

## Newsletter of the International Bariatric Club

Editor: Haris A. Khwaja MD, DPhil (Oxon) FRCS

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## International Bariatric Club: a Worldwide Web Network of Bariatric Surgeons

**Haris A. Khwaja MD, DPhil (Oxon) FRCS**

The International Bariatric Club (IBC) is currently the third largest bariatric organisation after the American Society of Metabolic and Bariatric Surgery (ASMBS) and the Brazilian Society for Bariatric Surgery. In 2008, the concept of the IBC was born through the visions of Dr. Tomasz Rogula, Assistant Professor of Surgery (Cleveland Clinic, Ohio, USA), Dr. Raul Rosenthal, Professor of Surgery (Cleveland Clinic, Florida, USA) and Dr. Philip Schauer, Professor of Surgery at the Cleveland Clinic, Ohio.

Initially the club consisted of 1 hour talks given by the Cleveland Clinic Bariatric Fellows, broadcasted over the internet to an on-line audience. The talks were based on 1 - 2 recently published, high quality bariatric papers and were built within the educational curriculums of the Fellowship in Advanced Laparoscopy/Bariatric Surgery of both Cleveland Clinic campuses. These webinars initially attracted a small on-line audience but allowed for questions to be put to the speaker.

I presented a webinar in 2009 during my Fellowship at the Cleveland Clinic - a review of the paper ‘Prevalence of Thrombophilias in Patients Presenting for Bariatric Surgery’ [Overby et al. *Obes Surg.* 2009 Sep;19 (9):1278-85]. The paper had just been published and clearly was of great educational value to all attendees including on-line audience which on that occasion included surgeons from throughout the United States, Brazil and China. It was clear to me that at this embryonic stage of the IBC that it had the potential to expand into a

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|--|
| <b>1. Promotion and exchange of knowledge, ideas and experiences related to the pre-operative, intra-operative,</b>      |
| <b>2. Sharing of bariatric surgery videos relevant to management of intra-operative and post-operative complications</b> |
| <b>3. Promotion of the monthly Webinar coordinated by the Cleveland Clinic in association with WebEx</b>                 |
| <b>4. Promotion and Involvement in National and International Meetings relevant to Bariatric &amp; Metabolic Surgery</b> |

**Figure 1: Aims of the International Bariatric Club**

## Newsletter of the International Bariatric Club

Date	Presenter	Title of Talk
May 13 <sup>th</sup> , 2011	Dr. Mohammad Talebpour (Iran)	11 years Experience of Laparoscopic Greater Curvature Plication and its Modifications
May 25 <sup>th</sup> , 2011	Prof. Harvey Sugerman (USA)	What Procedure is Best for T2DM in High and Low BMI Patients?
June 29 <sup>th</sup> , 2011	Dr. Manoel Galvao Neto (Brazil)	Endoluminal therapy for obesity and T2DM is acceptable
July 27 <sup>th</sup> , 2011	Dr. Chih-kun Huang (Taiwan)	Laparoscopic adjustable gastric banded plication: technique and preliminary results
Sept. 1 <sup>st</sup> , 2011	IBC at IFSO (Hamburg, Germany) Dr. Jaime Ponce (USA) Prof. Phil Schauer (USA) Prof. Mohammad Talebpour (Iran) Prof. Michel Gagner (USA) Prof. Chih-Kun Huang (Taiwan) Dr. Manoel Galvao Neto (Brazil) Prof. Mervyn Deitel (Canada)	Bands no more? Bypass kills diabetes Plication kills sleeve Sleeve kills bands Bands on bypass and plication I can do it from inside What's new in metabolic surgery?
Sept. 28 <sup>th</sup> , 2011	Dr. Shashank Shah (India)	T2DM in the Indian Population
Oct. 26 <sup>th</sup> , 2011	Dr. Ariel Ortiz (Mexico)	Live Demonstration: Laparoscopic Greater Curvature Plication
Nov. 26 <sup>th</sup> , 2011	IBC at Illrd Romanian Bariatric Symposium (Bucharest, Romania) Prof. Mervyn. Deitel (Canada)  Dr. Marius Nedelcu ( France)  Dr. Tomasz Rogula (USA)  Dr. Gianfranco Sillechia (Italy)  Prof. Catalin Copăescu (Romania)  Dr. Manoel Galvao Neto (Brazil)	Why Diabetes Does Not Resolve in Some Patients after Bariatric Surgery?  Short Review of the Literature for Metabolic Surgery for Patients with BMI under 35  New Data about Cardiac Risk Factor after Bariatric Surgery  Gastro-Esophageal Reflux after Bariatric Surgery  Gastric Imbrications - Complication Rates, Leaks, Increased Salivation, Weight Regain. Is It Worth It?  His Angle Fistula on Sleeve Gastrectomy Endoscopic Treatment, Dealing with a Nightmare

**Table I: Activities of the International Bariatric Club in 2011**

powerful educational medium for the exchange of bariatric knowledge globally. Indeed from these early days, IBC has grown significantly in terms of membership and its' range of activities. The club still remains a free, non-profit making organisation open to all bariatric surgery/medicine professionals and easily accessible on-line to registered participants. In November 2010, the IBC Facebook Page was set up with the aim of promoting free discussion with bariatric professionals throughout the world on a daily basis. Following this the membership of the IBC expanded exponentially such that as of December 20<sup>th</sup>, 2011 there are 399 members from Europe, Asia, Africa Australia, North and South America. The aims of the IBC are outlined in Figure 1.

### Webinar Activities

The monthly webinar in conjunction with WebEx web conferencing based at the Cleveland Clinic, Ohio, USA usually takes place the last Wednesday of the month at 1700 (GMT) subject to occasional variation. It provides an opportunity for all members of the IBC to listen and/or see a high quality presentation by a national/international expert in bariatric surgery with the chance to ask questions to the speaker. These lectures are also recorded and so can be watched anytime. The club has also attracted global bariatric surgery leaders such as Rudolph Weiner (Germany), David Kerrigan (United Kingdom), Ariel Ortiz (Mexico), Manoel Galvao Neto (Brazil), Harvey Sugeran (USA), Michel Gagner (Canada), Philip Schauer (USA), Chih-Kun Huang (Taiwan) and Mohammad Talepbour (Iran) - see photos on pages 3-4. Table 1 (see page 2) lists the presentations from 2011 which were not only informative but provided a great opportunity for an interactive on-line verbal discussion.

In addition, the inaugural non-virtual IBC Symposium took place at the XVI World Congress of the International Federation for the Society of Obesity & Metabolic Surgery (IFSO) in Hamburg Germany in September 2011. The event was supported by former IFSO President, Professor Rudolph Weiner (Figure 2). A similar high quality event has been organised for the IFSO-European Chapter (IFSO-EC) Meeting in Barcelona, Spain in April 2012 and at the next IFSO-World Congress in New Delhi, India in September 2012 by the IBC organising committee.

**Figure 2(a) – Prof. Rudolph Weiner (IFSO President 2011) & Prof. Michel Gagner at the IBC Symposium, XVI World Congress of IFSO, Hamburg, Germany (September 2011)**



### Future Aims

The expansion of the IBC has been clearly enhanced by the internet. We are currently concentrating our efforts on maintaining the high standard of monthly Webinars with an increasing number of live webinars from the operating theatre.

The IBC website will be ready by February 2012 and will allow any bariatric professional easy access to the latest IBC activities, video library and newsletter. We have already organised the next IBC non-virtual meeting in April 2012 at IFSO-EC in Barcelona, Spain. These presentations will of course be broadcast live over the internet for any registered member to access. Long-term the IBC will, through multi-centre cooperation, be organising randomised controlled clinical trials in relation to bariatric surgery. This has only been possible through the recruitment of large number of enthusiastic, dedicated bariatric professionals as well as the involvement of world experts within the IBC.



**Figure 2(b) – Prof. Philip R. Schauer (Past President ASMBS) & Dr. Tomasz Rogula (IBC Director) at the IBC Symposium, IFSO (September 2011)**

**Figure 2(c) – Prof. Mohammad Talebpour (Iran) – ‘Father’ of the Laparoscopic Greater Curvature Plication at the IBC Symposium, IFSO (September 2011)**



**Figure 2(d) – Prof. Chih-Kun Huang (Taiwan) – Presentation on ‘Bands on Bypass & Plication’ attracted great interest at the IBC Symposium at IFSO (September 2011)**

## Membership

Membership to the International Bariatric Club can be made by sending an email to Dr. Tomasz Rogula, Director of the IBC based at the Cleveland Clinic, Ohio, USA. ([rogulat@ccf.org](mailto:rogulat@ccf.org)). A link inviting you to attend the monthly Webinar via WebEx videoconferencing provided by the Cleveland Clinic will be sent to you prior to the presentation. After registering you will receive a confirmation with the details of the upcoming International bariatric Club Videoconference. Access to the live Webinar can be made via computer (PC or Mac) with a webcam or with a smart phone (iPhone, iPad, Android, Blackberry). Membership to the IBC from March 2012 will be possible through the IBC website. [IBC](http://www.ibcclub.com)

## The History of the Laparoscopic Gastric Plication

Mohammad Talebpour, MD

The increasing prevalence of morbid obesity in the developing world is a cause of great concern. As in the Western world, interventions by way of diet and exercise have not succeeded in terms of curbing this epidemic in Iran. The variable outcomes of restrictive procedures such as the gastric band and sleeve are not only related to surgical technique but also requires the patient to 'work' with their operation *lifelong* in terms of diet and exercise.

I developed a new restrictive bariatric surgery operation 12 years ago called the 'laparoscopic gastric plication' (LGP) This operation was born out of many years of doing experimental plication procedures in animal models prior to it being trialed in humans. My initial animal models involved work in sheep. I studied 4 types of gastric restrictive procedure in sheep. These included anterior plication, direct suture of the anterior stomach wall to the posterior wall, anterior plication with extensive wrap around the upper part of stomach and eversion of the stomach at the axis of the lesser curvature. (Figure 1).

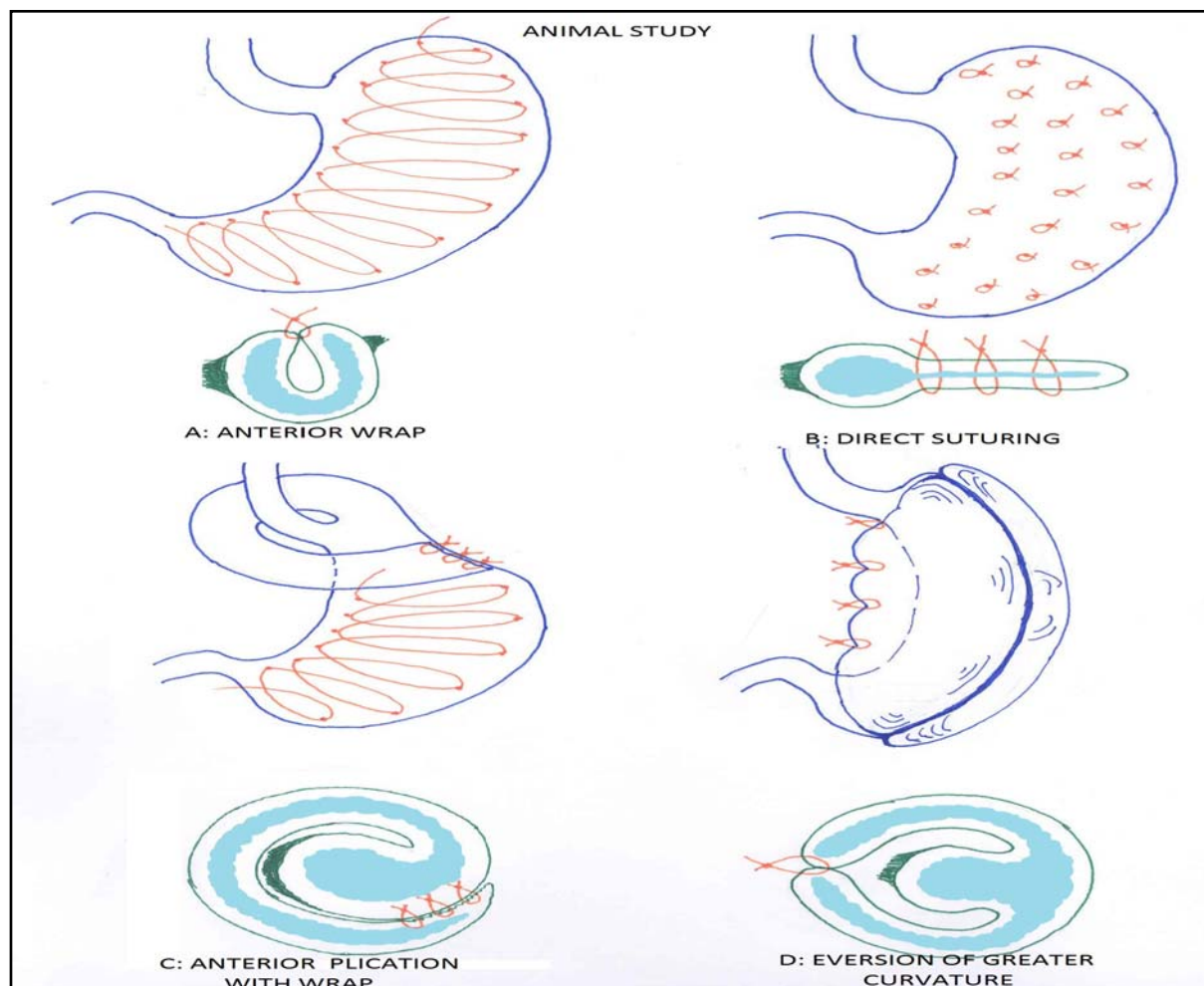


Figure 1: The four types of gastric plication studied in the sheep model

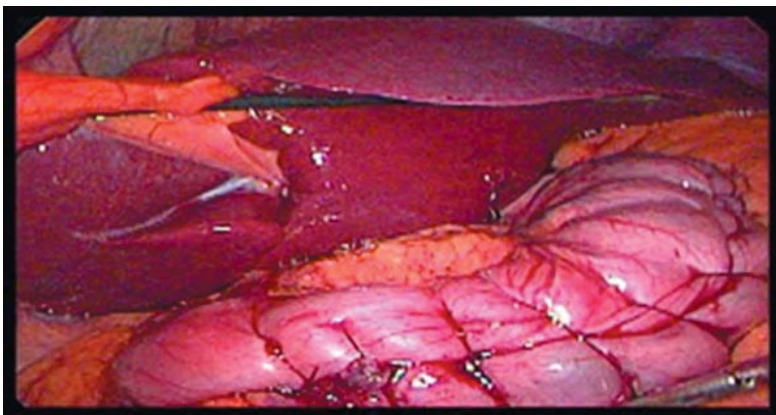


The perceived advantages of LGP are it avoids a foreign body (cf. gastric band), does not interfere with the small bowel and is not associated with long-term vitamin/mineral deficiencies. It is also a cheaper bariatric intervention compared to the standard procedures of gastric band, gastric bypass and sleeve gastrectomy.

Eligibility criteria for gastric plication that we used are any patient with a BMI over 40 kg/m<sup>2</sup> or 35 kg/m<sup>2</sup> with comorbidity. All patients were over 18 years old. However over the last 5 years since adopting the LGP technique I have performed the procedure on selected well educated adolescent patients.

My current version of LGP involves making two rows of suture lines using one suture. This causes fixation of the inverted folds of the gastric wall. I believe this prevents any displacement of the two folds thus increasing the degree of functional restriction by adhesion of the two rows together and interfering with normal peristalsis.

My technique involves one 10 mm and three 5 mm trocars used. The greater omentum is dissected 1 cm from the greater curvature from 3 cm from the pylorus to the Angle of His. Two layers of the plication are done with a 00 prolene from the fundus to within 3 cm of the pylorus ensuring extramucosal bites are taken. (Figure 2)



**Figure 2: Intra-operative photograph of a gastric plication**

During the first 6 weeks postoperatively free fluids are instituted for 2 weeks, followed by pureed diet (2 weeks) and then semi-solids for 2 weeks and then normal food. It is very important to prevent any solid food intake during first 6 weeks as the effective volume of the stomach decreases due to edema and thus carries the risk of suture site tearing by forceful contraction of stomach, secondary to solid ingestion.

### **Results: Demographics and Outcomes**

I have done 800 laparoscopic gastric plications to date. The ratio between female and male patients in my series was 650 to 150 (81% to 19%). Mean BMI of patients was 42.1 kg/m<sup>2</sup> (35-59). The mean % excessive weight loss (% EWL) was 20% after one month, 35% after 2 months, 45% after 3 months, 60% after 6 months, 67% after 12 months, 70% after 24 months, 66% after 3 years, 62% after 4 years and 55% after 5 years following surgery. The % EWL peaked at 2 years to 70% with a gradual decrease to 43% by 10 years. These results are comparable to weight loss seen in gastric band and sleeve gastrectomy patients. The average time of follow up was 5 years (12 months -12 years).

The mean operative time was 72 (49–152) minutes and all patients were discharged from hospital after an average time of 72 hours of operation (1 - 45 days). In my series there was about 5.5% weight regain up to 4 years after operation (26/490) but 31% regain after up to 8 years of operation (55/176) and ) and 42% after 10 years (15/35). The rate of 42% regain after 10 years in my first 35 cases of LGP was due to learning curve, one row method and a lax plication. (Figure 3)

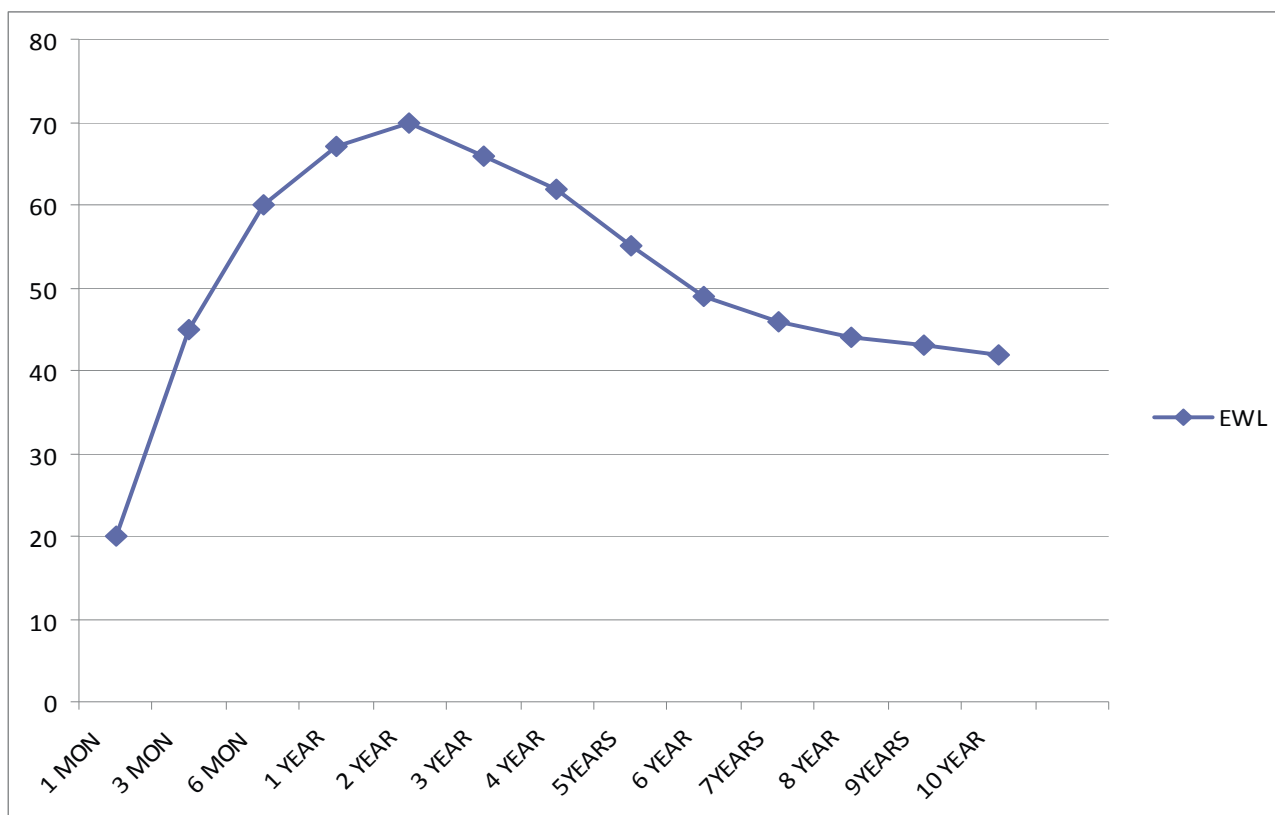
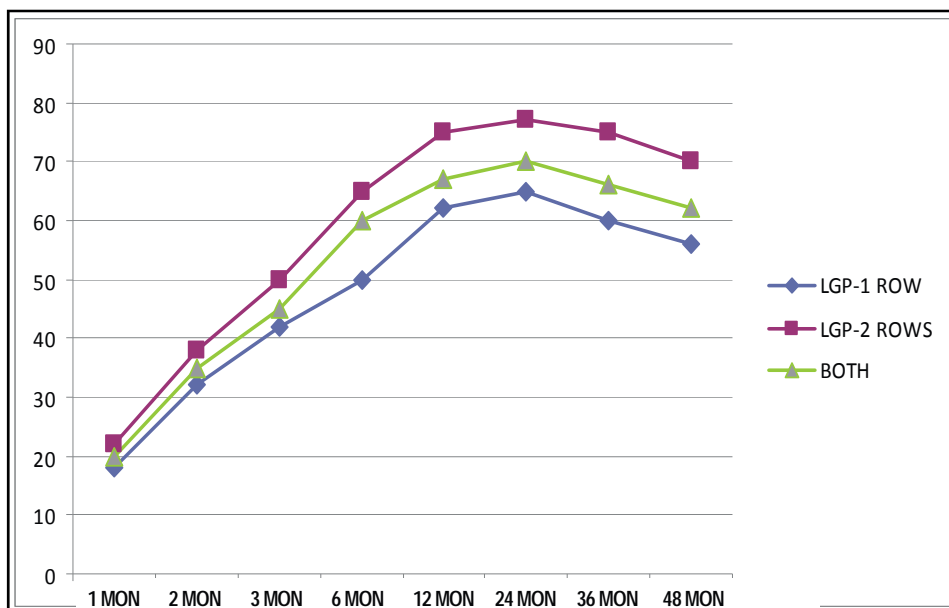


Figure 3 - Weight loss expressed as (% EWL) up to 10 years post laparoscopic gastric plication

### Comparison Single Layer *versus* Two Layer Plication

The volume of stomach in a one layer plication was calculated to be 100 cc but just one half of it was effective (functional restrictive effect). The volume of stomach in a two rows plication was 50 cc (anatomic restriction) but the role of functional restriction (25cc) in this method is more prominent due to adhesion of two row sutures together. Comparing % EWL between one row and two rows LGP showed it was the same at first but higher at long term due to less anatomic volume and prominent functional restrictive effect in two rows group. (Figure 4)



**Figure 4 – Weight loss expressed as (% EWL) using a single and double gastric plication**

### Complications

Vomiting and nausea was seen in all patients for at least 4 hours and the longest time with spontaneous remission was 24 days (average time=2.1 days). Epigastric pain was seen in 35% of cases for 48 hours and was relieved by antacids. Esophageal reflux was a common problem during the first week due to high intraluminal pressure and mucosal edema after plication. If patient drink or eat more than 25 cc each time epigastric pain or esophageal reflux would occur which are important complaints (especially during first 6 months). These are two inhibitory mechanisms preventing any change in volume intake. If volume intake is in permitted dose, reflux or pain will not appear.

Postoperative technical complications were seen in 8 cases out of 800 (1%). Micro perforation occurred in three cases, intra hepatic hematoma in one case, postoperative obstruction and continuous vomiting in three cases and in the last case unusual adhesion between fundus and traumatized liver, permanent vomiting and discomfort. The rate of late (after 1 month of operation) postoperative complication after plication was zero.

### Conclusions

We will need more cases and longer follow up time especially for the two row LGP cases to assess the true efficacy and durability of this operation. Certainly weight regain was seen more in patients who underwent the single layer plication. Complication rates can be kept low by adherence to a meticulous technique and gradual introduction of solids after 6 weeks.

I am very grateful to my patients who took part in the first human trials of the “laparoscopic gastric plication” (LGP). This has resulted in tremendous interest and practice of my procedure throughout the world. Excellent units practicing the procedure have arisen in Mexico (Professor Ariel Ortiz Lagardere), Brazil (Dr. Almino Ramos), Czech Republic (Dr. Martin Fried) and the Cleveland Clinic, USA (Professor Philip R. Schauer). [IBC](#)



## A Novel Bariatric Procedure: Laparoscopic Adjustable Gastric Banded Plication (LAGBP)

Chih-Kun Huang, MD

### Introduction

Laparoscopic adjustable gastric banding (LAGB) is considered a potentially safe and reversible bariatric surgery. It is associated with longer follow-ups, frequent adjustments, and its own set of complications, such as slippage, gastric erosion and weight regain.

Another new restrictive procedure, laparoscopic greater curvature plication (LGCP), was introduced by Professor Mohammed Talebpour from Iran, in which the greater curvature of the stomach is plicated in order to decrease the size of the stomach without gastric transection.

We have introduced laparoscopic adjustable gastric banded plication (LAGBP), which combines adjustable gastric banding and greater curvature plication, in an effort to find a durable and relatively safe weight loss procedure (Figure 1). This approach allows patients to lose weight in less time with plication or banding alone, but also possesses the adjustability of the band, with a decreased frequency of clinic visits and adjustments. Further band adjustments can be used to augment weight loss and prevent future weight regain.

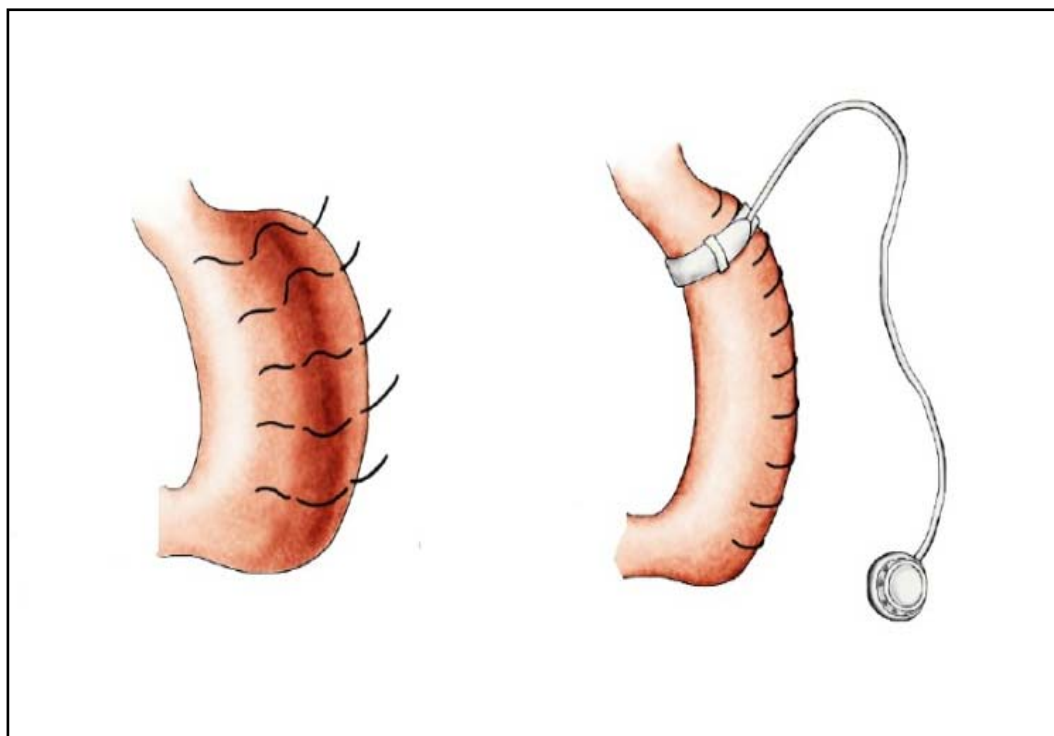


Figure 1: Schematic Diagram of a Gastric Band *in situ* with a fully plicated greater curvature of stomach

The inclusion criteria for this surgery were according to the Asia Pacific Bariatric Surgery Society Guidelines (2005), with age between 18 - 65 years and BMI between 32 -50 kg/m<sup>2</sup>. Patients excluded were super-obese (BMI > 50 kg/m<sup>2</sup>) and those with previous gastric surgery, liver cirrhosis with portal hypertension, and severe gastroesophageal reflux disease. Preoperative gastroscopy was routinely performed to test for *Helicobacter pylori* or screen for neoplasms or peptic ulcers. Patients were prescribed liquid diets for 1 day, and a proton pump inhibitor (PPI) and steroid (dexamethasone, 5 mg) were intravenously administered to patients 1 hour before surgery.

### Surgical Technique

With a 5-port technique, Swedish Adjustable Gastric Band placement was performed by the standard *pars flaccida* method, using 2-3 gastro-gastric non-absorbable sutures to fix the band. We then divided the greater omentum at the greater curvature of the stomach with a Harmonic Scalpel, starting 3 cm away from the pylorus, and continuing to the angle of His. A 36 Fr orogastric tube was placed in situ for reference and 5-6 interrupted non-absorbable sutures were placed, starting from the fundus, just below the band, down to the antrum. This was subsequently reinforced with continuous seromuscular suturing, using the same 2-0 Ethibond suture. After confirming patency of the band by testing with injection of water, the calibration tube was removed and the reservoir port fixed near the umbilicus.

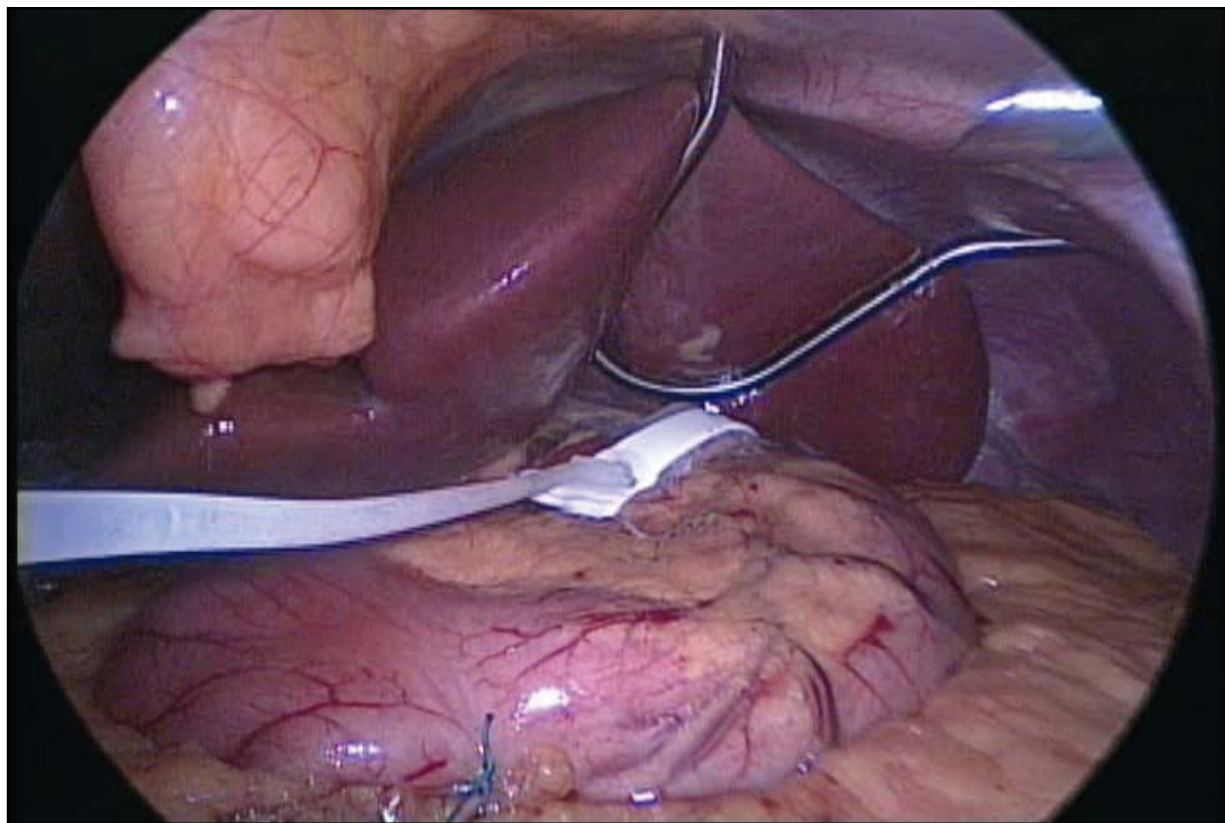


Figure 2: Intra-operative photograph of an adjustable gastric banded plication

As a consequence of the occurrence of herniation of the gastric fundus from incomplete plication, we shifted to doing the plication-first and then gastric band insertion. We started with the division of the greater omentum at the greater curvature of the stomach and performed gastric plication with the same technique as the band-first technique. The adjustable gastric band was placed later and we did not perform gastro-gastric fixation for the band (Figure 2). Oral sips were commenced 4–6 hrs after surgery with proton pump inhibitors (PPIs) and dexamethasone administered for 1 day following surgery. Patients were discharged promptly, if they did not exhibit vomiting after liquid intake and had normal observations. Oral PPIs were prescribed for 2 weeks following surgery. A Gastrografin meal was conducted at the end of the third month following surgery. Upper GI endoscopy was performed at the 12<sup>th</sup> month for routine evaluation. Adjustment of the gastric band was started only after weight loss plateaued.

### Results

Eighty patients (26 men and 54 women) with a mean age of  $30.8 \pm 8.7$  years and a mean BMI of  $38.1 \pm 4.7$  kg/m<sup>2</sup> were evaluated. The band-first technique was used for 50 patients from May 2009 to June 2011 and was then changed to the plication-first technique from July 2011 to October 2011. Average operation and hospitalization times were  $93 \pm 36$  minutes and  $1.7 \pm 1.0$  days, respectively, when there were no intraoperative complications or surgical mortality. There were 4 (8%) postoperative complications with the band-first technique and 1 (3%) with the plication-first technique. In the band-first technique, we found incomplete plication of the fundus because of the position of the band *in situ* could lead to the complications of herniation of the fundus or puncturing of the band incidentally when performing the gastro-gastric suture. Therefore, we modified our technique from a band-first to plication-first to produce full plication of the fundus, without the need for fixation of the band. This seems to be affirmed by the decrease in complication rates following the use of this technique. Mean percentage excess weight loss (% EWL) at 3, 6, 12, 18, and 24 months were  $34.7 \pm 10.4$ ,  $42.6 \pm 13.7$ ,  $56.4 \pm 19.9$ ,  $57.6 \pm 19.9$ , and  $65.8 \pm 17.4$ , respectively. Band adjustment frequency was only  $2.4 \pm 2.2$  times in the first 2 years.

### Conclusions

LAGBP is a new bariatric procedure with few complications and respectable weight loss at the end of 2 years. We suggest that the plication-first technique be standardized in order to decrease complications. With respect to laparoscopic adjustable gastric banding we believe that plication can also be considered as a salvage procedure to augment weight loss for patients who have experienced gastric band failure. Furthermore, potential reversibility of this procedure, minimal vitamin supplementation requirements, and accessibility of the entire stomach make the procedure valuable. We believe this procedure should serve as a new arm of bariatric surgery. [IBC](#)

## Endoscopic Management of Sleeve Leak – An Interview with Dr. Manoel Galvao Neto and Dr. Josemberg Campos

Marius A. Nedelcu MD, Manoel Galvao Neto MD, Josemberg Campos MD

### 1. What are the endoscopic findings in the patient with a sleeve leak fistula and is the leak related to the morphology of the gastric sleeve?

M.G.N. :- Sleeve leaks high up on the greater curvature, at the Angle of His, is the most common site. Endoscopically they are seen separated from the gastric lumen by a septum. The endoscope will generally pass through the sleeve but it will become apparent the sleeve is twisted with various degrees of rotation needing to pass the scope through the gastric lumen – the so-called Helix stenosis. This goes against the endoscopic dogma of “if the scope passes through there is no stenosis” sometimes leading to failure to identify a distal sleeve stenosis.

There have been described several forms of gastric tube shape after sleeve gastrectomy. All kinds of stenosis, functional or mechanical ones, have an important role in the pathogenesis of the fistula by way of giving rise to a high pressure intra-sleeve environment with a subsequent ‘blow out’ at the Angle of His. Consequently the treatment for sleeve leaks should be directed towards correcting this stenosis to enhance closure of the fistula.

### 2. When do you recommend using endoscopic stenting as a therapeutic modality in the treatment of leaks after sleeve gastrectomy?

J.G. :- Our advice is to use stenting in the management of a sleeve leak as early as possible after the diagnosis of the leak, preferably within the first month

### 3. What do you regard are the principles of an optimal stenting technique for sleeve leaks at the Angle of His?

M.G.N. :- The stent must cover the actual leak at the Angle of His. However a further stent must be positioned across the narrowing usually at the site of the incisura angularis. Only in this way can we



Figure 1

**Figure 1 demonstrates the stent *in situ* but not traversing the incisura and Figure 2 demonstrates the correct position of the stent.**

**This latter position ensures that the sleeve lumen will be kept open thus lowering the pressure within the sleeve and significantly augmenting resolution of the sleeve leak.**

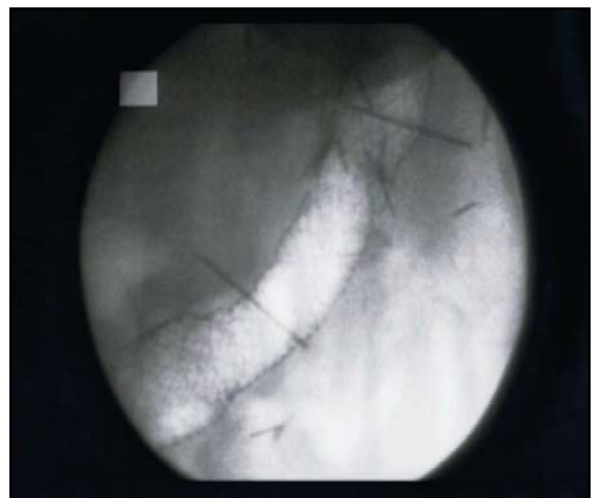


Figure 2

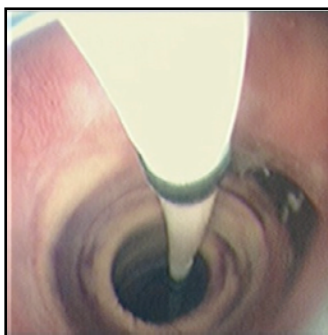


achieve two of the most important aims in the endoscopic treatment of the sleeve leaks:  
 a) to decrease the high pressure within the sleeve caused by the narrowing at the incisura due to the sleeve being too tight and b) correction of the axis of the gastric tube.

There is no 'perfect' stent available for the management of sleeve leaks as the currently available stents were designed as palliative interventions for advanced oesophageal malignancies. The older style silicone stents tend to dislodge with time. I recommend the nitinol based polyurethane covered, self-expandable stents. However they are difficult to remove and the current sizes and lengths available are not optimal. Consequently a second stent is often required to manage a sleeve leak – one to cover the sleeve leak and the second to traverse the narrowing at the incisura. There is a tremendous drive by all the major stent manufacturers to design tailored made stents for the management of sleeve leaks. It is also important to note that with the stent *in situ* patients can complain of epigastric pain, reflux, nausea and salivation. However I advocate this approach as in my experience (which is supported by the published literature) a resolution rate of > 80% can be achieved. The mean implant duration is four weeks and we strongly recommend that stent position be checked weekly by way of a Gastrografin swallow.

**4. What is your approach if the patient is addressed late (after 30 days) from the diagnosis of the sleeve leak fistula?**

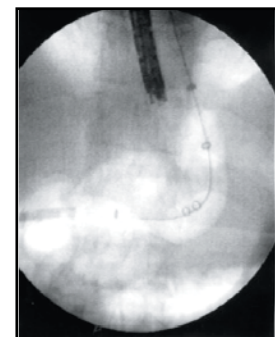
M.G.N. :- Endoscopic pneumatic dilatation of the stenosis is preferable in this situation. The procedure is performed with an achalasia balloon (Rigiflex® balloon 30 -35 mm) over a stainless steel or super-stiff guide-wire in consecutive dilation sessions with stepwise increments in dilation pressure from 15 to 25 psi (**Figures 3 - 5**). Once the balloon is inflated under radiological guidance we can easily observe the correction of the axis of the gastric tube. To be efficient, the treatment must be aggressive and in our experience we have not had any cases of iatrogenic staple line disruption.



**Figure 3**



**Figure 4**



**Figure 5**

**5. During the first 30 days, before inserting the stent, do you perform any dilatation to facilitate the maneuver?**

M.G.N. :- That is a very good question. The stent delivery systems are somewhat rigid and it may be difficult to position it distally to the incisura. Indeed pneumatic dilation of the sleeve immediately prior to stent deployment makes subsequent optimal positioning of the stent much easier.



**6. What is the indication for fibrin glue in the treatment of sleeve leaks?**

J.G. :- In my view regarding sleeve leaks at the Angle of His fibrin glue has no role. Similarly, endoscopically placed clips or sutures to close the leak will not be effective unless the high pressure system within the sleeve is addressed by way of stenting.

**7. What about OVESCO clips?**

M.G.N. :- I have used them in Europe for some cases, and find using them tricky. The clips often end up being placed obliquely on the fistula wall as at endoscopy there is not enough space to visualize the hole 'head on' in order to place the clip in the optimal position. Additionally, the quality of the tissue adjacent to the sleeve leak is very friable and lacks resilience to be held closed by the clips. Also one should not forget that the leak at the Angle of His is a secondary phenomenon due to narrowing usually at the incisura, so even if you are using Ovesco clips do not forget to perform pneumatic dilatation prior to applications of the clips.

**8. What are the additional endoscopic procedures for the treatment of a sleeve leak?**

J.G. :- The endoscope can also be used as an important tool for the drainage of an intraperitoneal abscess. Using the endoscope directed through the site of the leak we can perform a good lavage of the adjacent abscess cavity. We often find at the site of the leak and the gastric lumen a septum which makes the healing more difficult (**Figures 6 - 7**). We therefore advocate an endoscopic septotomy with a needle-knife or with an It-Knife. This maneuver will reshape the fistula site and aids with resolution of the leak.



**Figure 6**



**Figure 7**

**9. To make the transition to the treatment of a chronic sleeve fistula, I recall last year your team published a very interesting article about the endoscopic treatment of gastrobronchial fistula in bariatric surgery. What is your approach in chronic fistula after laparoscopic sleeve gastrectomy?**

M.G.N. :- Systematic pneumatic dilatation of the sleeve every 10-15 days for at least a 3 months period together with endoscopic septomy (even in the absence of obstructive symptoms) is our preferred method of dealing with the chronic fistula after sleeve gastrectomy. If we cannot keep the lumen opened a stent may be effective. Tailoring of the treatment to the clinical status of the patient in the end is the most important aspect of management of these leaks. [IBC](#)

**M.G.N. – Manoel Galvao Neto – Gastro Obeso Center, Sao Paulo, Brazil**

**J.C. - Dr Josemberg Campos (Federal University of Pernambuco, Recife, Brazil)**

## CONTROVERSIAL ISSUES

### “Single Port Access” for Bariatric Surgery

#### Rui Ribeiro MD

The ultimate goal of laparoscopic surgery is to reduce the amount of tissue damage compared to open surgery and thus enhance post-operative recovery and return to daily activities. The laparoscopic approach remains the gold standard approach for metabolic/bariatric surgery procedures today. Single Port Access (SPA) is still a laparoscopic modality, with one incision centred on the umbilicus thus further amplifying the known benefits of laparoscopy.

#### Single Port Access (SPA) Surgery: Advantages and Risks

The perceived benefits of SPA surgery include a decreased risk of access related visceral/vascular injury (we use an open cut down method), less port site bleeding/ herniae as there are no supplemental trocars, the ease of specimen retrieval, reduction in post-operative pain and a shorter hospital stay. The approach also confers privacy and thus a psychological benefit especially in the younger patient.

Critics of SPA bariatric surgery argue it is unnecessary and makes a challenging operation in the morbidly obese even harder and is associated with a higher incidence of incisional hernias. Other physicians suggest that bariatric patients are not worried about multiple small scars. They argue that if they were worried these patients would not have become obese in the first place. This view of the obese individual is unfounded and in my experience they have the same concerns about their body image as lean people. The SPA approach is also not a rigid one - the option of conversion to conventional laparoscopy is always available – indeed, at times, it is a brave and clever decision for the operating surgeon.

#### Understanding the Achilles Heel of Single Port Access (SPA) Bariatric Surgery

The uptake of SPA surgery in the bariatric surgery community has been slow and reflects exaggerated misunderstandings of the inherent difficulties of the technique compared to the multi-port approach. This may be related to the violation of the basic principles all laparoscopic surgeons are taught in their training. Indeed in SPA surgery there is no instrumental triangulation and a loss of reverse triangulation (i.e. when we see our right hand on the left part of the screen) thus resulting in the need to dissect with our non-preferential hand. At times the SPA surgeon has to cross hands and of course instrument clashing makes it hard to be a slick operator.

#### Logistics of Single Port Access Bariatric Surgery

Although some SPA procedures are feasible without any special devices there is a plethora of Single Port Access Surgery devices/instruments available that facilitate this technique. Multiple SPA surgery platforms exist such as the SILS Port (Covidien), the TriPort (Olympus) and the GelPOINT Advanced Access Platform (Applied Medical). Special instruments such as the Olympus, flexible 5 mm “Chip on the tip” cameras (e.g. Olympus Endoeye), flexible/articulating laparoscopic forceps, special traction needles and magnetic retractors have revolutionised SPA surgery (Figure 1).

I believe robotic surgery may eventually prove to be instrumental in SPA surgery of the future through its' flexibility in ergonomics, overcoming abdominal wall torque, increased degrees of freedom of the laparoscopic instruments and a tri-dimensional image.



Figure 1: Typical set up for Single Port Access Bariatric Surgery

### Our Experience

In September 2008 we performed our first SPA gastric band followed in 2009 by the commencement of our SPA sleeve gastrectomy program. In December 2010 we performed our first omega loop mini-gastric bypass. Table 1 summarises our experience of SPA bariatric surgery.

	<b>BAND</b>	<b>SLEEVE</b>	<b>MINI-BYPASS</b>	<b>Range</b>
<b>n</b>	<b>8</b>	<b>32</b>	<b>10</b>	
<b>Age (years)</b>	40	38	37.1	20-57
<b>Initial weight (Kg)</b>	102.8	103.4	105	75-135
<b>BMI ( Kg/m<sup>2</sup>)</b>	38.7	40	39	32.5-53.4
<b>Operative time (min)</b>	75	83	125	110-150
<b>Associated procedures</b>	0	4*	2	*3 cholecystectomies, 3 cruroplasties
<b>Hospital stay (days)</b>	2	3	2.5	1-5
<b>Conversions (to lap.)</b>	0	3	0	
<b>Morbidity</b>	0	2*	0	*1 major abdominal wall bruising *1 small bowel enterotomy
<b>Mortality</b>	0	0	0	

Table 1:  
Experience of  
Single Port Access  
Bariatric Surgery

We have had three conversions to conventional multi-port laparoscopy in the SPA sleeve series to date. All patients had a BMI > 45kg/m<sup>2</sup>. In two cases the SPA platform length was not long enough to get into the abdominal cavity. In the third, the sleeve could not be done safely because of difficulty in dissecting the Angle of His. Consequently I have developed criteria for deciding on the SPA approach in the bariatric population as outlined in Table 2.

<b>PATIENT SELECTION</b>	
<b>BMI</b>	< 45 kg/m <sup>2</sup>
<b>Height</b>	< 170 cm
<b>Habitus</b>	Gynoid No previous abdominal operations No umbilical processes (hernia or infection)

**Table 2: Criteria for Consideration for SPA Bariatric Surgery**

In four patients we performed additional surgeries: 2 cholecystectomies and 2 cruroplasties. In one case we performed cholecystectomy, cruroplasty and gastric bypass by the single umbilical incision.

We have had 2 complications: one periumbilical ecchymosis that resolved after two weeks of conservative treatment and one iatrogenic small bowel perforation. The perforation was detected due to bilious fluid appearing in the drain inserted at the time of sleeve gastrectomy. The patient underwent re-laparoscopy, washout and the enterotomy was oversewn. The patient was discharged home on post-operative Day 4. The 1 year % excess weight loss (% EWL) in the 32 sleeve gastrectomy cases was 72.8% and we are awaiting more long term data for the other bariatric surgeries.

**Bariatric Single Port Access Surgery – Tips & Tricks**

One of the major difficulties with SPA bariatric surgery is liver retraction. We have tried several options for retraction of the left lobe of the liver including utilizing liver-suspension tape (LST) and the Tacchino technique using hiatal anchored trans-abdominal threads with good effect. For suturing (mainly in gastric bypass) we used the Covidien Endostitch but a regular needle-holder may be also used. In some cases we need use an extra instrument for retraction or to hold sutures. We use a disposable suture Grasper Needle (Proxy14 Gauge), the incision of which, heals with no visible scarring. In the sleeve gastrectomy cases we have performed staple line reinforcement by way of oversewing the staple line (Covidien Endostitch), application of fibrin glue or utilizing the Endo-GIA Duets TRS (Covidien). We routinely leave a Robinson drain traversing above the fascia incision and exiting through the umbilical skin incision. We are meticulous about closing the aponeurosis and the skin, leaving the umbilical cicatrix attached to the aponeurosis for a good cosmetic effect. .

**Conclusions**

Although Single Port Access bariatric surgery is expanding in North America, there is still no evidence of its’ clinical benefit. In addition current SPA hardware is expensive and so it is important that if SPA bariatric surgery is to expand throughout the world these costs will need to be minimized. The advantages of SPA bariatric surgery pertain mainly to that of patient cosmesis and privacy. [IBC](#)

## FELLOWSHIP FOCUS: Fellowship in Advanced Laparoscopy/Bariatric Surgery, Cleveland Clinic, Ohio, USA

Haris A. Khwaja MD, DPhil (Oxon) FRCS

The Bariatric and Metabolic Institute (BMI) at the Cleveland Clinic, Ohio is considered one of the leading bariatric surgery units in the world. The BMI is headed by Professor Philip R. Schauer, a global leader in bariatric surgery. The unit performs between 600 – 700 laparoscopic bariatric surgery cases per year with the majority of the work focused on laparoscopic gastric bypass (LRYGB), sleeve gastrectomy (LSG) and revisional bariatric surgery including the banded bypass. The uniqueness of the Fellowship was the high frequency of super super morbidly obese patients (>60kg/m<sup>2</sup>) who underwent surgery (the highest being a BMI 122 kg/m<sup>2</sup>) as well as the acuity of the patients in terms of significant cardiovascular, respiratory and liver problems. These patients had often been turned down for bariatric surgery by other units in the United States. The unit is also at the forefront of clinical bariatric surgery research conducting trials in Laparoscopic Greater Curvature Plication (LGCP) and the Surgical Therapy And Medications Potentially Eradicate Diabetes Efficiently (STAMPEDE), a randomized study comparing the effectiveness of advanced diabetes medical therapy alone versus surgery (sleeve gastrectomy or gastric bypass) and medical therapy combined, for the treatment of Type 2 Diabetes.

There are 4 Fellow with two on the 1 year Clinical Fellowship track and two on the 2 year Research/Clinical track. The Fellowship is divided into four 3 month periods with each Fellow starting at a different time point. A typical Fellow's timetable is outlined in Table I.

Time Period	Workload	Consultants	Experience
July 1 <sup>st</sup> – Sept. 30 <sup>th</sup> , 2009	Minimally Invasive Surgery/ Clinical Research	Dr. Tomasz Rogula Dr. Steven Rosenblatt	<ul style="list-style-type: none"> <li>·Lap Splenectomy</li> <li>·SILS/Lap Cholecystectomy</li> <li>·Lap Incisional/ Inguinal Hernia</li> <li>·Abstracts prepared &amp; submitted to SAGES &amp; ASMBS</li> </ul>
Oct. 1 <sup>st</sup> – Dec. 30 <sup>th</sup> , 2009	Bariatric Surgery	Dr. Philip Schauer Dr. Tomasz Rogula	<ul style="list-style-type: none"> <li>·Lap Roux-en-Y Gastric Bypass</li> <li>·Lap Sleeve Gastrectomy</li> <li>·Lap/Open Revisional Bariatric Surgery</li> </ul>
Jan. 2 <sup>nd</sup> – March 30 <sup>th</sup> , 2010	Bariatric Surgery Diagnostic/ Therapeutic OGD	Dr. Stacy Brethauer	<ul style="list-style-type: none"> <li>·Lap Roux-en-Y Gastric Bypass</li> <li>·Lap Sleeve Gastrectomy</li> <li>·Revisional Bariatric Surgery</li> <li>·PEG Insertion</li> <li>·Book Chapter written</li> </ul>
April 1 <sup>st</sup> – June 30 <sup>th</sup> , 2010	Bariatric Surgery	Dr. Philip Schauer Dr. Tomasz Rogula	<ul style="list-style-type: none"> <li>·Lap Roux-en-Y Gastric Bypass</li> <li>·Lap Sleeve Gastrectomy</li> <li>·Lap/Open Revisional Bariatric Surgery</li> <li>·Presentations at SAGES &amp; ASMBS</li> </ul>

Table I – Timetable for the 1 Year Clinical Fellowship



The Fellowship is demanding compared to most American Fellowships in that there are no junior staff on the service so all ward rounds, electronic medical record documentation, admission/discharge paperwork and post-operative issues are done by the Fellow. The advantage however is that all the surgeries are done by the Fellow. There are twice weekly surgery days with theatre from 715 to 1800 followed by an evening ward round from 19:00 - 20:0. Twice a week there would be Bariatric Clinics running from 8:30 - 17:00.

Postgraduate teaching is facilitated by a weekly Fellow's Presentation on a topic based on the ASMBS Curriculum, monthly Advanced Laparoscopy National/International Video Conferences, a monthly Bariatric Webinar (through the International Bariatric Club) and Weekly General Surgery M & M meetings.



**Figure 1 - Professor Phillip Schauer (left),  
Director: Bariatric & Metabolic Institute,  
Cleveland Clinic, Ohio, USA**



**Figure 2:  
Cleveland Clinic, Ohio, USA**

Average work days were 16 hours/day with a 1:5 on-call for Bariatric Surgery and a 1:12 for General Surgery both from home. Typical case volume includes between 300-350 cases comprising a mixture of bariatric and non-bariatric surgeries.

The Fellowship allows one to gain the necessary technical skills and case volume to overcome the learning curve of the various bariatric surgeries and be able to undertake these surgeries independently. any trainee with an interest in Advanced Laparoscopy/Bariatric Surgery to undertake a Fellowship. The American Fellowships however do require planning for those residing outside the United States: the necessary American USMLE exams need to be completed and Visa requirements need to be satisfied. However the experience gained in working in a high volume bariatric unit operating and managing the morbid and super super morbidly obese patient will make it an extremely valuable year. [IBC](#)



The **International Bariatric Club (IBC)** is a non-profit, international organization of bariatric surgeons and educators. The IBC's mission is to promote and exchange knowledge, ideas, and experience related to the preoperative, intraoperative, and post-operative care of the bariatric patient with bariatric professionals throughout the world.

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