Made in one piece from band to junction with port - so leak less likely.
Double closure system device with safety in mind.
Flexible, supple and smooth for all surfaces.
Gentle to the stomach when closed.
No rough edges.
Easy to place.
Insert via 12mm trocar.
No bulky external locking system.

www.midband.com
<table>
<thead>
<tr>
<th>Title</th>
<th>Authors</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>VERTICAL BANDING GASTROPLASTY : MANAGEMENT OF FAILURE</td>
<td>V. Frering, E. Fontaumard</td>
<td>5</td>
</tr>
<tr>
<td>RESULTS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>THE ADJUSTABLE MIDBAND GASTRIC SURGERY TO CORRECT THE VERTICAL SUTURE</td>
<td>C. Vassallo, G. Berbiglia, A. Della Valle, L. Negri</td>
<td>7</td>
</tr>
<tr>
<td>DEHISCENCE IN MASON’S GASTROPLASTY</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BAND MISPLACEMENT / AN UNCOMMON CAUSE OF GASTRIC BANDING FAILURE</td>
<td>M. Blanchet, V. Frering, G. Gouillat</td>
<td>8</td>
</tr>
<tr>
<td>PROSPECTIVE IMPEDANCEMETRY STUDY OF MIDBAND PATIENTS OVER 4 YEARS</td>
<td>P. Urbain</td>
<td>9</td>
</tr>
<tr>
<td>FOLLOW UP OF 1200 OBESE PATIENTS TREATED WITH LAPAROSCOPIC ADJUSTABLE</td>
<td>G. Bottani, E. Gerosa, E. Bastaroli, A. Zanardi, P. Petrosillo, F.</td>
<td>10</td>
</tr>
<tr>
<td>GASTRIC BAND. VALUATION OF EFFICACY AND LIFESTYLE QUALITY</td>
<td>D’Arosca, L. Negri, L. Sacca, F. Repetti, A. Todde</td>
<td></td>
</tr>
<tr>
<td>HOW TO SIMPLIFY GASTRIC BANDING AFTER 7000 PROCEDURES</td>
<td>V. Frering, E. Fontaumard</td>
<td>11</td>
</tr>
<tr>
<td>LAPAROSCOPIC GASTRIC BANDING – IS IT SAFE NOT OT SUTURE ?</td>
<td>A. Bond, K. Gallagher, S. Modi, J. Horner</td>
<td>12</td>
</tr>
<tr>
<td>ADJUSTABLE GASTRIC BAND IN LAPAROSCOPIC ADJUSTABLE GASTRIC BANDING</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SLIPPAGE FINDINGS WITH MIDBAND</td>
<td>S. Verboonen, J. Ponce de Leon</td>
<td>14</td>
</tr>
<tr>
<td>MEDIDAS INTRAOPERATORIAS PARA DISMINUIR LA INCIDENCIA DE INFECCION DE</td>
<td>C. Santamaria Hernandez, P. Anchustegui Melgarejo, J. Alvarez Alvarez</td>
<td>15</td>
</tr>
<tr>
<td>EL PUERTO EN PACIENTES SOMETIDOS A CIRURGIA DE BANDA GASTRICA AJUSTABLE</td>
<td></td>
<td></td>
</tr>
<tr>
<td>AJUSTE DE BANDA GASTRICA POR PARTE DE PERSONAL DE ENFERMERIA</td>
<td>C. Santamaria Hernandez, P. Anchustegui Melgarejo, J. Alvarez Alvarez</td>
<td>17</td>
</tr>
<tr>
<td>PRELIMINARY RESULTS OF THE LAPAROSCOPIC ADJUSTABLE GASTRIC BANDING</td>
<td>PM. Blanc, JM Lagoutte, MC Picot, E. Denève, C. De Seguin, JM Fabre, D.</td>
<td>18</td>
</tr>
<tr>
<td>PROCEDURE BY A NEW GENERATION OF SILICONE BAND : MIDBAND</td>
<td>Nocca</td>
<td></td>
</tr>
<tr>
<td>LAPAROSCOPIC ADJUSTABLE GASTRIC BANDING USING THE MIDBAND – 3 YEAR</td>
<td>S.A Norton, DB Hewin, AB Johnson, SE Bates, JDT Morgan</td>
<td>22</td>
</tr>
<tr>
<td>RESULTS</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
LAPAROSCOPIC GASTRIC BANDING: A GENERAL HOSPITAL EXPERIENCE OF 337 CASES WITH MIDBAND SOFT RING


MANAGEMENT OF GASTRIC BANDING IN BARIATRIC SURGERY: AN EXPERIENCE OF 7,000 PATIENTS

V. FRERING, E. FONTAUMARD, P. VICARD, Y. MAUSSIÈRE, S. BATES – Clinique de la Sauvegarde – Lyon – France........................................................................................................................................ 45

AMBULATORY LAPAROSCOPIC ADJUSTABLE GASTRIC BANDING A GENERAL HOSPITAL EXPERIENCE OF 160 CASES

M. HAMDAN, D. BERLEMONT, H. DE FRESNOYE – CHG – LAON – France............................................................................................................ 46

UK EXPERIENCE OF THE MIDBAND LAPAROSCOPIC ADJUSTABLE GASTRIC BAND IN 105 PATIENTS

SA NORTON, DF HEWIN, AB JOHNSON, SE BATES, L. SAWYER, S. BRENNAN, JDT MORGAN – SOUTHMEAD Hospital, Bristol, UK.............................................................................................................. 47

COMPARATIVE STUDY ON TYPE MIDBAND AND LAPBAND GASTROPLASTY BANDS

Dr. Pierre Campan, Hospital La Conception – Marseille - France............................................................................................................. 48

PRELIMINARY RESULTS OF THE LAPAROSCOPIC ADJUSTABLE PERIGASTRIC BANDING TECHNIQUE WITH MIDBAND RING.


A SIMPLIFIED LAPAROSCOPIC APPROACH WITH A NEW ADJUSTABLE GASTRIC BAND: IS A POUCH NECESSARY?

Hany Aly Nowara, M.D., FRCS. Professor Of Surgery, Cairo University.......................................................... 63

COMPLICATIONS AFTER ADJUSTABLE GASTRIC BANDING: HOW TO MANAGE THEM.

V. Frering, O. Bourdeix, P. Vicard. - Clinique de la Sauvegarde – Lyon - France..................................................... 64

HOW AND WHY ADJUSTABLE GASTRIC BANDING IS PROPOSED AS A FIRST APPROACH.

V. Frering, O. Bourdeix, P. Vicard. - Clinique de la Sauvegarde – Lyon - France - May 2003.............................. 65
Background:

Vertical banding gastroplasty is a very common procedure in bariatric surgery. High percentage of failure requires defining technical option for redo.

Methods:

From 1997 to 2007, 680 patients were referred following VBG. Out of them, 352 had failure or complication. All patients had multidisciplinary assessment. Endoscopic dilatation was proposed in 27 patients with stenosis before band removal. In case of VBG failure, Barium swallow was done: according to the results Gastric By Pass (GBP) was proposed in case of functional VBG, and laparoscopic adjustable gastric banding (AGB) was proposed for patients with initial good result and staple line or band disruption.

Results:

Out of 325 patients with failure, Gastric by-pass was proposed and achieved in 42, AGB proposed in 327 and achieved in 301. All failure during redo was related with postoperative adhesion. There were no postoperative complications after AGB. After GBP: 2 postoperative fistulas, and one occlusion, all reoperated.

Conclusion:

In case of VBG failure related with dismantling, AGB is safer, without VBG dislocation we proposed GBP.
LAPAROSCOPIC ADJUSTABLE GASTRIC BANDING USING THE MIDBAND – 4 YEARS RESULTS
Southmead Hospital, Bristol, UK

IFSO BUENOS AIRES – September 2008

Aims:
Laparoscopic adjustable gastric banding (LAGB) is an effective technique for the surgical treatment of morbid obesity but there remains concern regarding long term weight loss and complication rate. However, newer bands seem to have reduced complication rates. We present our 4 year experience with the use of MIDBAND.

Methods:
Between March 2004 and March 2008, 329 patients who fulfilled the NICE criteria have undergone LAGB in a single centre using the MIDBAND (Medical Innovation Developpement, Limonest, France). Close post-operative follow-up has been achieved in 99% of patients. Complication rate and weight loss have been prospectively recorded.

Results:
The age of patients ranged from 17-69 years (median 42) with a BMI between 35-78 (median 46). All patients underwent LAGB using a standardised technique with a median hospital stay of 1 day (range 1-10 days). 6 patients (1.8%) had post-operative dysphagia, 5 patients had minor wound infections and 2 required re-operation for early slippage. Late complications comprised 7 band removals for dilation or slippage (2.1%) and 3 bands and 4 ports were replaced. In total, re-operation was required in 4.3% of our patients. There was no mortality. Mean excess weight loss was 28%, 50%, 72% and 77% at 6, 12, 24 and 36 months respectively. Weight loss is maintained at 4 years in the small number of patients who have reached this milestone.

Conclusions:
Gastric banding using the MIDBAND can produce excellent excess weight loss which is well maintained beyond 3 years post surgery. It has a low complication and re-operation rate and should be considered as the first-line surgical procedure in the majority of patients with morbid obesity.
THE ADJUSTABLE MIDBAND GASTRIC SURGERY TO CORRECT THE VERTICAL SU TURE DEHISCENCE IN MASON’S GASTROPLASTY

C. Vassollo, G. Berbiglia, A. Della Valle, L. Negri
Surgery II, “Città di Pavia” Clinic, Pavia, Italy

IFSO BUENOS AIRES – September 2008

Background:

The vertical gastric band (V.G.B.) gastroplasy was in the Eighties the most frequently adopted kind. Its of surgery for the treatment of obesity, all over the world and particularly in the USA in both forms: Mason’s vertical suture and Mac Lean’s section-suture. The simple suture form is burdened, even after years, with a percentage of dehiscences going, according to the authors, from 0 to 25 per cent, with possible increase in weight.

Methods:

Since 1992 until 2001 we have been performing the Mason’s V.G.B., during the first five years with 9 cm long gastric pouch, then reduced to a 6 cm one during the following 5 years, trying to lower the percentage of vertical suture dehiscences, so going from 15% to 8% in the first 5 years after surgery. Of the 72 patients with dehiscence, 14 could stabilize their weight by means of a diet, while 16 underwent surgery again, with open Mac Lean’s section-suture technique, and the other 42 had an adjustable gastric midband, positioned in videolaparoscopy after removing the gore-tex band.

Results:

The 42 patients who underwent an adjustable band re-do behave, both from the point of view of weight loss and the diet compliance, as if they had surgery for the first time.

Conclusions:

The correction of the vertical suture dehiscence in Mason’s gastroplasty can be easily performed by means of an adjustable gastric band, positioned in videolaparoscopy.
Background:

Gastric banding is a very popular procedure in bariatric surgery in Europe. Although complications related to this procedure are currently well known, misplacement of the band is rarely reported in literature.

Methods:

During the past ten years, more than 7000 patients had gastric banding by our 2 bariatric units. Complications were prospectively collected and assessed. We retrospectively looked for band misplacement in our databases.

Results:

Band misplacement was demonstrated in 5 patients: the band had not enclosed the stomach but only the perigastric fat. In one patient the gastric banding had been performed elsewhere but the 4 others had been operated on in our 2 high volume centers where bands are placed using the pars flacida route. All patients had central morbid obesity including a large amount of visceral fat. During the follow-up, in spite of band inflation, neither restriction nor weight loss were observed. One patient experienced an additional dysphagia due to a compression related to the inflated misplaced band. Barium-enhanced upper gastrointestinal frontal radiograph looks correct in 4 of those 5 patients and misplaced ban was diagnosed only on barium swallow including lateral view. For the last patient, confirmation of the misplacement was obtained at the time of surgery. Reoperation included: band replacement in 3 patients, VBG in 1 and GBP in 1.

Conclusions:

Misplacement of the band can occur in patients with visceral adiposity, even in high volume centers. It must be suspected in patient without weight loss. Contrast swallow including lateral radiographs is the only ay to diagnose this rare complication.
PROSPECTIVE IMPEDANCEMETRY STUDY OF MIDBAND PATIENTS OVER 4 YEARS
P. Urbain
Polyclinique du Pac, Saint Saulve, France

IFSO BUENOS AIRES – September 2008

Background:

It is our goal as bariatric surgeons to assess the results in terms of weight loss and reduction of comorbidities but also to analyze the eating and exercise behavior on long term. This paper refers to patients follow up by bioelectric impedancemetry in order to determine the effects of MIDBAND adjustments on eating, food selection and fat mass.

Methods:

The patients receiving a MIDBAND for morbid obesity have their weight, BMI, Impedancemetry, eating habits and exercise activities recorded preoperatively and postoperatively at every band adjustment or visit (examination and questionnaire).

Results:

424 procedures were carried out laparoscopically with the MIDBAND from July 2003 to February 2008. The operative technique is the pars flacida route with seroserosal stitches. Adjustments are started at week 6 and every month when patients eats easily. # 1950 data are available for analysis, with a median of 4,6 data per patient.

The results are shown on table 1:

1. The impedance loss strictly correlates with the BMI loss. Some particular patient cases will be presented showing the effect of exercise at stable weight or the adverse effect of fat/sugar eating behaviour on fat mass index at stable weight.

2. The MIDBAND has good results with an average BMI loss of 13 at 5 years.

Conclusions:

The impedancemetry is useful for the follow-up of patients receiving the MIDBAND. It strictly correlates with the BMI loss and may replace the weight evaluation. It is a wonderful tool in pointing those patients who are becoming sweet eaters who should be addressed to the dietetic survey and counselling. It is a wonderful tool in encouraging the patients who are practising exercise and are following their fat/muscle mass.
Retrospective analysis of efficacy an complications of LAGB (MIDBAND soft ring) positioned on 1200 pz, according to IFSO criterions, from 2000 to 2008. Post-operatory check-ups also involved “clinical nutrition center of Pavia and focused on techniques to improve the efficacy and reduce complications.

Methods:

LAGB was positioned “pars flaccida” according to standard technique.
Mean operatory duration: 35 minutes (30-40)
Mean age: 40 yrs (18-64)
M/F ratio: 3/7
Mean pre-operatory BMI: 42.8 kg/M2 (31-59)
Check ups, performed by surgeons and when needed a nutritionist, included BMI %EBW %EWL, anthropometric, nutritional, psychological and functional reconstructive plastic surgery valuation and were scheduled at 3,6,12,18,24 mts.

Results:

Mean BMI: 3mts=40, 6 mts=37, 1 year=34, 18 months =33, 2 yrs=33, 3 yrs=29, 6 yrs=32kg/m2 (77% of the pz)
%EWL: 36mts=65% then settled at 60%
%EBW: initial =75% minimum at 36mts=22% then settled at 30%
Mortality = 0
Laparotomic conversions = 0
Gastric erosion = 3pz (solved with combined endo-laparoscopic technique)
Gastric pouch dilatation = 2 pz
Slippage = 2 pz
Removal of LAGB = 14pz
Improvement of related pathologies:
80% in pz with essential hypertension
77% in type 2 diabetics
70% in hyperuricaemics and hypertriglyceridemics
92% of OSAS and working skills

Conclusions:

Obtained results were better than literature ones because in the post-operatory check-ups the same physician managed either the surgical or the nutritional and psychological aspects and not only monitored weight changes, except for 31 “sweet eaters” pz which needed an additional support. Instead of WL the main target of adjustment of the band’s caliper was an improvement of cardiovascular and biochemical conditions, which resulted in better lifestyle and nutritional habits.
HOW TO SIMPLIFY GASTRIC BANDING
AFTER 7000 PROCEDURES

V. Frering, E. Fontaumard
Espace medico chirurgical de la Sauvegarde

IFSO BUENOS AIRES – September 2008

Background:

Gastric banding is a very useful procedure in bariatric surgery in Europe. Rate and type of complication related to this procedure are actually well known. Most of them are related with the operative procedure. Different way of proceeding was described. As the pars flaccida is well accepted actually, different technical points are still discussed.

Methods:

From 1997 to 2007, the same team operated more than 7000 patients on. Last year, 1200 patients had gastric banding with midband fitted by two surgeons. Same team, including surgeon, anaesthesiologist, psychiatrist and physician nutritionist, did all preoperative assessment. Patient was operated on according to IFSO Criteria. One-day surgery was proposed when conditions were available. Band used was MIDBAND for the last 4500 procedures. All procedure where done laparoscopically, even for redo after VBG. Are described installation, anaesthetic protocol, band placement and postoperative care. Difficult technical points during surgical procedures are enhanced.

Results:

There was no death. Mean operative time was 15mn. Mean hospitalisation time was 1.5 day. Most of complication was observed during learning curve. During last five years, out of 4500 procedures, postoperative complications were: 4 acute slippage, 2 band misplaced in the fat forward the stomach. There was no gastric perforation.

Conclusion:

Procedure described in standardized and can achieve safe procedure.
Background:

“Slippage”, or prolapse of the stomach through the band has been reported as a potentially life threatening complication of laparoscopic adjustable gastric banding (LAGB). The most significant reduction in slippage rate to 2% was reported after inserting the gastric band via the “Pars Flacida” route, as opposed to the previous perigastric position (20%). It is proposed that placement of an adjustable gastric band via the “pars flacida” approach, does not require the previously recommended suture/fixation, whilst still giving excellent outcomes with respect to slippage.

Methods:

Between July 2004 and December 2007, 98 consecutive LAGB’s were inserted by a single surgeon. All were Midbands and inserted using the pars flacida approach. In no patients were the bands sutured. Median age 42 (range 23-63), Median BMI 49 (range 34-70), Median length of stay <12 hours (range 0-2 nights).

Results:

No slippages have occurred to date. Mean % EWL at 6,12,18,24,30,36 months are 23,35,42,52,45,40. There were no occurrences of gastric erosions or gastric injuries.

Complications: 5 bands have been removed, 1 for misplacement, 3 for intolerance (patient factors) and for dysphagia secondary to fibrosis at the band site.

Conclusions:

Using the MIDBAND, we do not feel that it is necessary to suture or fixate the band in place following insertion. This does not increase the rate of slippage, nor does it affect the results of weight loss.
PROSPECTIVE RANDOMIZED STUDY COMPARING THE MIDBAND AND THE SWEDISH ADJUSTABLE GASTRIC BAND IN LAPAROSCOPIC ADJUSTABLE GASTRIC BANDING

P. Espalieu, G. Poncet, M. Robert, A. Hallaj, J. Boulez
Hopital Edouard Herriot. Service de chirurgie digestive, pavillon D4. Place d’Arsonval, Lyon, France

IFSO BUENOS AIRES – September 2008

Material & Methods

- 200 patients (168F-32M), operated by the same Surgeon (Dr Philippe ESPALIEU), Standardized Pars Flaccida Technique
- Follow-Up at 1/3/6/9/12 Months, 2 ; 3 ; 4 ; 5 Years.

**MIDBAND™**

Mean BMI: 41.3 (35-61), 18% Sweat Eaters
Mean Age: 35.5 (21-63), 78% Female
EWL: 6M = 30%; 12M = 45%; 24M = 55%
Operating Time: 58mn (38-120)
Adjustments at 1 Year: 1.77 (0-4)
Hospital Stay: 1.76 Day
Baros > 20: 82%

Complications:
- 2 Erosions
- 2 Pouch Dilatation
- 2 Port Problems
- 1 Removal / Poor Patient Comfort

**S.A.G.B.**

Mean BMI: 40.7 (35-63), 23% Sweat Eaters
Mean Age: 35.6 (18-63), 86% Female
EWL: 6M = 28%; 12M = 43%; 24M = 48%
Operating Time: 65mn (23-145)
Adjustments at 1 Year: 1.94 (0-9)
Hospital Stay: 1.68 Day
Baros > 20: 77,5%

Complications:
- 1 Erosion
- 2 Pouch Dilatation
- 1 Port Problem
- 1 Removal / Poor Patient Comfort
- 1 Band Leakage
- 1 Sepsis

Conclusions

- Results are Similar to other Clinical Studies
- Very Low Morbidity Rate
- EWL: 45 to 55 %
- NO Significant Differences between MIDBAND & S.A.G.B.
- Need for further follow-up to appreciate long-term results
Working with the MIDBAND and compared with other bands we found that the MIDBAND has a lesser inflammatory reaction, being this the case we were able to reposition a band to it’s proper location as well as open the band with no complication. This procedure was done in a 27 year old female. She has had the MIDBAND for 2 years. Shortly after this the patient became pregnant and due to morning sickness and other medication the patient had to take caused the band to slip. We diagnosed the patient with a chronic band slippage. We unfilled the patients band to see if this would relive her of some of her symptoms that where caused by the band slippage. This did not. We then did an endoscopy on the patient, the results were that the patient stomach formed 2 pouches because of this would have trouble digesting food and caused her to vomit at night. We then proceeded to do a laparoscopy on the patient we where able to reuse the patients band, due to the fact that there was no inflammatory findings. The patient notices the changes immediately. She was able to drink liquids at night and had no reaction. She did not vomit or have any acid build up. Patient feels fine and is able to return to her daily activities with no limitation.
MEDIDAS INTRAOPERATORIAS PARA DISMINUIR LA INCIDENCIA DE INFECCION DEL PUERTO EN PACIENTES SOMETIDOS A CIRUGIA DE BANDA GASTRICA AJUSTABLE (RESULTADOS PRELIMINARES)

¿DISMINUYE EL RIESGO DE INFECCION EL CAMBIO DE GUANTE QUIRURGICO DE CIRUJANO E INSTRUMENTISTA EN LA MANIPULACION DEL RESERVORIO GASTRICO?

ESTUDIO CON 46 PACIENTES (NOV-06 A MAY-06)
IMC medio 44.2, MEDIA 120 KILOS, REALIZADO POR MISMO EQUIPO QUIRURGICO.
DOS GRUPOS:
1º 22 PACIENTES, SIN ESTABLECER NINGUNA MEDIDA EXTRAORDINARIA EN EL PROCEDIMIENTO DE INSTRUMENTACION
2º 24 PACIENTES CON SUSTITUCION DE GUANTES POR INSTRUMENTISTA Y CIRUJANO EN DOS OCASIONES
A) PREVIA MANIPULACION DE BANDA GASTRICA
B) AL IMPLANTAR EL RESERVORIO SUBCUTANEO

RESULTADOS

DOS INFECCIONES DE RESERVORIO, AMBOS DEL GRUPO EN EL QUE NO SE REALIZO CAMBIO DE GUANTES (comprobado mediante cultivo), UNO EVOLUCIONO FAVORABLEMENTE CON ANTIBIOTERAPIA DIRIGIDA Y OTRO HUBO QUE REALIZAR SUSTITUCION DEL RESERVORIO.

AUNQUE EL NUMERO DE CASOS NO ES MUY VALORABLE ESTADISTICAMENTE, LOS RESULTADOS OBTENIDOS NOS ANIMAN A ACONSEJAR EL CAMBIO DE GUANTES EN LA MANIPULACION DE LA PROTESIS Y EL RESERVORIO SUBCUTANEO PARA DISMINUIR EL RIESGO DE INFECCION

CONCLUSIONES

- C. SANTAMARIA HERNANDEZ
  Enfermera instrumentista
- P. ANCHUSTEGUI MELGAREJO
  Jefe de Departamento
- J. ALVAREZ ALVAREZ
  Medico Adjunto

Hospital de La Zarzuela, Dpto de Cirugia General.
Unidad de Obesidad Morbida, MADRID
**BANDA GASTRICA AJUSTABLE – ES IMPORTANTE FIJAR EL RESERVORIO?**

**SECO Congress – Avril 2008**

---

**ANÁLISIS DE LA FACILIDAD PARA ACCEDER AL RESERVORIO UTILIZANDO DISTINTOS SISTEMAS DE FIJACIÓN DEL MISMO**

**ESTUDIO SOBRE 60 PACIENTES ENTRE ENE-DIC’06. IMC MÉDIO 44.1 Y PESO MÉDIO 120.9 KG. TODAS LAS INTERVENCIONES REALIZADAS POR EL MISMO EQUIPO Y TODOS LOS AJUSTES POR LA MISMA PERSONA. SE REALIZARON 3 GRUPOS:**

1. 20 pacientes—Implante subcutáneo con dos puntos de fijación con vicryl 2/0.
2. 20 pacientes—Implante sobre aponeurosis de recto anterior sin fijar.
3. 20 pacientes—Implante subcutáneo sin fijación.

- HUBO QUE REALIZAR DOS INTERVENCIONES PARA LOCALIZAR Y RECOLOCAR EL RESERVORIO. (GRUPO 2 Y 3)

- 5 PACIENTES PRECISARON CONTROL RX PARA AJUSTAR EL RESERVORIO (2 DEL GRUPO 3 Y 6 DEL GRUPO 2).

- 10 PRECISARON MAS DE 3 PUNCIONES PARA RELIZAR EL AJUSTE (3, TERCER GRUPO, 6, SEGUNDO Y 1 DEL PRIMERO)

- EN 42 PACIENTES, NO HUBO DIFICULTAD DE LOCALIZACIÓN (19 DEL GRUPO 1; 10 DEL GRUPO 2; 13 DEL GRUPO 3)

---

**RESULTADOS**

**CONCLUSIONES**

EN NUESTRA EXPERIENCIA, LA LOCALIZACIÓN SUBCUTÁNEA Y CON FIJACIÓN DEL RESERVORIO PERMITIEJE MEJOR MANIPULACIÓN DEL MISMO Y HACE MÁS FÁCIL LA REALIZACIÓN DE LOS AJUSTES DE BANDA

- **C. SANTAMARIA HERNANDEZ**
  Enfermera instrumentista
- **P. ANCHUSTEGUI MELGAREJO**
  Jefe de Departamento
- **J. ALVAREZ ALVAREZ**
  Medico Adjunto

Hospitale de La Zarzuela, Dpto de Cirugía General. Unidad de Obesidad Mórbida. MADRID
AJUSTE DE BANDA GASTRICA POR PARTE DE PERSONAL DE ENFERMERIA

20 PACIENTES OPERADOS POR ELMISMO EQUIPO QUIRURGICO (ABRIL-JUNIO ’07), AJUSTADOS POR ENFERMERIA. IMC MEDIO 42,8. MEDIA 117,3 KG. AJUSTE REALIZADO BAJO CONTROL RX, PASO FI-LIFORME Y RETARDADO A CAMARA GASTRICA. COMPARADO CON GRUPO HOMOGENEO AJUSTADO POR PERSONAL MEDICO.

SE ESTUDIO:
1. DIFICULTAD DE DEGLUCION POST-AJUSTE
2. PERDIDA DE PESO
3. N° DE PUNCIONES

EN UNA UNIDAD BIEN ESTRUCTURADA, EL PERSONAL DE ENFERMERIA ADECUADAMENTE ENTRENADO, PUEDE REALIZAR EL AJUSTE DE BANDA CON LOS MISMOS CRITERIOS DE CALIDAD Y LA MISMA EFICACIA QUE EL PERSONAL MEDICO.

CONCLUSIONES

- C. SANTAMARIA HERNANDEZ
  Enfermera instrumentista
- P. ANCHUSTEGUI MELGAREJO
  Jefe de Departamento
- J. ALVAREZ ALVAREZ
  Medico Adjunto

Hospitl de La Zarzuela, Dpto. de Cirugia General.
Unidad de Obesidad Morbida, MADRID
Preliminary Results of the Laparoscopic Adjustable Gastric Banding Procedure by a New Generation of Silicone Band: MIBAND

P. M. Blanc • J. M. Lagoute • M. C. Picot • E. Denaive • C. de Seguin • J. M. Fabre • D. Nocca

Obesity Surgery  – Avril 2008

Abstract

Background The surgical treatment of morbid obesity by laparoscopic adjustable gastric banding has become a "gold standard" in Europe. Currently, five types of silicone bands are used in the majority of centers performing bariatric surgery.

Methods The MIBAND® was introduced to the European market in 2000. It is placed around the stomach using the Paris Plaçida technique described by Forerl. A prospective multicenter study on 113 cases was carried out to evaluate technical feasibility, complications, and the midterm weight loss outcomes (2 years).

Results The percentage of excess body weight loss was 52.5% at 2 years. Perioperative mortality was nil and the complication rate was low (slippage <2%).

Conclusion These encouraging results require long-term studies to validate this procedure.

Keywords Obesity surgery • Adjustable gastric banding

Introduction

The first procedure of laparoscopic adjustable gastric banding (LAGB) was described in 1993 by Dr. Bolachew [1]. This procedure adopted the perigastric technique invented by Dr. Kazmaier in the 1960s using laparoscopy [2]. The encouraging results of this procedure, associated with the advent of laparoscopic techniques, led to the current popularity of this operation in Europe. Since 1993, technical improvements have appeared to decrease the postoperative complication rate. The first of these improvements is positioning the band by the Paris Plaçida technique. This technique, now widely accepted, limits the rate of slippage of the band, as well as the risk of perigastric complications [3]. Various LAGBs have been introduced to the medical market. The MIBAND® (Fig. 1) is a very flexible adjustable gastric band (AGB) that has low pressure, and it is positioned using the Paris Plaçida technique. Our study proposes to evaluate the midterm results of the MIBAND® and will analyze the percentage of excess body weight loss (EBWL) at 2 years postoperatively together with the complications associated with this procedure.

Population—Method

From February 2001 to November 2002, 113 patients underwent a LAGB with MIBAND® in four bariatric surgical teams (six surgeons, acknowledged to be expert in laparoscopic procedures). The study population comprised of 59 women and 14 men, a mean age of 38.66 years and mean BMI of 42.91 kg/m² (25.7-50). Patient selection was based on the NIH consensus (1991).
A multidisciplinary assessment was undertaken preoperatively to exclude possible contraindications to surgery.

Technique

The surgical procedure was standardized between the six surgeons. Briefly, following general anesthesia, the patient was placed in a supine position. The laparoscopic procedure was performed using five operative ports positioned in the upper abdomen. The first step consisted of locating and releasing the left pillar. A small opening was made in Para Flanoedia towards the gastroepiploic ligament, thus allowing location of the right pillar. A narrow passage was thus created above the lesser sac in the gastrophrenic ligament at the angle of His (Fig. 2). The AGB, introduced using a 12-mm port, was then positioned around the stomach.

The band was closed below a small calibration balloon, which had been inflated (20 cm\(^2\)) in the stomach (Fig. 3). The anterior part of the band was covered using gastro-gastric sutures to minimize the risk of slippage (Fig. 4). The reservoir was positioned in the subcutaneous fat in the left upper abdominal quadrant. Postoperative prophylactic anticoagulation therapy (low-molecular-weight heparin) was commenced on the evening of surgery. Gastrografin screening (day 1) was done to eliminate leak or gastric outlet obstruction. A liquid diet was commenced on day 2, followed by the gradual introduction of a sloppy and soft diet. Patients were discharged on the second or third postoperative day in the absence of complications and were subsequently followed postoperatively at 1, 3, 6, 12, 18, and 24 months in the outpatient clinic. At each visit, a physical examination was performed, the BMI calculated, and the presence of abnormal symptoms investigated.
The inflation of the band was determined by weight-loss and carried out under x-ray control. In the event of food intolerance, frequent vomiting, epigastric pain, or bleeding, the patient was asked to contact the surgical team immediately for suitable management and investigation. In the event of band slippage, pouch dilatation, or significant esophageal dilatation, the band was partially or totally deflated.

Description of the Adjustable Gastric MIDBAND™

This AGB is distinctive by its great flexibility. The silicone band measures 11 cm in length and 2 cm in width. It is impossible to stretch and has no a sharp edges or ridges. The original mode of closure (Fig. 1) allows easy placement with no additional sutures required. Furthermore, this AGB is completely radio-opaque. It is recommended not to exceed 9 cm³ of solution for band adjustment. In 2002, this band was used in an experimental animal study for the calibration of laparoscopic gastric bypass, with interesting results [4].

Results

The perioperative mortality and conversion rate were nil. The average hospital stay was 2.50 days. %EBWL was 12.48% (1 month), 28.31% (6 months), 42.28% (12 months), 49.78% (18 months), and 52.58% (24 months) (65 patients). The changes in BMI were 40.21 kg/m² (1 month), 36.93 kg/m² (6 months), 33.90 kg/m² (12 months), 32.20 kg/m² (18 months), and 31.69 kg/m² (24 months).

Postoperative Complications

Postoperative complications were as follows:

- Three cases of dilation of the gastric pouch (2.64%) managed by total deflation of the band.
- Two cases of acute slippage (1.76%) managed by removal of the band.
- Three cases of intragastric migration (2.64%). All the bands were removed laparoscopically.
- Two cases of reservoir rotation (1.76%) required a surgical rectifying under local anesthesia.
- One case of leaking catheter (0.88%).
- One case of bolus obstruction (0.88%) requiring Endoscopic intervention.
- Four cases of dysphagia (3.52%) treated by partial deflation of the band. No achalasia has been noted in the radiological examination.
- Five cases of GERD disease (4.40%) treated with proton pump inhibitor.

Discussion

The aim of the bariatric surgery using LAGB is to use a minimally invasive technique with low mortality associated with safe and effective long-term outcomes. In terms of efficacy, our midterm results are comparable with previous prospective data that report an average %EBWL of up to 50% at 2 years postoperatively [3, 5–8, 13, 17].

Few trials have been published that compare various AGBs. Studies comparing the LapBand™ with the SAGB™ were carried out but found few significant differences in terms of weight loss [9–11]. The success of the LAGB procedure appears primarily to be subject to adequate preoperative patient selection and suitable information relating to dietary change as opposed to any specific AGB characteristics. However, the morbidity of this procedure may be decreased by using bands that allow use of the Pars Flacida technique.

Among the postoperative complications, band slippage is the most significant that can affect the patient outcomes, either by necrosis of the gastric wall or by the medical repercussions of food intolerance. In our trial, the dilation rate was 2.64% and slippage rate was 1.76%. These results are similar to previously published literature where the reported mean pouch dilation is 6% (2–12.2%) and the mean slippage rate is 3% [5–8]. However, Weiner [12] and Noeck [10] report percentages higher than 20%, and these are in cases where the perigastric approach was used. The low-pressure AGBs (e.g., SAGB™ and MIDBAND™) may decrease this complication rate, but no randomized study has been carried out to prove it [11]. In a comparative study between LapBand™ and SAGB™ (40 patients), Zimmerman has found, after 3 years, four cases of dilatation slippage with LapBand™ and zero with SAGB™ [9]. Fening reported a slip rate of 4.1% with LapBand™ and 0% with SAGB™ [11]. However, Favretti [8], in a study population of 890 patients (operated on by perigastric technique) with a 5-year follow up, reported a 2% slippage rate. It was, however, specified that the AGB was positioned very high on the stomach to obtain a "virtual" pouch.

Another advantage of the Pars Flacida technique is the decreased risk of gastric perforation due to the dissection in the gastroplenic ligament and not directly close to the gastric wall [14]. That is the reason why we do not have this complication in our experience with MIDBAND.

In our study, AGB migration rate is 1.76%. Migration is a severe complication of the LAGB procedure and leads to a progressive loss of function and possible further complications including, for example, upper GI bleeding or intestinal obstruction [18]. Literature reports band migration rate ranges from 0% to 11% according to the length and modality of the follow up. An AGB migration rate above
10% was reported in series where hand inflation exceeded the maximum total volume recommended by the manufacturer [15]. In a prospective study, Sallachea proposed a systematic gastrointestinal endoscopy to detect the erosion [16]. The migration rate was 7.5%, and the follow up at 3 years was 24%. One may hypothesize that the true rate of migration was underestimated. No comparative studies have demonstrated that the rate of migration was increased with one type of band. The common opinion is to use a large, smooth, and flexible band with a balloon, allowing an even pressure distribution on the gastric wall (as with SAGB® and MIDBAND®). However, the migration risk according to pressure of an AGB has never been scientifically assessed.

Other problems relating to the catheter and the reservoir are deemed more awkward than serious. The cases of reservoir rotation were easily rectified using local anaesthesia. Port fixation to the muscle fascia by nonabsorbable sutures does not seem to be a determining factor in avoiding rotation. The appearance of GERD or vomiting is usually the result of inappropriate food intake and nonadapted dietary habits that are necessary when living with a smaller gastric pouch. Patient information seems to be the crucial factor in decreasing the frequency of GERD and vomiting.

Conclusion

The LAGB procedure is, without any doubt, the simplest bariatric operation offered to patients to lose weight. The results of our preliminary study using the MIDBAND® shows that efficiency and %EBWL outcome is similar to other classical bands. Morbidity was reduced by using the Pars Flaccida technique. Long-term evaluation is needed to confirm these results.

References

AIMS:
Laparoscopic adjustable gastric banding (LAGB) is an effective technique for the surgical treatment of morbid obesity but there is concern regarding long term weight loss and complication rate. We present our 3 year experience with the use of the MIDband in 280 patients.

METHODS:
Between March 2004 and May 2007, 280 patients who fulfilled the NICE criteria have undergone LAGB using the MIDband (Medical Innovation Developpement, Limonest, France). All patients underwent full pre-operative MDT assessment and close post-operative follow-up has been achieved in 99% of patients over 1-36 months.

RESULTS:
The age of patients ranged from 21-69 years (median 42) with a BMI between 35-78 (median 44). All patients underwent LAGB using a standardised technique with a median hospital stay of 1 day (range 1-10 days). 5 patients (1.8%) had post-operative dysphagia, 5 patients had minor wound infections and 2 required re-operation for early slippage. Late complications comprised 5 band removals for dilation or slipped and 2 bands and 2 ports were replaced. Total re-operation rate was 4%. There was no mortality. Mean excess weight loss was 27%, 47%, 71% and 79% at 6, 12, 24 and 36 months respectively.

CONCLUSIONS:
Gastric banding using the MIDband can produce excellent excess weight loss with a low complication and re-operation rate. It should be considered as the first-line surgical procedure in the majority of patients with morbid obesity.
A RANDOMIZED COMPARISON OF TWO LOW-PRESSURE ADJUSTABLE BANDS IN THE TREATMENT OF MORBID OBESITY

A.Vogel, C.J. Slotboom, N.P.M. Reijnen

Obesity Centre Emmen, The Netherlands, Leveste Scheper Hospital

IFSO CONGRESS – Porto – Portugal – September 2007

Background:

Laparoscopic gastric banding is a frequently used operation in the treatment of morbid obesity. Many types of adjustable gastric bands (AGB) have been used during the last few years. The aim of this study was to compare two bands used in our hospital.

Methods:

Two groups of patients treated with an AGB were analyzed in a randomized setting. Group A consisted of 70 patients who were treated with a Midband and group B consisted of 78 patients who received a Quick Closeband. The whole study group consisted of 24 men and 124 women, mean age 39.6 years (18-66) and a mean BMI of 44.9 (35-61), which was the same for both groups.

Results:

At 6, 12 and 18 months after surgery, percentage of excess weight loss (% EWL) was 33.4%, 47.0% and 52.7% in group A versus 33.6%, 45.5% and 47.0% in group B, respectively. Comparison between the two groups did not show a significant difference in %EWL.

The mean number of adjustments to the bands in the first 12 months and 18 months was, respectively, 2.5 and 3.4 in group A versus 3.1 and 3.9 times in group B. For both periods, no statistical difference was found between the groups.

In 4 patients from group A and 3 from group B, the port got dislocated. In group B, leakage was observed 2 times and slippage of the band 3 times. However, this was not significantly different.

Conclusion:

The two adjustable bands do not seem to be superior or inferior with respect to each other in clinical usage.
RESULTS WITH GASTRIC BANDING IN SUPER OBESE TREATMENT

V.frering, E. Fontaumard, Yann Matussière, P. Vicard
Espace medico-chirurgical de la Sauvegarde, - Lyon - France
www.chirurgien-digestif.com

IFSO CONGRESS – Porto – Portugal – September 2007

Background:
Mortality and morbidity in high-risk super-obese patients is a main concern in bariatric surgery. BMI over 50 is considered as an independent variable for mortality. One of current solution proposed is vertical gastrectomy as a first stage before gastric bypass or duodenal switch to reduce the complication rate. We report our management with gastric banding in 421 patients with BMI > 50 kg/m²

Methods:
From 1997 to 2006, 5,838 patients had gastric banding by the same surgical team. Out of them, 429 (7.3%) had BMI over 50. There were 334 Female and 95 Male from 16 to 67 years old (40.15 ± 11.17). Mean BMI was 55.83 ± 5.44 from 50 to 84.8 kg/m². Gastric banding used were Lapband in 54, SAGB in 95 and Midband in 280.

Results:
There were no deaths. Hospitalization length 48h occurred in 9 patients. Gastric band was removed in 16 patients (3%) – 6 because of slipping, 5 on patient request and 5 because of intragastric migration. Band was changed in 5 cases because of leakage on SAGB band. Gastric bypass was done in 5 because of inadequate weight loss and sleeve gastrectomy in one. Port site was changed in 6 because of leakage with Lapband. Year 0 1 2 3 4 5 > 5 Mean BMI ±SD 55.84 ± 5.45 47.75±6.65 39.55±8.91 36.04±9.03 33.30±7.05 35.38±7.6 28.6±6.61.9.7% are lost of follow-up.

Conclusion:
Among different bariatric procedures and according to safety and excellent results, gastric banding is our first choice for super-obese.
DOES STITCHING BAND INCREASE SLIPPING?

V. Frering, E. Fontaumard, P. Vicard

Espace medico-chirurgical de la Sauvegarde, - Lyon - France
www.chirurgien-digestif.com

IFSO CONGRESS – Porto – Portugal – September 2007

INTRODUCTION
Among different procedures carried out in bariatric surgery, gastric banding is useful in Europe. Slipping is a usual complication. Opinions on etiology remain divided. Are quoted the procedure perigastric or pars flaccida, the type of the band. Stitching the band remains a commonly allowed attitude as a prevention of the slippage. Redo surgery or switching to gastric by pass remain more difficult with a band stitched. Aim of this work was to evaluate the interest of stitching the band.

MATERIEL METHODS:
From 1997 to 2006, 5838 patients had gastric banding provided by the same team. Historically were set up lapband (868), SAGB (1386) and Midband (3584). In this historical prospective cohort were study only Midband to isolate the studied variable as much as possible and avoid interfering with the type of band and the way initially. Bands were placed with pars flaccida technique and were inflated under radiological control only 2 months after. Follow-up comprises band adjustment on patient request and every six months consultation. The statistical study on two qualitative variables was carried out with a test Khi 2.

RESULTS
There were no post operative death

<table>
<thead>
<tr>
<th></th>
<th>Slippage</th>
<th>No slippage</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stitched</td>
<td>64 (3%)</td>
<td>2001</td>
<td>2065</td>
</tr>
<tr>
<td>unstitched</td>
<td>18 (1%)</td>
<td>1501</td>
<td>1519</td>
</tr>
<tr>
<td>Total</td>
<td>82</td>
<td>3502</td>
<td>3584</td>
</tr>
</tbody>
</table>

Khi 2 : P=0,0001

TREATMENT was : removal (46), gastric By pass (15) or replacement (21). In 8 patients replacement was done before switching to GBP. Three patients had acute slippage within 3 days after surgery. Mean time for slippage was 29±10 Months.

CONCLUSION
The results of this study show that stitching increases the risk of slippage.
ADJUSTABLE GASTRIC BAND IN THE MANAGEMENT OF MORBID OBESITY: OUR EXPERIENCE IN 1445 PATIENTS

A. GIOVANELLY, R. SACCO, L. BERTOLANI, R. BONFANTI, A. CENTURELLI

Clinic Humanitas GAVAZZENI, Bergamo, Italy

www.gavazzeni.it

IFSO CONGRESS – Porto – Portugal – September 2007

Complications:

• Death (30 days after) 0.10% (acute heart stroke);
  • Pouch dilatation 6.0%,
  • Erosion/intragastric migration 2.7%;
    • Slippage 0.17%;
    • Port injuries 1.3%;

  • Gerd and oesophagitis 4.5% (2 years later):
    • Leakage 2%

  5.7% of band removed
  (2.7% erosion/migration, 1.1% pouch dilatation, 1.9% personal problems).

Conclusions:

BGR is the surgical choice in morbid obese patients with good compliance for dietological and life-style changes. A careful monitoring by a multidisciplinary team of surgeons, dieticians and psychologists is necessary for the best results. Our experience in using BGR applied to superobese, procedure-acknowledged and psychologically controlled patients, shown good results and may be a step in the treatment. Minimvasive surgery like BGR, associated with pharmacological treatment in control of comorbidities should be considered a good choice in metabolic syndrome.
WHAT HAPPENS IN CASE OF FAILURE OF GASTRIC BANDING?

Although safe and reliable for morbid obesity treatment, gastroplasty, when it fails, raises the question of the patients' long-term evolution and of the treatment to recommend in case of gastric banding intolerance or weight gain.

Material and methods

From 1997 to 2006, 5838 patients had gastric banding. Among them, 401 (6.8%) had to be operated again for gastric band removal. (42 males and 359 females aged 20 to 67) (36,41 +/- 9,71).

Mean BMI was 41,2 kg/m2 before surgery and 31,4 kg/m2 when the band was removed. In 259 cases, high pressure bands were used, and in 142 cases, low pressure bands.

Results

The bands were removed because of slipping (179) (44.6%), at patient's request (62, 15.4%), because of intragastric migration (60) (14.9%), food intolerance (44) (10.9%), reflux (24) (6%), leakage (20) (4.4%), intraabdominal infection (8) (2%) and no weight loss (2) (0.5%).

There was no follow-up for 12.4% of the patients. 1 died of gastric cancer. 152 had a second surgery because they had gained weight again after banding removal (37.9%): 1 sleeve gastrectomy after gastric by-pass failure, 60 gastric by-passes and 91 repeated gastric bands.

Among the latter, 13 (14.3%) were operated again for gastric band removal: slipping (5), intragastric migration (3), reflux (2), weight gain (2), gastric cancer (1).

Conclusion

While gastric banding remains our favourite procedure for a first bariatric treatment, we think that in case of failure, a new gastric band is not to be recommended and gastric by-pass has to be favoured.
TWO YEAR MONTHLY FOLLOW UP OF 266 PATIENTS WITH MORBID OBESITY AND ADJUSTABLE MID GASTRIC BAND (AGB)

A. Anagnostides, D. Dandakis, I. Tyrmpas, D. Tsantzalos, A. Kordonis, G. Stavropoulos, P. Kotsopoulos
Department of Severe Obesity, IASO GENERAL Hospital, Athens, Greece

BACKGROUND
AGB is a safe and established method for normalising appetite/satiety and thus reducing body weight in morbid obesity (1st IFSO CONGRESS 1995).

Appropriate band, frequent follow up and adjusting according to patients compliance enhances the results

METHODS
266 patients
91 male 175 female
Mean age: 39.43 (range: 18.08-75.53 years)
Initial mean body weight: 125.1 kg (range: 85-240)
BMI: 40.72 (range: 35-58)
MIDBAND® is circular, soft, flexible, compliant, 2cm width, 25 kg breaking point and low pressure system band.
MIDBAND® from MI D was applied laparoscopically.
The patients were under monthly follow up for 2 years monitoring body weight and other parameters. Adjustments were done only when the patients achieved compliance to the instructions according to our criteria.

RESULTS
Mean duration of hospitalization: 1.05 days.
There were 2 patients who developed atelectasia and one minor pulmonary embolism.
Average number of visits: 9 and 6 in the first and second year respectively.
Average numbers of adjustments: 6 and 3 in the first and second year respectively.
There was no migration or slippage of the band or severe dilatation of the pouch.
One band was unlocked in 2 ½ years.
One band had an unspecified leakage.

Table 1: Reduction of BW, BMI and %EWL

<table>
<thead>
<tr>
<th></th>
<th>6 months</th>
<th>12 months</th>
<th>24 months</th>
</tr>
</thead>
<tbody>
<tr>
<td>Body Weight Loss (kg)</td>
<td>18.63</td>
<td>39.32</td>
<td>59.50</td>
</tr>
<tr>
<td>BMI reduction</td>
<td>6.14</td>
<td>13.17</td>
<td>19.81</td>
</tr>
<tr>
<td>% Excess Weight Loss</td>
<td>33.30</td>
<td>64.34</td>
<td>85.13</td>
</tr>
</tbody>
</table>

CONCLUSIONS
✓ Using appropriate flexible, wide band
✓ Low pressure system
✓ Regular follow up and
✓ Adjustments only after the patients compliance
gives excellent results in normalising appetite/satiety and loss of excessive body weight in morbid obesity.
Fixation of the Access-Port is Not Required in Gastric Banding

(1) Department of Upper Gastrointestinal and Laparoscopic Surgery, Southmead Hospital, Bristol, UK
(2) Department of General Surgery, Gloucestershire Royal Hospital, Gloucester, UK
(3) Centre de Consultations Spécialisées de la Sauvegarde, Lyon, France
(4) Department of Upper GI Surgery, Southmead Hospital, North Bristol NHS Trust, Bristol, BS10 5NB, United Kingdom

Received: 22 December 2006  Accepted: 9 January 2007  Published online: 11 May 2007

Background: Laparoscopic adjustable gastric banding (LAGB) is increasingly performed in patients with morbid obesity. Suturing of the access-port in LAGB can be difficult and time consuming but is felt necessary by many surgeons to prevent migration and facilitate band adjustments.

Methods: Between 2003 and 2006, 226 patients underwent LAGB with the MIDband®. All surgery was performed by the pars flaccida approach. The access-port was positioned in a subcutaneous pouch adjacent to the left hypochondrial port site and was not secured. Regular follow-up and band fills were offered. All band or port-related complications were duly recorded. A patient satisfaction survey was also conducted among 50 randomly selected post-banding patients.

Results: Mean age was 41.65 years (range 18–73 years) and mean BMI was 45.85 kg/m² (range 34.0–74.93 kg/m²). The access-port was inaccessible at first attempt in 5 (2%) patients. 4 of these required radiological imaging to identify the port orientation and 1 required multiple attempts at port puncture with subsequent re-operation due to tube puncture. 91% of patients reported no significant trouble other than mild discomfort and prominence of the port.

Conclusion: This study shows non-fixation of the access-port to be safe and effective with good patient acceptability. In addition, it avoids the need for regular X-ray localization of the port.

Key words  Morbid obesity - gastric banding - bariatric surgery - weight reduction
Among bariatric procedures, Gastric Banding is the most used in France.
• Slippage is common with gastric banding and etiology is still discussed.
• Stitching the band is recommended by most of the surgeons.
• Stitched bands can increase difficulties for redo surgery.
• Aim of this work was to assess the interest of stitching the band.

Hypothesis:

Background:

<table>
<thead>
<tr>
<th></th>
<th>n</th>
<th>Slippage – Dilatation</th>
<th>Removal / slippage</th>
<th>Removal / erosion</th>
<th>Miscellaneous</th>
<th>Re operation</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>LAPband</td>
<td>868</td>
<td>109 (12.5%)</td>
<td>107 (12.3%)</td>
<td>9 (1%)</td>
<td>1</td>
<td>117 (14.4%)</td>
<td></td>
</tr>
<tr>
<td>SAGB</td>
<td>1386</td>
<td>44 (3.1%)</td>
<td>10 (0.7%)</td>
<td>27 (1.9%)</td>
<td>5</td>
<td>42 (3%)</td>
<td></td>
</tr>
<tr>
<td>MIDband</td>
<td>1765</td>
<td>30 (1.7%)</td>
<td>11 (0.6%)</td>
<td>1 (&lt;0.1%)</td>
<td>1</td>
<td>13 (0.7%)</td>
<td></td>
</tr>
</tbody>
</table>
Materiel Methods

- From 1997 to 2006: 5838 patients had adjustable gastric band by the same team.
- This study is historic cohort on 3584 patients who had Midband.
- All band were placed by pars Flaccida approach, and were filled 2 months after procedure.

Stitch group : N = 2065

No stitch group : N = 1519

Follow up : Filling on patient requirement
Every 6 month, examination by team physician

Statistical analysis Khi 2

Results

<table>
<thead>
<tr>
<th></th>
<th>Slippage</th>
<th>No Slippage</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stitch</td>
<td>64 (3%)</td>
<td>2001</td>
<td>2065</td>
</tr>
<tr>
<td>No Stitch</td>
<td>18 (1%)</td>
<td>1501</td>
<td>1519</td>
</tr>
<tr>
<td>Total</td>
<td>82</td>
<td>3502</td>
<td>3584</td>
</tr>
</tbody>
</table>

Khi 2 : p<0.0001

Treatment:

Removal : N = 46
Gastric By-Pass : N = 15
Replacement : N = 21 (8 patients had replacement before removal or gastric by pass)

3 patients in no stitch group had acute slippage 3 days after surgery.
Mean time for slippage 29 ± 10 months

Conclusion

This study is not randomised, but we observed a difference to avoid stitching.
Lack of stitching will not disturb furtherer procedure like gastric by pass and can be proposed as a first step of obesity control.
Parmi les interventions réalisées en chirurgie bariatrique, l’anneau gastrique ajustable est la plus utilisée en France. Le glissement de l’anneau est une complication fréquente. Les avis sur l’étiologie restent partagés. Sont cités la voie d’abord, périgastrique ou dite de la « pars flaccida », le type d’anneau. La fixation de l’anneau reste une attitude communément admise en guise de prévention du glissement. La fixation est un facteur de difficulté pour toute reprise ultérieure que ce soit pour l’ablation ou pour la réalisation d’un by pass gastrique. Ce travail à pour but d’évaluer l’intérêt de la fixation de l’anneau.

Matériel méthodes.

De 1997 à 2006, 5838 patients ont bénéficié d’un anneau gastrique par la même équipe. Historiquement ont été mis en place des anneau Lapband® (868), Obtech® (1386) et Midband® (3584). Il s’agit d’une étude de cohorte historique portant sur les seuls anneaux Midband® dans le but d’isoler le plus possible la variable étudiée et ne pas interférer avec le type d’anneau et la voie d’abord.

Tous les anneaux ont été placés en « pars flaccida ». Les anneaux ne sont gonflés que 2 mois après l’intervention et toujours sous contrôle radiologique par le chirurgien ou le médecin nutritionniste de l’équipe. L’organisation du suivi comporte le réglage de l’anneau à la demande et une consultation semestrielle par les médecins nutritionnistes de l’équipe. L’étude statistique sur 2 variables qualitatives a été réalisée avec un test Khi 2.

Résultats

Il n’y a eu aucun décès post opératoire.

<table>
<thead>
<tr>
<th></th>
<th>Glissement</th>
<th>Pas de glissement</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fixé</td>
<td>64 (3%)</td>
<td>2001</td>
<td>2065</td>
</tr>
<tr>
<td>Non fixé</td>
<td>18 (1%)</td>
<td>1501</td>
<td>1519</td>
</tr>
<tr>
<td>Total</td>
<td>82</td>
<td>3502</td>
<td>3584</td>
</tr>
</tbody>
</table>

Test Chi 2 : P=0,0001

Le traitement était l’ablation dans 46 cas, la réalisation d’un by pass gastrique dans 15 cas et la remise en place dans 21 cas. Chez 8 patients une remise en place a été réalisée avant le by pass gastrique ou l’ablation. Tous les patients ont présenté un glissement aigu dans les 3 jours suivant l’intervention et ont été comptabilisés.

Le délai de survenue du glissement était de 29 ± 10 mois.

Conclusions.

Même si cette étude n’est pas randomisée, la différence est en faveur de l’absence de fixation. L’absence de fixation permet de proposer l’anneau gastrique en première intention car il ne gêne pas la réalisation ultérieure d’un by pass gastrique. En regard de la mortalité et la morbidité du by pass chez les super obèses cette attitude est systématiquement proposée dans notre équipe afin d’obtenir un BMI acceptable pour augmenter le niveau de sécurité de cette intervention.
OBJECTIVE: DEMONSTRATE THAT THE FRENCH ADJUSTABLE GASTRIC BAND LAPAROSCOPIC SURGERY IS STILL VALID.

BACKGROUND: THE ADJUSTABLE GASTRIC BAND SURGERY WAS THE FIRST BARIATRIC PROCEDURE PERFORMED LAPAROSCOPICALLY. IN SPITE OF THIS, THE EVIDENCE OF ITS LONG-TERM RESULTS IS LIMITED, ITS USE IS PREFERRED IN SITUATIONS DETERMINED BY ANESTHETIC RISK AND IBM LESS THAN 45. IT IS KNOWN THAT RESTRICTIVE PROCEDURES FREQUENTLY FAIL IN SUPEROBSESE PATIENTS.

MATERIAL AND METHODS: FROM JUNE 2003 TO JUNE 2006 WE SELECTED 50 PATIENTS FOR COLLOCATION OF THE FRENCH ADJUSTABLE GASTRIC BAND, 42 FEMALE AND 8 MALE WITH IBM FROM 35 TO 65, AGE OSCILLATING FROM 19 TO 54 YEARS, THE FREQUENT COMORBIDITIES WERE: HYPERTENSION, OSTHEOARTICULAR PROBLEMS, HYPERCHOLESTEROLEMY, DIABETES MELLITUS AND SLEEP APNEA. TIME OF SURGERY VARIED FROM 30 UP TO 120 MINUTES, THERE WERE NO COMPLICATIONS DURING SURGERY WHEN USING THE PARS FLACID TECHNIQUE, NO PATIENT WAS CONVERTED INTO OPEN SURGERY AND IN ORDER TO AVOID GASTRIC EROSION WE DID NOT FIX THE BAND WITH STOMACH TO STOMACH SUTURE, WE SIMPLY SLIDED THE SILICON TUBE ON THE MAJOR EPIPLON UNTIL IT GETS TO THE PORTOCATH THROUGH THE TROCAR OF 12MM IN THE LEFT HYPOCHONDRIUM, THE CLOSINGS OF THE APONEUROSIS’ TROCARS OF 10 AND 12 MM ARE OCLUED WITH A GELFOAM “BUNG” AND WE FIX THEM ON THE PORTOCATH WITH PROLENE STITCHES TO THE APONEUROSIS.

Technique:
RESULTS: WE DID NOT HAVE MORTALITY, EXCESS LOSS OF WEIGHT WAS MEASURED AT 1, 4, 6, 12, 18 AND 24 MONTHS, AFTER-SURGERY COMPLICATIONS WERE: UNABILITY TO EAT SOLID FOOD IN 1 PATIENT, THAT REQUIRED LAPAROSCOPIC OVERVIEW OF HER BAND WITHOUT EVIDENCE OF MISPLACEMENT OR GASTRIC DAMAGE, FOR SUCH REASONS AND WITH PATIENT'S APPROVAL CONTINUED TO HAVE THE BAND BUT FINALLY IT WAS RETIRED IN A THIRD LAPAROSCOPIC EVENT 8 MONTHS AFTER COLLOCATION DUE TO AN ELECTROLYTIC DISORDER PRODUCT OF PERSISTENT VOMITING; ELBOWED SILICON TUBE ON ITS INSERTION TO THE PORTOCATH IN A PATIENT WITH 85% OF EXCESS WEIGHT LOSS; A PATIENT DIED OF GALL BLADDER CARCINOMA AFTER 2 YEARS AND 5 MONTHS AND 90% OF EXCESS WEIGHT LOSS; TWO PATIENTS REQUIRED THE BAND TO BE DEFLATED DUE TO SPONTANEOUS AUTOADJUSTMENT (LEAVING THE BAND WITH 3.5MLOF IOPAMIRON 300, PATIENTS ATTENDED WITH 10 CC OF LIQUID INSIDE THE LOW PRESSURE BALLOON) AND IT APPEARED WITH PAIN IN THE BACK AND INTOLERANCE TO ORAL FOODS, THESE PRESENTED MINIMUM ANTERIOR SLIPPAGE THAT WERE SOLVED WITH THE DEFLATION OF THE BALLOON FOR 1 MONTH RECALIBRATING IT AGAIN IN THE X RAY ROOM WITH FLUOROSCOPIC CONTROL.
Edades de los pacientes
(19 a 58 a.)

Talla de los pacientes
(1.54-1.95 mts.)
Peso de los pacientes
(90 - 206 Kg)

INDICE DE MASA CORPORAL
(35 a 62)
CONCLUSIONS:

THE FRENCH ADJUSTABLE GASTRIC BAND IS THE MOST SIMPLE, REVERSIBLE AND SAFE PROCEDURE FOR SURGICAL TREATMENT OF MORBID OBESITY, ESPECIALLY WITH BMI<50 AND SHOULD BE CONSIDERED IN PATIENTS WITH HIGH RISK OF IMMEDIATE BEFORE AND AFTER SURGERY COMPLICATIONS. REDUCES COMORBILITIES AND WITH GOOD FOLLOW-UP ACHIEVES A 70% LOSS OF THE INITIAL EXCESS WEIGHT.

THE LATER REOPERATIONS ARE FREQUENT AND ARE RELATED WITH THE PORTOCATH, ANTERIOR OR POSTERIOR GASTRIC SLIPPAGE AND GASTRIC EROSION, HOWEVER THESE PROBLEMS DECREASE WITH EXPERIENCE AND WITHOUT FIXATION OF THE BAND USING STOMACH TO STOMACH SUTURES.

SEVERITY IN COMPLICATIONS WITH OTHER NON REVERSIBLE METHODS ARE MUCH MORE SERIOUS.

% EWL
MANAGEMENT OF FOLLOW UP AFTER GASTRIC BANDING IN CENTER WITH EXCESS OF 4000

Y. MATUSSIERE, P. VICARD, V. FRERING, E. FONTAUMARD –

Clinique de la Sauvegade – Lyon - France


Background: bariatric surgery is recognized as a safe procedure for the control of morbid obesity. Among surgical teams, pre-operative care and follow up may be provided in various ways. This report details organization of a bariatric centre dealing with an excess of 4000 patients.

Methods: Our centre provides different bariatric procedures including Gastric Banding commenced in 1997 and Gastric Bypass in 2004. Actually, more than 800 patients per a year are referred for bariatric surgical procedures and follow up.

We describe the patient pathway and organization of the delivery of care from initial referral, especially for follow-up organization.

Results: From January 1997 to December 2005, 4660 patients were referred for bariatric procedures. 90.3% for first intention, 9.7% following previous VBG. This study excludes patients from other centers who were referred for follow up care only. Gastric banding was done in 4620 and 40 had Gastric By Pass since it can be achieved.

An efficient team and effective organization is required to complete a mean of 30 surgical procedures per week, 75 band adjustment, 25 programmed consultation and 10 emergency consultations per week.

Gastric band used are MIDBAND®

Conclusion: Bariatric centers with high throughput need structural organization from the outset and should include a full. This organization can provide high level in detection of complications and better results. Communication and collaboration with the patient's primary care provider are important. All of the elements above are necessary to provide the comprehensive care that contributes to optimal patient outcomes.

Every 6 month Medical consultation focus on :

Clinical tolerance:
- Reflux and vomiting frequency
- Diet: evaluation by short diet inquire the carrences probably.

Clinical evaluation:
- Weight, blood pressure, umbilic perimeter
- Dermatologic and neurology exam

Co morbidities:
- Assessment of diabetes, HTA, SAS, hyperlipemia, arthopathy

Sport: Evaluation of ability to exercise

Caurrences :
- Assessment of diabetes, HTA, SAS, hyperlipemia, arthopathy
- Systematic supplementation.

Psy:
- Evaluation of general feeling of the patient, the food behavior trouble, the body acceptance.
- Assessment of the new way of life

At any time patient have a special phone number if they want to explain a disease, they receive special advice and if necessary a schedule can be given.

Every day patient can have band adjustment in case of emergency.
Background:

Many Authors believe Gastric By-Pass (GBP) to be the Gold Standard for Obesity Control. Mortality and Morbidity Results of GBP are well known. Criticism of LAGB includes Poor Results and Late Morbidity. This Study report Results from a Single Centre with Experience in Excess of 4500 LAGB.

Methods:

From January 1997 to March 2006, 7350 Patients were referred for Bariatric Procedures. LAGB & GBP were the Surgical Options offered (GBP since 2004). Full Explanation of the Procedure, Results/Outcomes and Potential Complications were given to the Patients.

Results:

50 LAGB were performed, 10 Patients (All with Type 2 diabetes) choose this as a Primary Intervention. 40 Patients had LGBP after LAGB. A total of 4810 LAGB were completed (886 LAPBAND®, 1386 SAGB®, 2556 MIDBAND®). 430 of these Patients required Revisional Surgery following VGB. 317 LAGB, 2 LGBP. The remaining cases required Surgical Intervention either due to Stenosis or Gastric Ulceration (caused by Silastic Band). Sleeve Gastrectomy was performed in 2 Cases where NO Other Procedures was feasible. NO Death occurred. Post-Op. Management and Follow-Up was by 2 Surgeons and 2 Nutritionists, all of whom perform Gastric Band Adjustments.

Conclusions:

LAGB is an Effective 1st Step for the Surgical Treatment of Obesity without compromising possible future Bariatric Procedures.
LAGB IMPROVEMENT RESULTS : A SINGLE CENTRE STUDY OF 4019 PATIENTS.

V. FRERING, E. FONTAUMARD, P. VICARD, S. BATES. Clinique Sauvegarde Lyon, FRANCE

IFSO Sydney – Australia – September 2006

Background:
LAGB is recognized as a Safe Procedure for the Control of Obesity. From the Outset many Improvements have been suggested including different Bands and Methods of Placement.

Methods:
From 1997 to February 2004 4019 LAGB were placed by the same Surgeon. Mean BMI was 44.8. Historically 3 Bands were used: LAPBAND® (868), SAGB® (1386) and MIDBAND® (1765). Perigastric and Pars Flaccida Approach were both used. Stomach to Stomach Sutures were not always used.

Complications after LAGB

<table>
<thead>
<tr>
<th></th>
<th>n</th>
<th>Slippage-Dilatation</th>
<th>Removal/Slippage</th>
<th>Removal/Erosion</th>
<th>Miscellaneous</th>
<th>Total Re-Operations</th>
</tr>
</thead>
<tbody>
<tr>
<td>LAPBAND®</td>
<td>868</td>
<td>109 (12,5%)</td>
<td>107 (12,3%)</td>
<td>9 (1%)</td>
<td>1</td>
<td>117 (14,4%)</td>
</tr>
<tr>
<td>SAGB®</td>
<td>1386</td>
<td>44 (3,1%)</td>
<td>10 (0,7%)</td>
<td>27 (1,9%)</td>
<td>5</td>
<td>42 (3%)</td>
</tr>
<tr>
<td>MIDBAND®</td>
<td>1765</td>
<td>30 (0,6%)</td>
<td>11 (0,6%)</td>
<td>1 (&lt;0,1%)</td>
<td>1</td>
<td>13 (0,7%)</td>
</tr>
</tbody>
</table>

Mean Weight Loss

<table>
<thead>
<tr>
<th></th>
<th>n</th>
<th>1 YEAR</th>
<th>2 YEARS</th>
<th>3 YEARS</th>
<th>4 YEARS</th>
<th>Lost to Follow-Up (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>LAPBAND®</td>
<td>868</td>
<td>7,31 (95)</td>
<td>9,93 (105)</td>
<td>11,5 (173)</td>
<td>10,85 (200)</td>
<td>33,90 % (295)</td>
</tr>
<tr>
<td>SAGB®</td>
<td>1386</td>
<td>5,36 (191)</td>
<td>10,52 (331)</td>
<td>13,89 (310)</td>
<td>13,53 (221)</td>
<td>24,02 % (333)</td>
</tr>
<tr>
<td>MIDBAND®</td>
<td>967</td>
<td>6,90 (149)</td>
<td>12,13 (310)</td>
<td>14,44 (367)</td>
<td>13,70 (55)</td>
<td>6,90 % (66)</td>
</tr>
</tbody>
</table>

(MIDBAND® has been limited in number to the 1st 967 in order to provide Sufficient Historic Review/Data)

Conclusions:
The Results suggest that Different Bands produce significantly different outcomes. Continuous Improvements by the Manufacturers are desirable.
PROSPECTIVE RANDOMIZED STUDY COMPARING 2 DIFFERENT BANDS.

Ph. ESPALIEU, A. ALHAJ, G. PONCET, J BOULEZ_ Edouard Herriot Hospital, Lyon France.

IFSO Sydney – Australie – September 2006

**PATIENTS AND METHODS**

1. **197 PATIENTS** - (BMI > 40) or > 35 with obesity - related complications

   - Operated by the same surgeon

   - Between 09/2002 and 06/2006

2. **TECHNIQUE** - Standardized para-fascial technique

3. **Exclusion criteria:** Redo obesity surgery

**PROCEDURES**

- *Follow-up periodically in the database:
  - Demographic – morphologic
  - Complications
  - Postoperative
  - Follow-up (3 Months, 6, 12, 18, 24, 36)

**RESULTS**

**COMPLICATIONS**

<table>
<thead>
<tr>
<th>S.A.G.B.</th>
<th>MID BAND</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Band Erosion</td>
<td>2 stitipages</td>
</tr>
<tr>
<td>1 SBO due to the tube</td>
<td>2 Access port cath</td>
</tr>
</tbody>
</table>

**REINTERVENTIONS**

<table>
<thead>
<tr>
<th>S.A.G.B.</th>
<th>MID BAND</th>
</tr>
</thead>
<tbody>
<tr>
<td>Band Removal</td>
<td>Repositioning</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>WEIGHT LOSS</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.5</td>
</tr>
</tbody>
</table>

**% FAILURE**

Patients with poor result according to REBHOLDT criteria (BMI < 25 %) 18 th follow-up:

- **S.A.G.B.** 6/50 (12 %)
- **MID BAND** 7/30 (23 %)

**CONCLUSION**

Both bands seem effective in inducing weight loss, with a reasonable rate of complications and reinterventions during a 18 months follow-up.
LOW RATE COMPLICATIONS AFTER GASTRIC BANDING

S.BARCET MD – Clinique Saint Roch – 29 Route de Gordes 84300 Cavaillon, France – barcet.stephane@wanadoo.fr

IFSO Sydney – Australia – September 2006

(Series of 120 Patients with minimum 2 Years Follow-Up)

Complications often appear during first 2 Years after LAGB. Procedures as Band Removal or changing because of Slippage, Pouch-Dilatation or Band Migration are Well-Known and not rare.

• METHODS:
120 Patients (115 F_5 M) operated by the same surgeon from February 2002 to March 2004 with MIDBAND®

The BAND: Low pressure, very Smooth without any rough edge

The Patients: 18 to 60 Years (mean 39), 85 to160 Kg (mean 111), 37 to 60 BMI (mean 42,3)

Clinical and X-ray Controls every 4 Months during 2 Years, then every 6 Months.
Dietetic Follow-Up was done concurrently
Band-Adjustment was depending with Results and Comfort.

• RESULTS:
At 1& 2 Years, 11and18 patients were respectively lost of Follow-Up (9 & 15 %)
At 3 Years (83 patients), 16 were lost (19%)

Regarding Mean BMI: At 1, 2 and 3 Years it decreased from 42,3 to 33,9 then 30 and 29.

Regarding Complications: _NO Mortality_ NO Per-Op. Complications _NO Infection_ _NO Leak at Site Level_ NO Migration_

• Medium-Term Complications within 2 Years included 2 Majors and 5 Minors :
  2 Slippage (1,6%): Re-operated (at 9 and 11 months) by replacing the Band without new complications one year after redo.
  5 Cases of Switched Inflation (4%): Re-operated with Local Anaesthesia

• Pregnancy and gastric banding :
  8 Women had successful Pregnancy within 3 Years after LAGB.
  (They were managed by deflating partially the band before third month of pregnancy)

• CONCLUSION :

MIDBAND® appears to be very Safe, Comfortable and Efficient with a Low Rate of Major Complications and new heavy procedure (< 2%)
Long-Term Evaluation and Follow-Up by Multidisciplinary Team is required and necessary to further confirm this results
LOW RATE OF COMPLICATIONS AFTER LAGB, SERIE OF 120 PATIENTS WITH MINIMUM 2 YEARS FOLLOW-UP

S.BARCET MD – Clinique Saint Roch – 29 Route de Gordes 84300 Cavaillon, France – barcet.stephane@wanadoo.fr

IFSO Sydney – Australia – September 2006

Background:

Short-Term Efficacy & Safety of LAGB are proved. Medium & Long-Term Results are now better known. Complications mostly appear during the first Years such as Slippage, Pouch Dilatation or Band Migration with a High Rate of new procedures including Removal or Changing.

Methods:

Between 02/2004 & 03/2004, 120 Patients (115F, 5M) underwent LAGB by the same Surgeon with a Low Pressure Smooth Band (MIDBAND®). Mean Age was 39 (18-60), Initial Weight was 111Kg (85-160) & Initial BMI 42,3 (37-60). Patients were examined by the Surgeon every 4 Months during 2 Years then every 6 Months and have X-Ray Control and Band Adjustment depending on Results & Comfort.

Results:

Mortality, Per-Op. & Short-Term Complications were NON-Existent. Mean Hospital Stay was 2 Days. Medium-Term Complications within 2 Years:
2 Slippages (1,6%), Successfully Operated by Replacing the Band without new Complications 1 Year after and with Good Efficiency.
5 Switched Inflation Site (4%), Re-Operated with Local Anaesthesia.
There was NO Infection, NO Leak at Site Level, NO Intragastric-Migration, Lost Follow-Up Rates at 1, 2 & 3 Years are 9% (11/120), 15% (18/120) and 19% (16/83). The Mean BMI decreased from 42,3 to 33,9at 1 Year, to 30 at 2Years & to 29,8 at 3 Years. 8 Women had Successful Pregnancy within 3 Years and were managed by Deflating partially the Band before the 3rd Month.

Conclusions:

MIDBAND® appears to be very Safe, Comfortable and Efficient with a Very Low Rate of Major Complications and New Procedures. Long-Term Evaluation & Follow-Up by a Multidisciplinary Team is required and necessary to further confirm this Result.
P35. LAPAROSCOPIC GASTRIC BANDING: A GENERAL HOSPITAL EXPERIENCE OF 337 CASES WITH MIDBAND SOFT RING®


Background: Surgery is increasingly considered as the only long-term efficient treatment of morbid obesity. We report our experience of 337 cases of laparoscopic adjustable gastric banding (LAGB) performed at Laon General Hospital with a new soft band.

Methods: All patients responded to the NIH criteria and were screened by the multidisciplinary medical committee. They were all operated on by a single surgeon (MH) and received the same type of soft ring, MIDBAND® (Lyon, France). Follow-up was assured by the same surgeon, the nutritionist, the radiologist and specialized paramedics (dietician and psychologist).

Results: 337 patients underwent the LAGB procedure from April 2003 to January 2006. 90% of the candidates were women (304), mean body mass index (BMI) was 44.3 kg/m² (range 36-62) and mean age 31 years (range 19-66). Co-morbidities interested 46% of candidates. Ambulatory LAGB was considered in 160 cases, 162 others stayed one night and 15 two nights in hospital. There was no mortality. Complications occurred in 25 patients: intra-peritoneal sepsis 1, slippage 3, pre-gastric positioning 6, left pneumothorax 2, left diaphragmatic hernia 1, port sepsis 1, port infections 8, removal for psychological intolerance 3. No gastric migration or esophageal dilation occurred in this short-term series. Regular follow-up interested 86% of patients, and mean excess weight loss was 48% with a mean postoperative BMI of 32 kg/m².

Conclusions: Thanks to its simplicity, feasibility and relatively low morbi-mortality, LAGB still represents, in skilled hands, the most common and popular surgical operation for the morbidly obese in France and Europe. Thorough follow-up guarantees best chances of success.

Obesity Surgery, 16, 2006

ABSTRACTS, Second Congress of IFSO-European Chapter, Lyon, France
57. MANAGEMENT OF GASTRIC BANDING IN BARIATRIC SURGERY: AN EXPERIENCE OF 7,000 PATIENTS


Background: Gastric banding is recognized as a safe procedure for the control of obesity. Among surgical teams, preoperative care and follow-up may be provided in various ways. This report details organization of a bariatric center dealing with 7,000 patients.

Methods: Our center provides different bariatric procedures including Gastric Banding which commenced in 1997 and Gastric Bypass in 2004. More than 600 patients per annum are referred for bariatric surgical procedures and follow-up. We describe the patient pathway and organization of the delivery of care from initial referral.

Results: From January 1997 to December 2005, 7,160 patients were referred for bariatric procedures. 90.3% for first intervention, 9.7% following previous VBG. This study excludes patients from other centers who were referred for follow-up care only. Gastric banding was performed in 4,620 and 40 have had Gastric Bypass. An efficient team and an effective organization is required to complete a weekly mean of 30 surgical procedures, 75 band adjustments, 25 programmed consultations and 10 emergency consultations. Members of the medical team include secretaries, nurses, radiologist, anesthesiologist, psychiatrist, nutritionist and surgeon. The organization of such team is essential to insure a safe, efficient and effective pathway for the patient. This includes access to radiology and operating room 24 hours a day.

Conclusions: Dedicated bariatric centers with high patient load need structural organization from the outset and should include a full medical team and 24 hours use of hospital facilities in case of emergencies.

410 Obesity Surgery, 16, 2006

ABSTRACTS, Second Congress of IFSO-European Chapter; Lyon, France
52. AMBULATORY LAPAROSCOPIC ADJUSTABLE GASTRIC BANDING: A GENERAL HOSPITAL EXPERIENCE OF 160 CASES

M. Hamdan, D. Berlemont, H. de Fresnoy. Departments of General Surgery and Anaesthesia, Centre Hospitalier Général, Laon, France.

Background: We present the experience of 2 years of ambulatory adjustable gastric banding in a general hospital.

Methods: Between January 2004 and January 2006, 160 patients underwent ambulatory laparoscopic adjustable banding (LAGB). They were all operated on by the same surgeon and anesthetist. All patients responded to the NIH selection criteria for morbid obesity surgery. They received no pre-medication and induction of anesthesia was obtained by the adjunction of Sufentanil, Atracurium and Propofol. Anesthesia was maintained by Desflurane. The soft band® (MIDBAND, France) was used in all the cases, introduced by the Swedish pars flaccida technique.

Results: Among the 160 patients, 141 were female (88%), average body mass index 42.5 kg/m² (37-54) and mean age 34 years (20-54). All patients responded to the ambulatory surgery criteria and stable co-morbidities (hypertension, diabetes, obstructive sleep apnea, etc.) were not considered as contraindications to this type of surgery. No peri-operative complication occurred and the postoperative course was unremarkable, authorizing discharge in the evening after deambulation and a liquid meal. Patients went home with analgesic and antithrombotic medications and the surgeon’s cellular phone number. They were systematically phoned home the day after surgery. No complication occurred in the first postoperative month, joining results of inpatient LAGB. 20 patients were excluded from this study (difficult intubation 3, nausea and vomiting 10, pain 7).

Conclusions: In skilled hands and selected patients, ambulatory LAGB is simple, safe, feasible and beneficial for both patients and the health-care system.

Obesity Surgery, 16, 2006 409

ABSTRACTS, Second Congress of IFSO-European Chapter, Lyon, France
UK EXPERIENCE OF THE MIDBAND® LAPAROSCOPIC ADJUSTABLE GASTRIC BAND IN 105 PATIENTS

SA NORTON, DF HEWIN, AB JOHNSON, SE BATES, L. SAWYER, S. BRENNAN, JDT MORGAN – SOUTHMEAD Hospital, Bristol, UK

EUROPEEN IFSO Lyon – France – April 2006

82. UK EXPERIENCE OF THE MIDBAND® LAPAROSCOPIC ADJUSTABLE GASTRIC BAND IN 105 PATIENTS
SA Norton, DF Hewin, AB Johnson, SE Bates, L Sawyer, S Brennan, JDT Morgan. Departments of Surgery and Endocrinology, Southmead Hospital, Bristol and Gloucester Royal Hospital, UK.

Background: Laparoscopic adjustable gastric banding (LAGB) is commonly used for the surgical treatment of morbid obesity. The initial experience with a new LAGB is presented.

Methods: The first 105 patients who underwent LAGB using the MIDband® (Lyon, France) in two UK centres were studied prospectively. All patients fulfilled the National Institute for Clinical Excellence criteria and underwent comprehensive preoperative multi-disciplinary team assessment. Band placement was performed using a standardized pars flaccida approach. Complete postoperative follow-up has been achieved in 100% of patients from 1 to 24 months.

Results: The median age of patients was 42 (range 21-69) years with a median BMI of 42 (range 35-69). All patients underwent LAGB using a standardized technique with a median hospital stay of 1 day (range 1-7 days). There was no conversion to open surgery. The early complication rate was 7.6% (1 intra-operative bleed, 3 total dysphagia, 4 port-site infections) and there was 1 prosthesis replacement due to leak. Mean excess weight loss was 12%, 42%, 58% and 100% at 3, 12, 18 and 24 months respectively. Of the 27 patients with diabetes, there has been a significant improvement in glycemic control ($P<0.001$) and reduction in diabetic medication.

Conclusions: LAGB using the MIDband® is a safe procedure with a low peri-operative complication rate and promising short-term results.

416 Obesity Surgery, 16, 2006

ABSTRACTS, Second Congress of IFSO-European Chapter, Lyon, France
COMPARATIVE STUDY ON TYPE MIDBAND AND LAPBAND GASTROPLASTY BANDS

Dr. Pierre Campan, Hospital La Conception – Marseille - France

Introduction

At the Department of General Surgery and Hepatic Transplantation of the University Hospital Centre of La Conception of Marseille, 294 gastroplasty with gastric bands have been performed since August 1999.

In August 1999, the material labelled Mac Ghan (now Inamed) has been accepted in the Public Health Service of Marseille; then, after September 2001, Midband gastric bands.

The successive demands for reference have been made by the author of the study compared to the Central Pharmacy of the Public Health of the Hospitals of Marseilles with the purpose of making available and compare rigid gastric bands to low pressure soft gastric bands.

Study Purpose

The purpose of this study is to compare soft and rigid gastroplasty bands in terms of efficacy on weight loss, ease of use and morbidity.

The soft bands are MIDBAND; the rigid ones are LAPBAND 10cm and 11cm (INAMED).

Material and method

203 patients operated since September 2001 were included in this study.

The inclusion of patients starts in September 2001, when both types of gastric bands were available at the Public Health Hospitals Services in Marseille.

The patients’ selection and all investigations have been performed by one operator only, who has afterwards assured the post-operative follow-up and the adjustment of all the gastric bands.

The gastroplasties performed before the Midband gastric bands were available in September 2001 have been excluded from this study.

94 Midband gastric bands and 109 Lapband gastric bands have been implanted.

The selection of each patient has been carried out by genuine randomisation in an unpredictable manner.

For the Lapband gastric bands two different references have been used: Lapband 10cm and Lapband 11cm, the latter available since September 2002.

The surgical technique used was identical for all types of gastric bands.

The weight loss has been evaluated in terms of reduction of the Body Mass Index or BMI = Weight (Kg) / Size^2 (cm^2), and formulated by the number of BMI points lost in 6 months, 1 year and 2 years.

The follow-up duration for each patient has been calculated from the date of the intervention until the end of the study.
In this way, no patients have been reported not to be followed up. The results do not influence other than the real values, with no extrapolation for the patients for whom the follow-up duration is shorter than 2 years. The collection of data has been performed prospectively.

Both groups of patients

The following chart shows two groups of patients compared by age, sex ratio and BMI.

<table>
<thead>
<tr>
<th>Type of patients</th>
<th>Age average</th>
<th>Male/Female</th>
<th>BMI average</th>
</tr>
</thead>
<tbody>
<tr>
<td>MIDBAND</td>
<td>38 years old</td>
<td>12M / 84F (13%)</td>
<td>43</td>
</tr>
<tr>
<td>LAPBAND</td>
<td>38 years old</td>
<td>10M / 99F (9%)</td>
<td>42</td>
</tr>
</tbody>
</table>

**Results**

The efficacy of each type of prosthesis has been evaluated on the weight curve, the number of average adjustments per patient and the complications rate.

1. **Efficacy**

The weight loss has been calculated by the number of average BMI points lost by the number of the patient available each term of 6, 12, 18 and 24 post-operative terms.

The numbers are indicated in each term by the LAPBAND and the INAMED groups.
The weight loss curves are sensibly identical for both types of material, with an advantage for LAPBAND during the first year; an advantage which is nullified within 18 months and appears to be inverted afterwards; taking into account the moderate numbers at the end of the curve, this difference is not too significant.

Therefore, it seems impossible to discriminate both types of material according to their efficacy on the weight curve within a period of time shorter than two years.

2. Adjustments

The average number of adjustments performed by a surgeon in order to obtain an optimal alimentary restriction has been calculated during the first post-operative year. This number is an indirect reflection of the ease of use of the prosthesis in short term.

**MIDBAND Group** 2.2 adjustments per patient  
**LAPBAND Group** 1.8 adjustments per patient

3. Complications

The intra-operative complications have not been evaluated during this study. These are not connected to the prosthesis and occur before the placement. They are, in fact, the reflection of surgical difficulties connected to prominent obesity, to surgical antecedents or, eventually, to the results of technical errors.
It should be noticed that the intervention was identical for both groups.

3.1. **Premature post-operative complications.**

3.1.1. The premature post-operative *gastric stenosis* needing re-intervention.

**MIDBAND Group** 1 case  
**LAPBAND Group** 2 cases

Rather more connected to the adiposity of the patient than to the diameter or to the morphology of the prosthesis, it has been treated in 1 case due to the resection of a 10cm LAPBAND and its replacement for a MIDBAND gastric band.

3.1.2. **Premature slippage**

**MIDBAND Group** 0 case  
**LAPBAND Group** 2 cases

This type of complications are connected with the wrong fastening of the prosthesis. Favoured by certain anatomical peculiarities, they are also connected with the biggest volume of LAPBAND rigid prosthesis, in particular the 11cm LAPBAND.

3.1.3. One case of premature post-operative peritonitis has been revealed in the LAPBAND group. It was not connected with the material but with the technique in the course of fixation of the prosthesis.

3.1.4. No cases of premature gastric erosion have been revealed.

Finally, it should be noticed that the duration of the post-operative hospitalisation was identical in both groups, equivalent to 1.8 days.

3.2. **Tardive complications**

3.2.1. **Tardive erosions:** No cases were revealed amongst the patients in this study. This is to report that, in fact, the average time of occurrence of this complication, observed in the literature, is longer than three months.

3.2.2. **Dilatation of gastric pouch**

**MIDBAND Group** 4 cases  
**LAPBAND Group** 2 cases

This complication, which requires re-intervention, is typically connected with the persistent disorders of the patient’s nutritional behaviour.

3.2.3. **Slippage**

**MIDBAND Group** 0 cases  
**LAPBAND Group** 2 cases

Rigid prosthesis have been involved in this type of complication. There is nothing left to be demonstrated except that the difference observed between both groups favours this hypothesis.

3.2.4. **Complete catheter rupture** with intra-peritoneal migration of one of the extremities, requiring re-intervention under general anaesthetics. It involves the modification of the implantable chamber of the prosthesis.

**MIDBAND Group** 0 cases  
**LAPBAND Group** 5 cases
The rupture of the catheter is a well-known phenomenon, observed in the metallic connection used for connecting the catheter with the LAPBAND gastric band’s chamber. Its frequency has required the recent modification of the prosthesis, which remains, however, always provided with this type of metallic connection, which is traumatising due to the silicone.

3.2.5. **Partial catheter rupture** without migration of the catheter’s proximal extremity, requiring surgical re-intervention with local anaesthetics:

- **MIDBAND Group** 0 cases
- **LAPBAND Group** 3 cases

Its cause is the same as for that of the complete catheter rupture.

3.2.6. **Problems affecting the implantable chamber**, and requiring re-intervention (in particular the reversing of the chamber) have not been observed in any of this series’ groups. It was frequent in patients previously operated, and they have been suppressed with the modification of the site and of the chamber’s implantation technique.

<table>
<thead>
<tr>
<th></th>
<th>Erosions</th>
<th>Dilatations</th>
<th>Sliding</th>
<th>Complete ruptures</th>
<th>Partial ruptures</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>MIDBAND</strong></td>
<td>0</td>
<td>4</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>LAPBAND</strong></td>
<td>0</td>
<td>2</td>
<td>2</td>
<td>5</td>
<td>3</td>
</tr>
</tbody>
</table>

**Discussion**

This study has been initiated in September 2001; the gathering of conclusions pulled out of results is at present preliminary. However, the quantity of patients is sufficient as certain comparisons have a definite value since they will not be modified by an additional recession.

1. The ease if use of a gastroplasty prosthesis can be appreciated on the quickly assessable parameters; these are:
   - duration of the intervention
   - intra-operative and immediately post-operative complications
   - ease of adjustment of the gastric band.

The measurement of these three parameters is complete since the end of the first post-operative year.

The duration of the intervention was identical in both groups.

The premature complications have been many with the INAMED gastric band; therefore, the superior obstruction has rendered the fixation difficult in the most obese patients. This difficulty is caused by the premature sliding of the gastric band.

On the other hand, the number of necessary adjustments to obtain a sufficient alimentary restriction have been higher with the MIDBAND group, as it is the case with all gastric bands with a soft structure.

Both types of gastric bands have therefore been considered to be of equal ease of use.
2. The success of a gastroplasty, in terms of weight loss, cannot be confirmed with a recession inferior to five, even ten years after the beginning of the measurement. Three factors have rendered complex to produce the long-term results:

- mechanical effect of the prosthesis
- occurrence of complications that influence the patient’s quality of life and the prosthesis’ life spam.
- psychological factors allowing or restraining the modifications of the alimentary behaviour.

The first period of 12-18 post-operative months is that where the prosthesis' mechanical effect plays a stronger and more independent role than the other two, in which the influence increased with time.

- The weight loss in 18 months is therefore, a good indicator of the mechanical qualities of a prosthesis. This weight loss is briefly higher to 12 months in the LAPBAND group; it becomes identical in 18 months time for both groups. It will not be possible to validate the tendency to a slight superiority for the MIDBAND group in 2 years, not significant today, until the next study, with the right quantity of patients.

- Tardive complications constitute an essential element of comparison.

1. Gastric erosions cannot be observed; their occurrence usually beyond the third year will be the study object of a subsequent study.

2. Dilatation of the gastric pouch and prosthesis sliding are the episodes of a peripheral physiopathology; they are usually re-grouped under one section. 4 cases were observed in both groups, giving different but not significant incidences, 4.3% in the MIDBAND group and 3.7% in the LAPBAND group. It should be noticed that the re-interventions have not been connected with the prosthesis loss in the MIDBAND group but two 10cm LAPBAND gastric bands have been removed and replaced.

3. Catheter ruptures have not been observed in the LAPBAND group. This matches the experience reported in the literature. Catheter raptures are connected with the presence of a metallic connection traumatised by the silicone and have recently leaded to the modifications in the manufacture of the gastric bands. The consequences on the incidence of the complication will not be appreciated until later on.

This complication leads to the immediate loss of the efficacy of the prosthesis. A re-intervention under general anaesthetics was necessary in 5 out of 8 cases and in all cases the modification of the implantation chamber of the gastric band.

Its frequency, again superior amongst the patients operated before the beginning of the study, has lead to a temporary suspension of inclusions in the LAPBAND group during March-April 2004, period in which the inconveniency generated by the complications have seemed to override the qualities of the LAPBAND prosthesis.

**To summarise**, the efficacy in terms of weight loss appears to be sensibly identical in both groups. On the other hand, the long-term complications have been too frequent in the LAPBAND group.
Conclusions

At the beginning of this comparative study

1. No difference could be depicted in between the MIDBAND and the LAPBAND groups as regards the ease of use of the gastric bands and the mechanical efficacy of the gastroplasty prosthesis. This is in accordance with the international literature, which has not demonstrated yet the superiority of any of these types of prosthesis.

2. The tardive complications have been very frequent in the LAPBAND group, entailing a significant number of re-interventions.

3. The again insufficient recession of this series does not enable us to evaluate at best the two types of material. It should be noticed that the LAPBAND group is composed of non-identical bands (10cm LAPBAND and 11cm LAPBAND) as regards shape and properties.

The MIDBAND and 11cm LAPBAND prosthesis, more recent than the first one, must be evaluated through further developments.

Despite the numerous catheter ruptures observed with the LAPBAND gastric band, the MIDBAND and LAPBAND gastric bands continue to be used and compared at present in the Department of General Surgery of La Conception Hospital.
Summary

The surgical treatment of morbid obesity with laparoscopic adjustable perigastric banding has become a « gold standard » in Europe. At present, five types of silicone bands are used in most of the countries involved in bariatric surgery. The last silicone ring to come out in the European market in 2000 (MIDBAND) is placed by Pars Flaccida approach according to the technique described by Forsell.

A prospective study of the first 61 cases of our team has been performed in order to evaluate the technique’s feasibility, the pre and post-operative complications, as well as the short-term efficiency on weight loss. The results are very satisfactory, as in average, the patients have lost 50.7% of their excess weight during the first year after operation. The peri-operative mortality is null, and complications a rare (dilatation/sliding < 2% in 1 year). However, these encouraging results need to be studied for a long time in order to validate the procedure.

KEY WORDS: massive obesity, gastroplasty, ring.

INTRODUCTION

The first theory on gastric rings by laparoscopy was described by Dr. Belachew in 1993. He adopted the perigastric technique under laparotomy invented by Dr. Kuzmak during the 1980's. The encouraging results of this procedure associated with the advent of the laparoscopic technique are the firsts of the technique’s current popularity in our continent.

After 1993, the technical and technological evolutions emerge in order to minimise post-operative complications regarded as elevated by most specialists.

The first of these modifications is the positioning of the band by the so-called Pars Flaccida approach. This technique, today almost general consensus, limits the rate of the ring’s sliding as well as the risk of intra-operative complications (23).

With time, different rings have emerged.

The newest one is the MID BAND ring, having as main characteristic the fact of being a very soft ring. Based on pressure, it can be placed by Pars Flaccida approach (figures 1 and 2). Our prospective study’s purpose is to analyse the short-term results of this new ring. Studying the weight loss of patients at the time of their first year of treatment as well as the co-morbidities associated with this procedure.

Patients and method

From February 2001 to November 2002, 61 patients were treated with horizontal gastroplasty calibrated under laparoscopy through Pars Flaccida approach with MID BAND ring. It consisted of 52 women and 9 men, 44 years old on average. The average weight was 114 kg (88-150), the average body mass index BMI was 42 kg/m² (35.7-50). All operative counter-indications have been detected at the time of different medical and surgical consultations (surgical, endocrinological, psychological, dietetic and anaesthetic consultations).
**MID BAND ring characteristics:**
This ring’s main feature is the significant softness. The silicone band is 11 cm long by 2 cm wide. It is inextensible and does not have a sharp edge. An original closure method (see figure 1 and 2) makes the positioning easy without complementary suture help. Moreover, this ring is totally radio-opaque. It is recommended not to use more than 7 cc of solution when tightening the band.

**Surgical technique used**
The patient is positioned in Trendelenburg position at 40º, legs separated (French position), arms crossed. The surgeon stands between the patient's legs. The scrub nurse stands to the left of the patient. She holds the optic and the aid. The celioscopy pedestal is placed to the right of the patient’s head. The pneumoperitoneum is carried out and performed using a Vères needle placed in the left hypochondrium. The position of the trocar used is the classic one for the dissection of the esogastic area:
- Optical trocar of 0° (10 mm): 10 cm below the xiphoid cartilage and 2 cm left paramedian.
- Trocar for the right hand instruments and introduction of the ring (12.5mm): left pararectal position.
- Liver retractor (5mm): lateral under right costal, held by a Martin arm.
- Trocar for the left hand instruments (5mm): Positioned in right pararectal.
- Trocar for operative assistance instrument (5mm): lateral under the left costal edge.

The first period of time consists of a wire guide and a release of the left papillary muscle. An opening with the *Pars Flaccida* approach of the gastro-hepatic ligament is then carried out, making the wire guiding of the diaphragmatic right papillary possible. A channel is created over the transverse cavity of the omentum, within the gastrophrenic ligaments up until the angle of Hiss. The ring is introduced with the 12.5 mm trocar, and then positioned around the stomach. The ring is then closed with a (15 cc) calibration intragastric cuff placed beforehand in collaboration with the anaesthesiologist and inserted with several gastrogastric non-absorbable thread stitches. This first operating period has been modified for the last 41 patients. The intragastric cuff was not used anymore and the ring inserted with only one gastrophrenic stitch with non-absorbable thread.

**Premature post-operative treatment:**
A preventive anti-coagulation with heparin of low molecular weight is carried out on the intervention’s evening (Lovenox 20 mg SC). An analgesic treatment is performed, Prodafalgan IV (2gr x 4 /day) is requested and in the absence of counter-indication, an antibiotic prophylaxis is not followed in case of intra-operative problems (gastric or intestinal perforation). The gastric catheter is removed at the end of the intervention. The patient is left fasting until the radiological test on the following morning (verification of the ring position, satisfactory oesophageal drain).

A mixed feeding is established during 2 weeks; then, the patient will not make any particular diet except for the dietetic recommendations:
- Have meals at fixed times, if possible dedicating enough time.
- Chew food very well.
- Avoid drinking while eating.
- Prohibit carbonated soft drinks
- Do not abuse sweet drinks (tea, fruit juice)
- Avoid certain food which is difficult to digest (asparagus, grapefruit, orange, rhubarb, broccoli, dry fruits, ...).

The first tightening of the ring will take place after the follow-up visit during the first month if necessary (a satisfactory weight loss may differ the tightening of the ring) this will be carried out by the radiologist. The next consultations will take place in 3 months, 6 months, 9 months, 12 months in the surgery department.

**Results (Table 1-3)**

The operative mortality is null as well as the recovery rate.

The average hospitalisation days are 2.05 days.

The loss of excessive weight is shown in table #1.

The post-operative complications are:

- 1 case of dilatation of the gastric pouch treated with medication (loosening of the ring).
- 1 case of intra-gastric migration consecutive to an infection of the outer layer (Staphylococcus aurous). This intra-gastric migration has been treated with laparoscopy performing an anterior incision gastrotomy around 5 cm from the hiatus area. After section of the ring with a chisel the extraction is carried out though transgastric approach. A drainage in contact with the gastrotomy closed with a re-absorbable thread suture. The operative results had no complications.
- 1 case of outer layer oscillation preventing its puncture needed a second surgery with local anaesthetics.
- 3 cases of gastro-oesophageal reflux needed treatment with proton pump inhibitor
- A total of 15 patients presented vomiting during the “honeymoon” period with the ring. These have disappeared instantly by abiding to the nutritional hygiene rules.

**DISCUSSION**

The bariatric surgery purpose for placing the ring of gastroplasty by means of laparoscopy is to recommend a less invasive, less morbid technique, in which efficiency will be stable with time. The short-term results are similar to prospective and retrospective studies which make reference to the suture with an average loss of excessive weight of 50.7% after 1 year of treatment.

There are few studies comparing different gastroplasty rings. No significant difference is found if the loss of excessive weight is studied.

Three studies comparing the Lap Band ring with the Suédois ring have been carried out without showing the evident advantages of one ring over the other as regards loss of excessive weight (13, 20, 23).

The success of the ring technique, as regards weight loss, seems to be closely related to the good selection of patients to be operated (and certainly detect the “sweet eaters”), as well as precise information on them as regards the new eating habits to be acquired, rather than the specific features of each ring.

Among the post-operative complications, the sliding of the ring seems to be a major problem which could put at risk the patient's vital prognosis, whether it is due to necroses of the gastric inner wall or to food intolerance caused by medication side-effects.

Our series of dilatation/sliding rate was of 1.64%. The numbers are superimposed to those of the literature where the average frequency of the gastric pouch's dilatation is 6% (2 – 12.2%) and of 3% for sliding (these studies show much more significant post-operative results than ours). Seuls Wiener (29) Bajardi (1) et Nocca (23) show averages higher than 20%.
However, it should be noticed that the technique's evolution (anatomic dissection approach and the constitution of last generation rings) seem to have reduced the average of this complication here depicted, it is only 4 years from the main obstacle of this procedure.

An advantage in using the so-called Pars Flaccida approached described by Forsell, which needs a longer band (longer that 10 cm) compared to the perigastric technique, is outlined in the retrospective comparative study by Nocca (23). Moreover, the Pars Flaccida technique reduces the perforation risk due to the distal dissection path from the gastric inner wall (16). This complication has not been found anywhere else in our series.

The use of the “compression-based” ring (SAGB or MID BAND) is evoked by many experts in order to reduce dilatation/sliding risk (13).

In a comparative study consisting of 40 patients, Zimmerman et al. report, in 3 years, 4 dilatation/sliding cases with the Lap Band ring and none with the Suédois (34). Frering obtained a sliding rate of 4.1% with the Lap Band ring as opposed 0% with the Suédois ring (13) and Espalieu reports a rate of 10% with the Lap Band ring as opposed 0% with the Suédois ring (8). On the other hand, Favretti et al. (9), on a population of 890 patients operated with the perigastric technique and followed-up over 5 years (with only 3% of sight loss) had 2% of sliding type complications and 0.8% of complications due to the ring’s wrong position (corresponding according to the author to the premature stage of the dilatation of the gastric pouch. However, it is necessary that the ring is placed too high on the stomach in order to obtain a “virtual” pouch.

The risk of migration of the ring through the gastric inner wall constitutes a worry as regards long term study. Today, our study shows only one migration case (1.64%) as a consequence of an infection of the outer layer of cutaneous origin (staphylococcus aurous). A very important backward step is, however, necessary in order to evaluate this complication as the average time of apparition described in the literature is comprised between 14 and 22 months (22). The performance of a gastric fibroscopy for any infections of the outer layer is today of general consensus for detecting ring migration.

Other problems concerning the implantable injection chamber are rather irritating than serious. The case of dislocation of the outer layer in our series has been treated with local anaesthetics. The implantable injection chamber’s fixation on the muscular aponeurosis with non-absorbable threads does not seem to be a determining factor to avoid this complication.

The vomiting problems could be the translation of a complication to be detected (dilatation/sliding) or the more frequent consequence of nutritional habits not adapted to restrictive techniques. The patient’s information appears to be a determining factor in order to reduce this frequency.

**CONCLUSION**

The adjustable perigastric binding technique by laparoscopy is, certainly, the intervention, the simplest offer to patients with morbid obesity. The expected efficiency at mid-term is an average of 50% loss of excessive weight. The morbidity has been reduced in preference to the placement technique with Pars Flaccida approach. The use of the MID BAND ring seems to offer, apart from its easiness of placement, very satisfactory results on short-
term analysis of our study concerning loss of weight and post-operative complications. The long-term studies are expected to confirm their results.

**Table 1:** Post-operative weight evolution

<table>
<thead>
<tr>
<th>parameter</th>
<th>n</th>
<th>average</th>
<th>gap-type</th>
<th>min</th>
<th>Q25</th>
<th>medium</th>
<th>Q75</th>
<th>max</th>
<th>Normality Test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weight at Day 0</td>
<td>60</td>
<td>113.46</td>
<td>15.33</td>
<td>88.00</td>
<td>103.00</td>
<td>110.00</td>
<td>122.00</td>
<td>150.00</td>
<td>0.01078</td>
</tr>
<tr>
<td>Ideal weight: Lorenz’s index</td>
<td>60</td>
<td>56.87</td>
<td>5.21</td>
<td>50.00</td>
<td>53.00</td>
<td>56.00</td>
<td>58.50</td>
<td>71.00</td>
<td>0.00001</td>
</tr>
<tr>
<td>Weight at 1 months</td>
<td>53</td>
<td>106.05</td>
<td>14.93</td>
<td>78.00</td>
<td>94.00</td>
<td>104.00</td>
<td>114.00</td>
<td>144.00</td>
<td>0.04648</td>
</tr>
<tr>
<td>Weight at 3 months</td>
<td>32</td>
<td>97.00</td>
<td>12.59</td>
<td>75.00</td>
<td>88.50</td>
<td>96.50</td>
<td>104.00</td>
<td>130.00</td>
<td>0.66598</td>
</tr>
<tr>
<td>Weight at 6 months</td>
<td>30</td>
<td>96.39</td>
<td>15.31</td>
<td>75.00</td>
<td>83.00</td>
<td>92.50</td>
<td>104.00</td>
<td>129.00</td>
<td>0.05174</td>
</tr>
<tr>
<td>Weight excess at Day 0</td>
<td>60</td>
<td>56.59</td>
<td>12.56</td>
<td>34.50</td>
<td>47.50</td>
<td>54.75</td>
<td>62.25</td>
<td>92.50</td>
<td>0.00631</td>
</tr>
<tr>
<td>Weight excess at 1 months</td>
<td>53</td>
<td>49.24</td>
<td>12.24</td>
<td>24.50</td>
<td>39.50</td>
<td>48.00</td>
<td>54.50</td>
<td>86.50</td>
<td>0.05388</td>
</tr>
<tr>
<td>Weight excess at 3 months</td>
<td>32</td>
<td>40.27</td>
<td>10.22</td>
<td>21.50</td>
<td>32.25</td>
<td>39.50</td>
<td>46.50</td>
<td>64.50</td>
<td>0.82174</td>
</tr>
<tr>
<td>Weight excess at 6 months</td>
<td>30</td>
<td>39.05</td>
<td>12.85</td>
<td>19.00</td>
<td>27.00</td>
<td>39.75</td>
<td>46.25</td>
<td>64.50</td>
<td>0.09169</td>
</tr>
<tr>
<td>Weight excess at 12 months</td>
<td>30</td>
<td>28.058</td>
<td>10.957</td>
<td>9.000</td>
<td>20.500</td>
<td>29.750</td>
<td>35.000</td>
<td>51.500</td>
<td>0.89040</td>
</tr>
<tr>
<td>% loss of excess weight at 1 month</td>
<td>53</td>
<td>12.453</td>
<td>5.707</td>
<td>1.802</td>
<td>9.174</td>
<td>11.667</td>
<td>13.953</td>
<td>29.091</td>
<td>0.00673</td>
</tr>
<tr>
<td>% loss of excess weight at 3 months</td>
<td>32</td>
<td>25.438</td>
<td>10.689</td>
<td>4.211</td>
<td>17.393</td>
<td>25.410</td>
<td>32.208</td>
<td>50.909</td>
<td>0.97861</td>
</tr>
<tr>
<td>% loss of excess weight at 6 months</td>
<td>30</td>
<td>31.65</td>
<td>13.63</td>
<td>10.53</td>
<td>20.62</td>
<td>30.96</td>
<td>39.53</td>
<td>62.75</td>
<td>0.62295</td>
</tr>
<tr>
<td>% loss of excess weight at 12 months</td>
<td>30</td>
<td>50.70</td>
<td>14.03</td>
<td>28.80</td>
<td>41.14</td>
<td>46.70</td>
<td>60.87</td>
<td>81.63</td>
<td>0.11893</td>
</tr>
</tbody>
</table>

**Table 2: Post-operative morbidity**

<table>
<thead>
<tr>
<th>Event</th>
<th>Count</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dilatation of pouch/sliding</td>
<td>1</td>
<td>1.64%</td>
</tr>
<tr>
<td>Re-intervention</td>
<td>2</td>
<td>3.28%</td>
</tr>
<tr>
<td>Vomiting</td>
<td>15</td>
<td>24%</td>
</tr>
<tr>
<td>Outer layer problems/catheter</td>
<td>2</td>
<td>3.28%</td>
</tr>
<tr>
<td>Nutritional blockage</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>Gastro-oesophageal reflux</td>
<td>3</td>
<td>4.92%</td>
</tr>
<tr>
<td>Eventration</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>Vein thrombosis</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>Pulmonary embolism</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>Mega oesophagus</td>
<td>0</td>
<td>0%</td>
</tr>
</tbody>
</table>
References:

Figure 1: MIDBAND ring before being used

Figure 2: MIDBAND ring in closed position

Figure 3: Passage of catheter through the retrogastric channel

Figure 4: Placement of the ring with Pars Flaccida approach

Figure 5: Gastric seroserous sutures
Institution: Cairo University Hospital & Mokattam Surgery Center

Abstract: 240 words

Methods: 280 morbidly obese patients having a body mass index above 40 kg/m2 underwent laparoscopic adjustable gastric banding using the MID band. The standard 4 trocar technique was used in all of our patients & placement of the band was done through the pars Flaccida. The endoilluminator was use to delineate the esphago-gastric junction in all cases. A pouch was done in the first 150 cases with three antislippage sutures. No pouch was done to the following 130 cases with only one stitch between fundus of the stomach & the adventia infront of the esophagus.

Results: All cases were done via laparoscopy. The morbidity was minimal due to previous experience using other bands. Injection port complications were in two patients with rotation & coiling of the tube. There were no mortalities in this series. The loss of weight after one year was comparable to our previous experience with other bands & the patients were more satisfied with the small sized injection port. There was a slippage in one case in the group where the pouch was done. Minimal follow-up was one year.

Conclusions: MIDBAND in short term at least is comparable to other bands in effectiveness. It is softer with a small injection port with a simpler insertion technique. Placement of the band at the esophagogastriic region with no pouch could be the safest position of the band. Long term follow-up is recommended.
Laparoscopic adjustable gastric banding is one of the most frequent procedures for obesity treatment in France. Different reports show that complication rates are variable. The aim of this work is to report how complications related to this procedure are managed.

From January 1997 to February 2003, 3500 patients underwent laparoscopic adjustable gastric banding. Complications related to the port site have been excluded from this report. The worst complication was slipping, which occurred in 130 patients. Most of the cases were related to LASGB. In most cases, the symptom was liquid intolerance. Pain was an emergency sign. All patients treated for these symptoms in our institution had the band removed by laparoscopy. One of the patients referred to another institution and underwent gastrectomy.

Gastric erosion is the second complication related to gastric banding. It concerns 32 patients. Symptoms were weight increase and back pain. Diagnosis was performed by upper GI in most of the cases. For the first case, the band was removed by endoscopy and all the other cases were treated laparoscopically. Mean hospitalization length was 6 days. There were no deaths. The laparoscopic film shows how to manage all these complications.

The complication rate related to gastric banding is decreasing. Laparoscopic treatment in experienced institutions can decrease the side effects and improve the safety of gastric banding.
Laparoscopic adjustable gastric banding is widely used for obesity control. This approach is still controversial. This study reports experience for obesity control with this procedure to avoid complications and side-effects. It focuses on the impact according to the type of band and the follow-up organization.

From January 1997 to February 2003, 3500 patients were operated on for morbid obesity. All had laparoscopic adjustable gastric banding: 900 using LAPBAND, 1400 OBTECH and 1200 MIDBAND. There were 210 patients operated on after VBG failure. 85% of these patients were female. The mean BMI was 44.5.

All patients were discharged on the first post-operative day. Surgeons and nutritionists routinely perform the fill. Working by phone, assistants had a list of questions to detect complications which needed emergency advice. The patient can himself refer to the emergency services and a doctor can empty the band.

**Results**

There were no deaths.

<table>
<thead>
<tr>
<th></th>
<th>LAPBAND</th>
<th>OBTECH</th>
<th>MIDBAND</th>
</tr>
</thead>
<tbody>
<tr>
<td>Slippage</td>
<td>90</td>
<td>42</td>
<td>2</td>
</tr>
<tr>
<td>Gastric erosion</td>
<td>7</td>
<td>27</td>
<td>1</td>
</tr>
<tr>
<td>other</td>
<td>1</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Total removal</td>
<td>98 (10.8%)</td>
<td>69 (4.9%)</td>
<td>4 (0.3%)</td>
</tr>
</tbody>
</table>

95% of complications occurred in the first 2 years after surgery. The most worrying complication was slipping with LAPBAND. One patient had gastrectomy in another institution following LAPBAND slipping. In the other cases, after emptying the band because of persistent pain, emergency laparoscopy was performed and the band removed because of gastric ischemia.

Gastric erosion can be managed without emergency. All but one of the bands were removed laparoscopically.

**Conclusion**

To avoid serious complications we use only soft low pressure bands. The staff is trained to detect complications. With all these precautionary measures, laparoscopic adjustable gastric banding is, for us, a very safe procedure for obesity control can be proposed as a first approach.