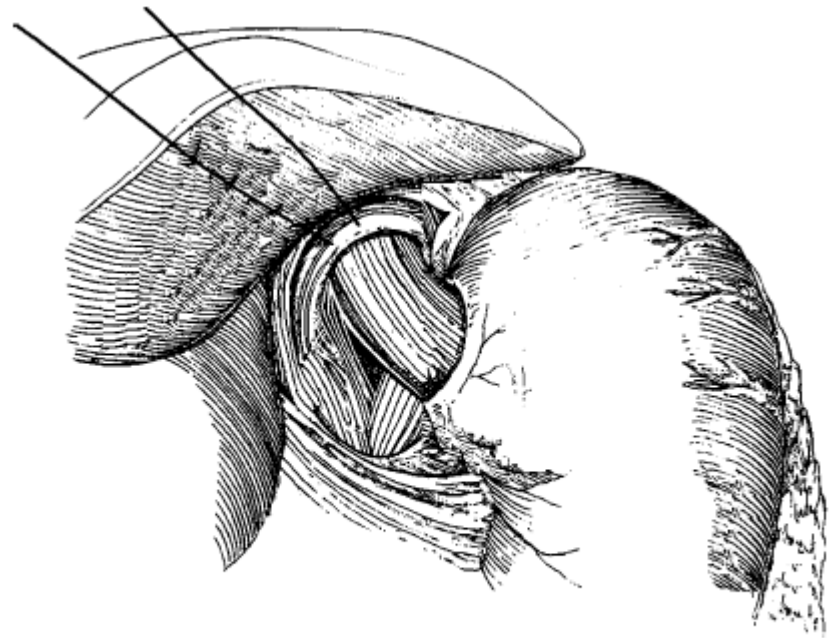
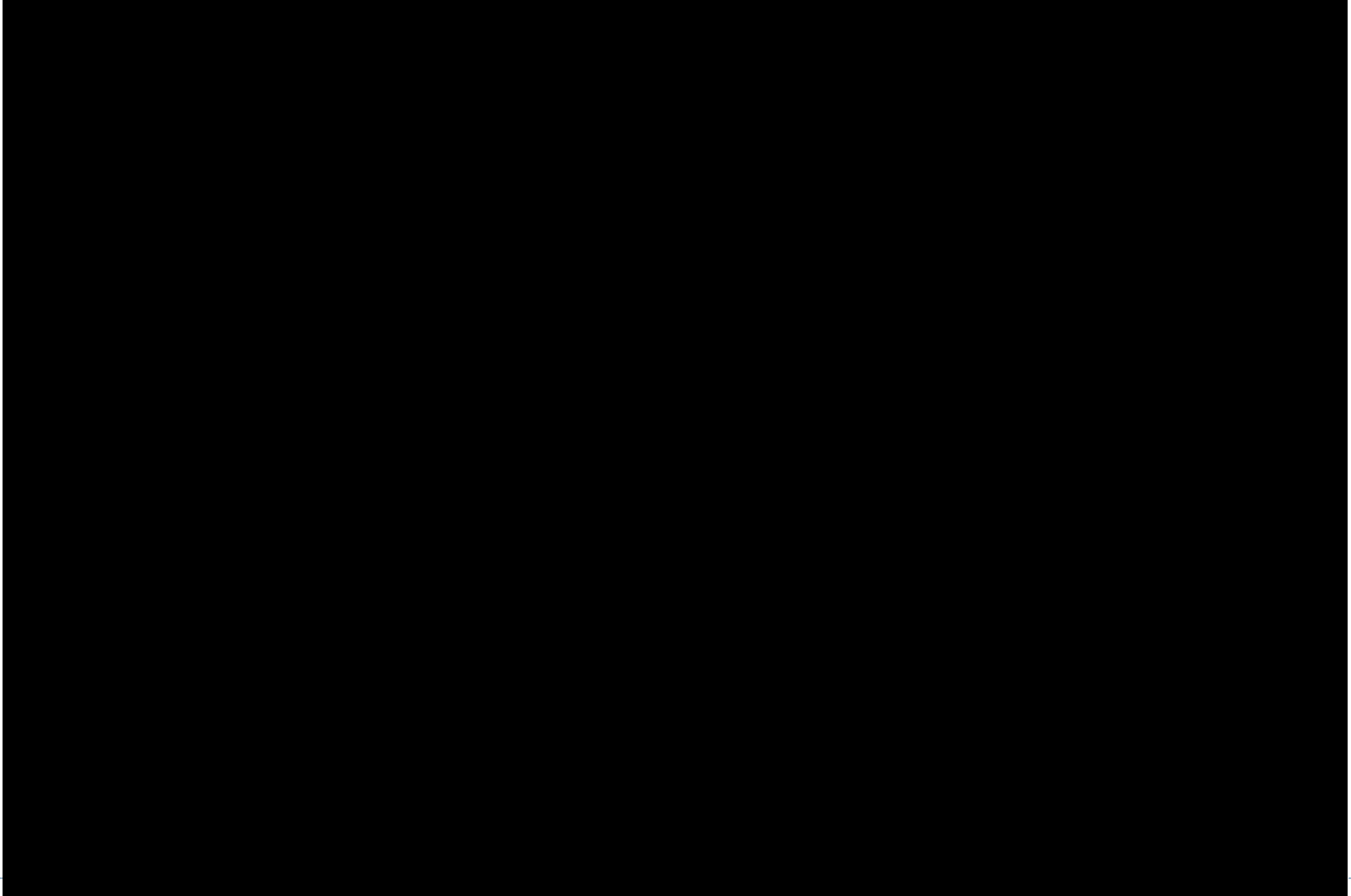
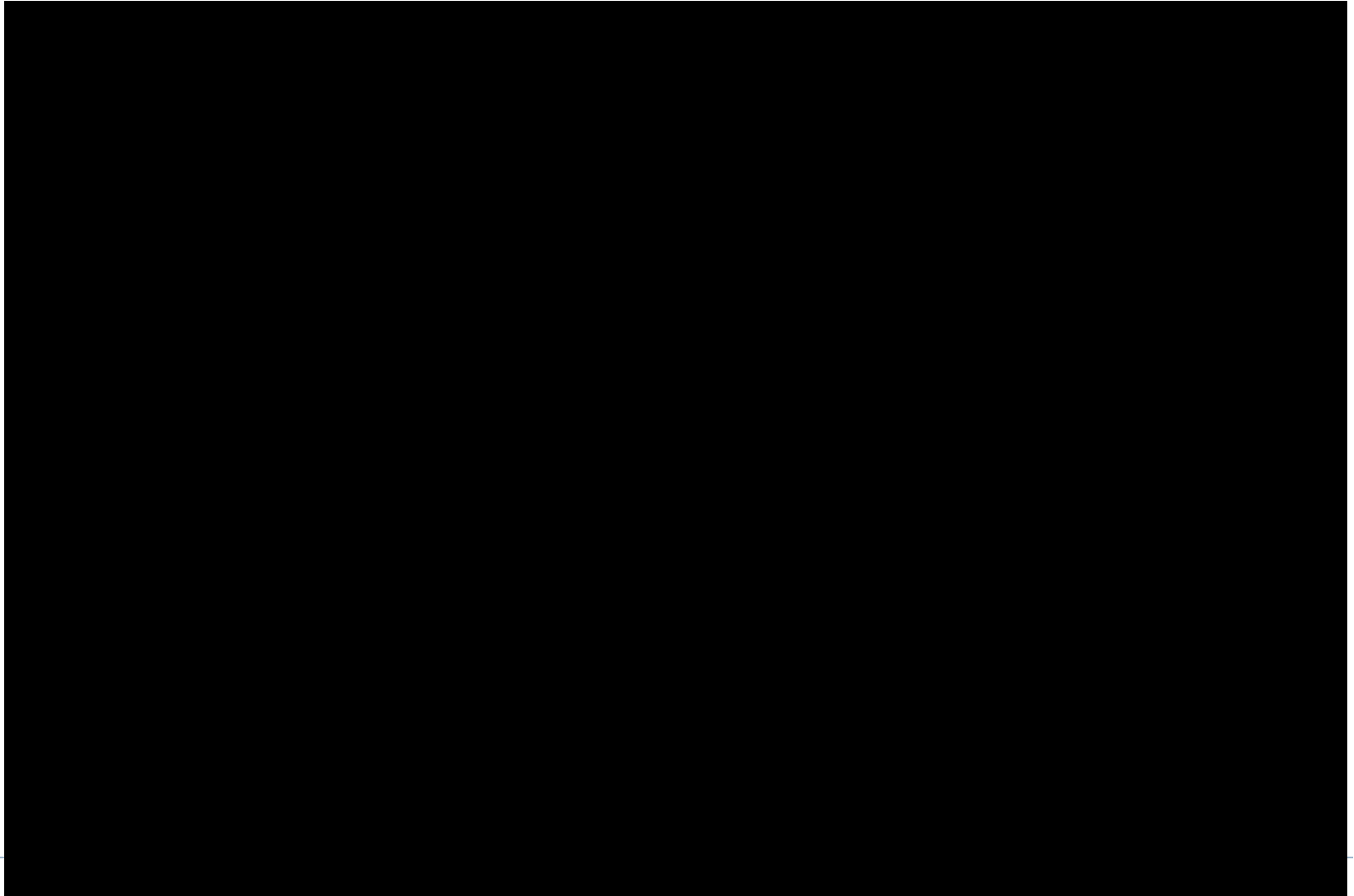


Fig. 3 A transfix suture is placed on the diaphragmatic pillar and helps in retracting the liver, exposing the gastroesophageal junction

18 year old female BMI=46,7 treated with
SILS Sleeve Gastrectomy.



24 year old female BMI=41.5 treated by SILS Adjustable Gastric Banding



In Conclusion:

- ▶ SILS is evolving gradually and becoming an acceptable and safe alternative to conventional Laparoscopic Bariatric Surgery.
- ▶ Surgeons must be well experienced in Laparoscopic Bariatric Surgery before practicing SILS Bariatric surgery.
- ▶ Efforts of the LESS Consirtium recently formed should be supported but the consirtium should be a platform for all international surgeons doing LESS surgery.
- ▶ Patients should be well aware of that SILS surgery is not yet the golden standart treatment of choice alternative to laparoscopic Bariatric Surgery.
- ▶ More randomized trials are needed for the complete acceptance of SILS surgery as an alternative to convential laparoscopic surgery
- ▶ Single access Robotic surgery will be good choice to be used in Bariatric Surgery in the future.





Thank you for your attention!

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