

LAPAROSCOPIC GASTRIC PLICATION – OUR EXPERIENCE

C. Duta¹, Carmen Neamtu^{2*}, Dana Barjica¹, A.Dobrescu¹, C. Lazar¹, F.Lazar¹, B. Totolici²

¹ „Victor Babes” University of Medicine and Pharmacy Timisoara, Second Surgical Clinic, Timisoara, Romania

² „Vasile Goldis” Western University of Arad – Faculty of Medicine, Pharmacy and Dental Medicine, Arad, Romania

ABSTRACT. Laparoscopic gastric plication is a bariatric procedure relatively recently introduced in the therapeutic arsenal of morbid obesity. First mentioned in 2007 by Talebpour (Talebpour M et al., 2007), it became more popular as bariatric procedure among patients who want a reversible bariatric procedure with good results on weight loss. Not involving stomach cutting, as well as longitudinal gastrectomy, gastric plication has much lower costs, which is another aspect appreciated by patients. We performed this technique for the first time in June 2009 and the results are very good. The study group included 39 patients and covers the period June 2009 - December 2012. 35 interventions were performed in the Surgery Clinic II of County Hospital in Timisoara, the remaining 4 in a private health service. The preponderance is in favor of women – with a women / men ration of 2 / 1. Mean age is 36.3 years (range between 25 – 58 years). Mean postoperative follow up period is of 12 months for 87% of patients. Postoperative complications - vomiting - we had 12 cases - all with favorable outcomes under conservative treatment. No other intra and postoperative complications. Simultaneously in two patients laparoscopic treatment was performed for incisional abdominal hernia and in one patient a gastric band removal and a laparoscopic gastric plication after gastric band removal. Remission rate of comorbidities was 40% for diabetes mellitus type II and all 15 cases of hypertension were controlled with less medication. Mortality was 0. Excessive weight loss on 1 month - 63.5%, on 3 months – 69.2%, on 6 months – 71.5% and on 12 months – 70.8%. Although it is a new bariatric procedure, immediate results on weight loss and on remission of comorbidities is good. For long term results, we need a longer follow-up of cases.

KEYWORDS: Laparoscopic gastric plication – LGP, diabetes mellitus – DM, arterial hypertension – AHT.

INTRODUCTION

Laparoscopic gastric plication is a technique relatively recently introduced in the therapeutic arsenal for morbid obesity. First mentioned by Talebpour (Talebpour M et al., 2007) in 2007, this procedure is more and more popular due to its good results on weight loss. The technique for gastric plication involves an important reduction of gastric reservoir and it is combined with advantages of laparoscopic surgery. Another aspect appreciated by patients is the reversibility of the procedure. Not involving a gastric resection, the procedure is low cost compared to other bariatric techniques. Being a new method for treatment of morbid obesity, there are only few articles worldwide that mention short term results for it. The long term results are still waited and need a greater follow up period.

MATERIAL AND METHOD

It is a retrospective study including 39 patients who underwent LGP (Fig 1-3) between

June 2009 and December 2012. 35 patients performed surgery in Surgical Clinic II in County Hospital Timisoara, the rest of 4 performed surgery in a private hospital. The mean follow-up period was 12 month and the follow up percent was 87% (34 patients followed). We studied: sex ratio, age, distribution on years, postoperative complications, comorbidities, the remission of comorbidities, mortality rate, ESWL.

RESULTS

There were 26 female and 13 male patients included in this study. Sex ratio was 2/1 female/male. The mean age was 36.3 (limits 25 - 58 years). The most affected age was the third decade and the fourth decade with 16 cases and 14 cases, respectively. The mean operation time was 63 ± 12 minutes. The average blood loss was 50 ± 15 ml. Discharge period – 3 days. Repartition on years underline year 2012 when we had 18 cases, followed by year 2011 with 12 cases, year 2010

had 5 cases and in 2009 we started with 4 cases. The mean BMI was 37.3 (limits 35 – 43.5)

The postoperative complications rate was 30.76%. There were 12 patients with complications – vomiting was the only type of complication after LGP. Among the 12 patients, 10 stopped vomiting after 3 - 5 days and the other 2 after 2 weeks. All went very good with conservatory treatment: antisecretory drugs and antiemetics.

We had 28 cases with comorbidities. The mean rate was 71.79%. There were 10 with type II

DM, 15 cases of AHT, one case of multiple sclerosis and 2 cases of concomitant incisional hernia.

Remission of comorbidities is one of the major target of bariatric surgery. We had 4 cases of type II DM cured – 40% complete remission and 6 cases of improved type II DM, all 15 cases of AHT was controlled with less medication.

No mortality in our lot. EWL on 1 month - 63.5%, on 3 months – 69.2%, on 6 months – 71.5% and on 12 months – 70.8%.

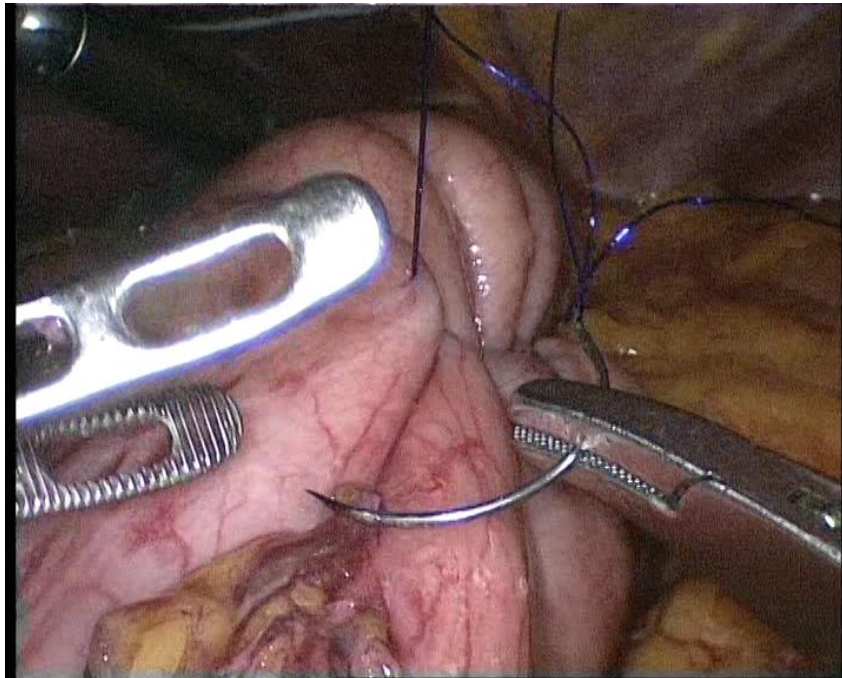


Figure 1: First layer of gastric plication.

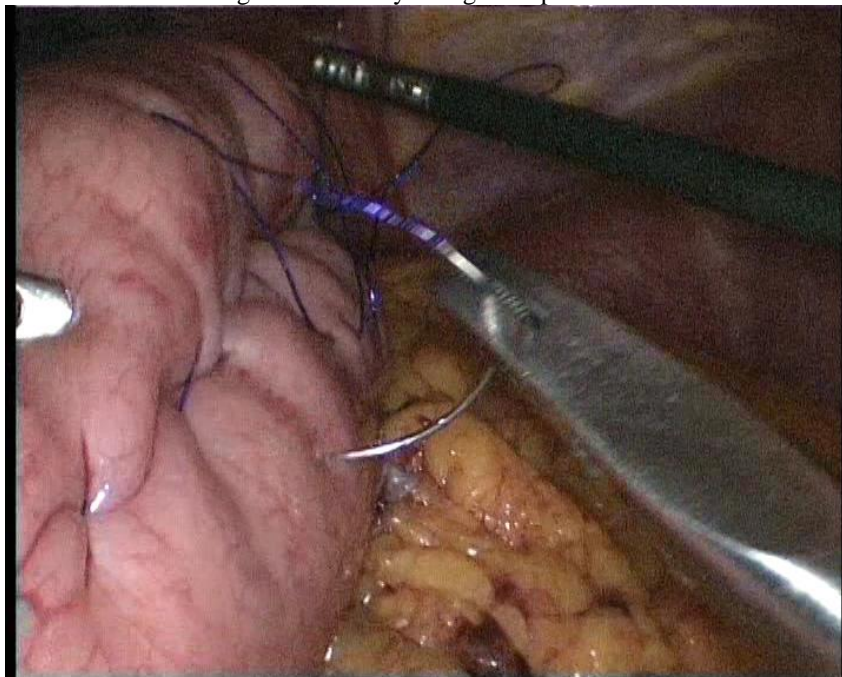


Figure 2. The second layer of gastric plication.

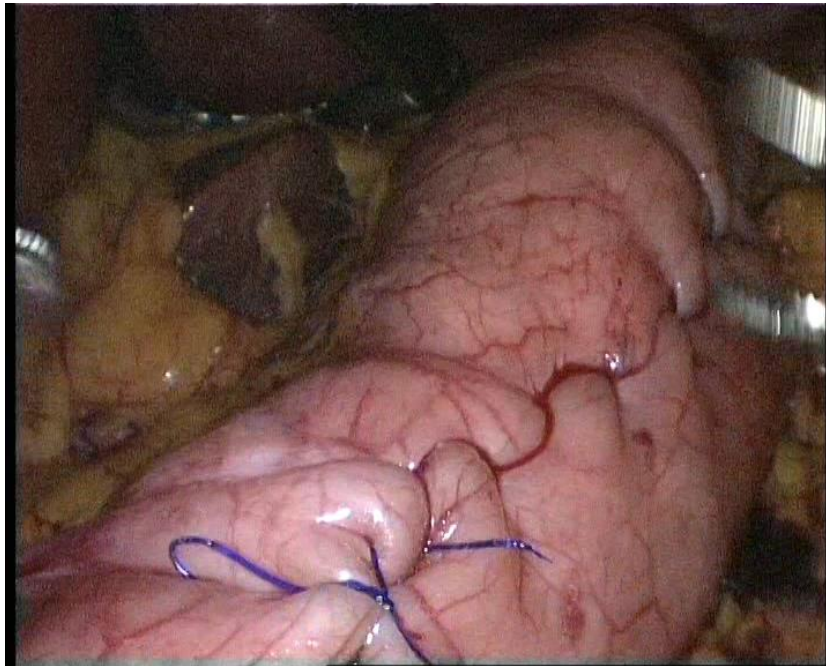


Figure 3. The final aspect of gastric plication.

DISCUSSION

LGP is a relatively new procedure for treatment of obese patients. Less invasive and reversible, with low costs, this procedure may become more and more popular. On our studied lot we performed LGP in double layer with continuous suture of polypropylene monofilament nonabsorbable suture – blue 2-0. We sustain the two layer procedure because of less postoperative complications like nausea or vomiting. This is in accordance with Talebpour (Talebpour M et al., 2007) in 2007 who mentions the one and two layer procedure, but not the three layer one. We also sustain the 36 Fr bougie because of a good calibration of stomach and of course less vomiting. This calibration is mentioned by Skrekas et al (Skrekas G. et al., 2011) in 2011.

Concerning the mean operatory time our data fits the literature. So, Niazi et al (Niazi M et al., 2013) in 2013 describe a mean operative time of 95 minutes while Abdelbaki et al (Abdelbaki TN et al., 2012) in 2012 performed the procedure in 40 to 150 minutes.

Our technique involves a laparoscopic plication of the great curvature of the stomach. Other authors also sustain the LGP of the great curvature – Menchaca et al. (Menchaca HJ et al., 2011) in 2011 on an experimental study on hound dogs presents the gastric plication especially on the great curvature as a feasible procedure and Brethauer et al (Brethauer SA et al., 2011) in 2011 consider that LGP on the great curvature of the stomach induces a better EWL compared to anterior plication (53.4% vs 23.3%).

Our discharge period is low due to reduced complication rate. Ramos et al (Ramos A et al., 2010) in 2010 mentioned the same hospitalization period.

Our mean rate of complications is fitting the literature data. We did not have major complications, only minor – nausea and vomiting. All had favorable evolution under conservatory treatment. Kourkoulos et al (Kourkoulos M et al., 2012) in 2012 mentioned a lower rate of complications – 15.1%, but with major complications, too. To solve them there were 3% reinterventions. We have no reinterventions. Pujol Gebelli et al (Pujol Gebelli J et al., 2011) in 2011 describe the same complications post LGP as we do – vomiting, but he also describes 2 cases of reinterventions for severe vomiting. Our 2 cases of severe vomiting remitted on conservatory treatment in 2 weeks. A rare complications is described by Hii et al (Hii MW et al., 2012) in 2012 - a gastro-gastric herniation surgically solved.

We have better results than described in literature of LGP on remission of comorbidities. Taha et al (Taha O et al., 2012) in 2012 mentioned a low result of this bariatric procedure on remission of type II DM. We have good results with improvement of the disease and cured cases. Also, the AHT had a good postoperative evolution, being controlled with less medication.

There is still controversy in literature on doing or not the sleeve gastrectomy in the same session after removing a gastric band. In our study, we performed in one female patient LGP after removing gastric band and the procedure is less invasive than laparoscopic sleeve gastrectomy, so

may be an option for this kind of situations. Of course many cases would confirm or not this hypothesis.

Our EWL is similar with the one described by Talebpour et al (Talebpour M et al., 2012) in 2012 on a longer follow up (its own is of 24 months). We had no cases of weight regain, even if other authors mentioned it – Talebpour et al (Talebpour M et al., 2012) – reported weight regain of 5.5% at 4 years and 31% at 5 years. We need a longer follow up period to report results on this problem. Other authors – Copaescu (Copaescu C et al., 2011) in 2011 mentioned an EWL for LGP similar with laparoscopic sleeve gastrectomy, superior to laparoscopic gastric banding and inferior to laparoscopic gastric by – pass.

CONCLUSIONS

A relatively new bariatric procedure, LGP is not an easy technique for obese patients but is a feasible and with lower costs. LGP has good outcomes on comorbidities and induce a good EWL on short term follow up. May also be performed after removing gastric band in the same session. For further results we need a longer follow up period.

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AUTHOR CONTRIBUTION

All authors have contributed equally to the present work.

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*Correspondence

Carmen Neamtu
 Str. Gradinarilor Nr.43
 Arad, Romania
 Mobile: 0723225793
 Mail: carmen.neamtu@gmail.com