

ESOPHAGOCARDIOPLASTY AS SURGICAL TREATMENT IN RELAPSED NON ADVANCED MEGAESOPHAGUS

Esofagocardioplastia no tratamento cirúrgico do megaesôfago não avançado recidivado

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ABSTRACT - Background - It has always been very controversial to choose an ideal operation for patients with no advanced recurrent megaesophagus after previous treatment. The various existing techniques and the different degrees of disease are the major factors to this difficulty. **Aim** - To evaluate the early and late results of the Serra-Doria esophagocardioplasty in patients who had recurrence of symptoms in non-advanced megaesophagus after having been submitted to cardiomyotomy. **Methods** - Were studied 32 patients. The age ranged from 32 to 63 years. Nineteen had mild and 13 moderate dysphagia, and 14 had some degree of regurgitation. These subjects underwent the Serra-Doria esophagocardioplasty and were evaluated the local and systemic complications occurred postoperatively. **Results** - After the procedure could be followed 27 patients, 22 began to show normal swallowing, five mild dysphagia and three remained with some regurgitation. No patient died. Three had early pneumonia and in one occurred anastomotic leak. **Conclusions** - The Serra-Doria esophagocardioplasty is adequate procedure for the surgical treatment of relapsed non advanced megaesophagus.

HEADINGS - Esophageal achalasia. Surgery.

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RESUMO – Racional - Sempre foi muito controversa a escolha de uma operação ideal para portadores de megaesôfago não avançado com recidiva após tratamento prévio. As várias técnicas existentes e os diferentes graus da doença são os maiores fatores para essa dificuldade. **Objetivo** - Avaliar os resultados precoces e tardios da esofagocardioplastia à Serra-Dória em pacientes que apresentaram recidiva dos sintomas de megaesôfago não avançado após terem sido previamente submetidos à cardiomiotomia. **Método** - Foram estudados 32 pacientes. A idade variou de 32 a 63 anos. Dezenove apresentavam disfagia moderada e 13 leve, sendo que 14 tinham algum grau de regurgitação. Esses indivíduos foram submetidos à esofagocardioplastia à Serra-Dória e foram avaliadas as complicações sistêmicas e locais ocorridas no pós-operatório. **Resultados** - Após o procedimento, puderam ser acompanhados 27 pacientes, sendo que 22 passaram a apresentar deglutição normal, cinco disfagia leve e três permaneceram com alguma regurgitação. Nenhum paciente morreu. Três tiveram pneumonia precoce e em um ocorreu fístula anastomótica. **Conclusões** - A esofagocardioplastia à Serra-Dória é procedimento adequado para o tratamento cirúrgico do megaesôfago recidivado não avançado.

DESCRITORES - Acalásia esofágica. Cirurgia.

INTRODUCTION

Despite the successful government programs conducted mainly in the 70s and 80s, Chagas disease is still endemic in 21 Latin American countries and is estimated to be between 16 million to 18 million the number of infected people. It is believed that more than 100 million are at risk of contracting the disease⁸. In Brazil, it is estimated that there are still nearly eight million carriers of *Trypanosoma Cruzy*, and, for years, an average of 17,000 individuals die from the disease. In turn, 8% to 40% of patients with Chagas' disease esophageal manifestation is present in varying degrees. Besides the low quality of life by the presence of dysphagia - often intensive¹⁴ -, the disease represents a considerable socioeconomic problem in our country.

It is therefore important to provide effective treatment with low

morbidity to rescue the swallowing process. Surgical treatment is the best way to provide relief of symptoms and improvement of nutritional status. Myotomy with fundoplication, simple and conservative operation, has provided better results compared to other techniques^{2,5,12}.

However, controversies arise as to what would be the best surgical option for the treatment of achalasia symptoms in recurrent cases after previous surgical treatment. The alternatives proposed are variable depending on the cause of recurrence.

For the advanced megaesophagus, the treatment of choice has been esophagectomy without thoracotomy or esophageal mucosectomy with conservation of muscular layer, both allied to the transposition of the stomach to the cervical region^{3,15,16}.

Regarding the non-advanced megaesophagus with recurrence due to incomplete myotomy or scar fibrosis, has been recommended a new myotomy with fundoplication^{2,6,22}.

With the advent of esophagocardioplasty with partial gastrectomy with Roux-en-Y, proposed by Serra-Doria et al.^{23,25}, this procedure in recent years, began to have greater use by other authors and has been also used for the treatment of both relapsed megaesophagus as the first treatment^{9,18,19}. However, no series showed conclusion about the selective indication to a certain stage of esophageal dilatation. The published results involve patients with different degrees of megaesophagus^{1,18}. It was suggested the use of the Serra-Doria esophagocardioplasty^{23,25} only for patients with recurrent symptoms after first operation and not having advanced megaesophagus.

The objective of this study was to evaluate the results of esophagocardioplasty with Roux-en-Y partial gastrectomy in relation to local and systemic complications in patients with non-advanced megaesophagus and recurrent symptoms after prior myotomy.

METHOD

Were retrospectively studied 32 patients treated with the Serra-Doria esophagocardioplasty during the period of January 1996 to December 2010 and assisted in the Service of Surgery, Hospital Celso Pierro of the PUC/Campinas, Campinas, SP, Brazil. Surgical indication was symptomatic recurrence after previous cardiomyotomy. Twenty-three patients (71.8%) were male and nine (28.2%) females, with ages between 32 and 63 years. The time prior to the completion of cardiomyotomy ranged from 21 months to 11 years. The early return of symptoms ranged from 14 to 42 months. All patients had immunofluorescence positive for Chagas disease.

In the preoperative clinical evaluation, 19 patients (19.3%) had dysphagia to soft foods and 13

(40.7%), dysphagia for solid food. Fourteen (43.7%) had intermittent episodes of regurgitation and 18 (56.2%) reported weight loss of 5 kg to 12 kg in time varying from 12 to 18 months. Nutritional assessment performed preoperatively showed that all patients were able to undergo the proposed surgery.

In the radiological evaluation all had megaesophagus grade II (not advanced), according to the Resende et al classification²⁰. In endoscopic evaluation, 19 patients (59.3%) had Los Angeles oesophagitis grade A or B. In the remaining patients the examination was normal. Manometric study was performed in 15 patients (46.8%) with evident decrease in lower esophageal sphincter relaxation.

The technique consisted basically of the following steps: upper median laparotomy, local release of adhesions; isolation of the esophageal body; bilateral truncal vagotomy; laterolateral esophagogastric anastomosis, gastrectomy with Roux-en-Y anastomosis terminolateral. The esophagogastric anastomosis was always performed by hand suture.

The postoperative evaluation focused systemic complications (cardiovascular and pleuropulmonary) and local (dehiscence of the esophagogastric and gastrojejunal anastomosis, and stenosis of the esophagogastric anastomosis).

The esophagogastric anastomosis and/or gastrojejunal dehiscence were diagnosed by clinical, hemodynamic changes and exit or absence of digestive secretion by abdominal drain between the 3rd and 7th day, postoperatively. After those days, if there were no clinical signs of anastomotic fistula, contrast radiography was performed to evaluate the existence of contrast extravasation by anastomoses. The oral diet was released in the absence of complications.

In relation to stenosis of the esophagogastric anastomosis, the clinical diagnosis (taking into account the symptoms of dysphagia) with proven radiological and endoscopic findings after the 30th day after surgery were used to confirm the decrease in diameter esophagogastric anastomosis.

It was also evaluated the quality of life of patients in relation to swallowing characterized as mild dysphagia (for solids), moderate (for soft foods) and heavy (liquid food).

RESULTS

In the assessment until the 30th day after surgery, three patients (9.3%) had pulmonary infection with a good outcome with medical therapy in two. The third had pleural empyema submitted to thoracoscopy with good result. During the operation in two patients (6.2%) complications occurred, one opening of the esophagus during the dissection followed by primary suture, and splenic injury resulting in splenectomy. This last patient was among those who

developed pneumonia postoperatively. Both had good outcome. Another patient (3.1%) presented at the 5th day after surgery, digestive secretion output from the abdominal drain, featuring esophagogastric anastomotic dehiscence with subsequent fistula. Due to absence of local or systemic other complications, it was decided to maintain conservative treatment and parenteral nutrition; the fistula was closed 17 days after surgery. Radiological confirmation allowed oral feeding. However, at 22 days after surgery, he presented clinical and laboratory findings of infection, with abdominal computed tomography showing subphrenic abscess. Abdominal drainage was performed by left subcostal laparotomy, with good evolution and discharge on 31th day postoperatively. Esophagogram was performed in the other patients (96.7%) on day 7 showing good transit through anastomoses and no contrast extravasation, allowing progressive oral diet. The patients were discharged between the 9th and 14th days postoperatively. No patient died from the procedure.

In 27 patients (84.3%) medium and long term evaluation were done, with time varying between six months and 13 years postoperatively (mean 7.2 years). It could not be performed in five due to loss of follow-up.

Of these 27 patients, five (18.5%) had mild and intermittent dysphagia from the 6th month after surgery with no endoscopic or radiological evidence of any abnormality in the esophagogastric anastomosis. The other 22 (81.5%) reported being satisfied with the operation and had improved the quality of their lives with normal swallowing. Three (11.1%) reported intermittent episodes of regurgitation (Table 1).

TABELE 1 – Results of pre and postoperative

	Pré-operative evaluation	Late post-operative evaluation
Normal swallowing	0	22
Mild dysphagia	13	5
Moderate dysphagia	19	0
Severe dysphagia	0	0
Regurgitation	14	3
Total patients	32	27

DISCUSSION

Surgical treatment of recurrent achalasia is still controversial due to a number of factors such as the occurrence of technical errors during the execution of the first operation, the inappropriate choice of surgical technique for each degree of megaesophagus and the variety of existing techniques with low efficacy^{2,17}. Furthermore, the different times of follow-up, the anatomical changes done with the prior

operation, the nutritional deficiency normally existing, and the lack of knowledge of which was the first operation, are major determinants for the difficulties in choosing the ideal re-operation^{2,14,21}.

The myotomy is the procedure most commonly used for achalasia treatment, as so, most of the series refer recurrence of dysphagia after this procedure. The symptom is usually consequent to incomplete myotomy, scarring at the gastroesophageal junction and/or gastroesophageal reflux with esophagitis, especially in patients operated for treatment of non-advanced megaesophagus^{2,12,18,21}. Recurrence of symptoms usually occurs by incomplete myotomy in the first month, whereas the consequent scarring and/or esophagitis, manifested one to two years after^{2,7,18}.

This justifies the importance of good assessment of patients' medical history, and this process was properly performed in this study. In 32 patients in the series myotomy was the operation of choice, and the recurrence of symptoms in all came a year after this procedure. It is therefore suggested that relapse might have been caused by scarring and/or reflux oesophagitis.

In non-advanced megaesophagus, some authors have recommended new myotomy with partial fundoplication on dysphagia by incomplete myotomy or scar fibrosis^{2,11,18,21,22}. However, in a previous study in which re-myotomy was performed in patients with grade II and megaesophagus with recurrent symptoms, the results were unsatisfactory because of the seven patients, six (85.7%) had early recurrence of dysphagia. This fact shows the need of different procedure for the treatment of relapsed non advanced megaesophagus.

A few years ago, Holt and Large¹³ suggested the use of the gastrectomy with Roux-en-Y as re-operation for megaesophagus secondary to severe esophagitis secondary to Gröndhal operation¹⁰. Based on this, Serra-Doria et al.²³ advocated this type of procedure, involving partial gastrectomy with Roux-en-Y in Gröndhal cardioplasty, in order to facilitate esophageal emptying and prevent mixed reflux into the esophagus. Since then, this procedure has been known, especially in Brazil, such as Serra-Doria operation¹⁸. So, several authors began to perform this technique, applying it in no treated and also in relapsed cases. It was also indicated in advanced megaesophagus^{2,18,25,24}.

Based on these authors, the idea of applying the procedure proposed by Serra-Doria in relapsed megaesophagus was done in this study. The merit of this study was the selection of all patients with the same degree of the disease.

Previous surgery causes adhesions in esophagogastric junction with the neighboring structures. This fact can lead to perforation during dissection of the esophagus and pleural injury with resultant pneumothorax. Moreover, the dissection of

the esophagogastric junction brings increased risk of impairing local blood supply leading to suture dehiscence and fistula formation^{1,2,12,18}.

Silva-Doria²⁴ in a study of 410 patients with achalasia from initial to advanced, states had four deaths (1.0%). One was for esophagogastric anastomotic fistula in recurrent megaesophagus with large diameter making it difficult to dissect the body and predisposing the formation of the fistula.

In this series, only one patient had esophagogastric anastomotic leak, occurred due the greater difficulty in dissecting the adhesions from previous operation, favoring local devascularization. The fact that the patient had initial megaesophagus should have favored the good outcome with conservative treatment. A lung infection in three patients was triggered by malnutrition, natural in patients with achalasia even in non advanced degrees^{1,2,24}.

Although, in literature, the early assessment have focused few complications with the Serra-Doria procedure, long-term series have demonstrated some difficulty in assessing the real benefit of this procedure in the return to swallowing. This is mainly due to loss of follow-up of some patients and samples with different degrees. This can be verified in the experience of Ponciano et al.¹⁸ who analyzed 20 patients with relapsed megaesophagus with different degrees, showing 42.2% of mild to moderate dysphagia at a mean follow-up of 22.3 months, only 29, 4% of patients had gained weight. The higher incidence of recurrence of symptoms (especially dysphagia), was in with megaesophagus. The same happened with the study of Alves et al.¹, which examined 50 patients with relapsed megaesophagus and presented good results in 92.5% of patients following a month. The current experience of the authors of this paper, with 27 patients in the mean time of 7.2 years, demonstrated the validity of the proposed surgical procedure, because 81.5% achieved normal swallowing. The other five patients, although with some symptoms, felt happy because in the pre-operative period they had moderate and progressive dysphagia and, post-operatively, there were with mild and intermittent dysphagia. By the fact that both upper endoscopy and contrast radiography have shown good transit and no abnormality in the esophagogastric anastomosis, the symptoms can be justified by the commitment of the motility of the esophageal body consequent to chagasic megaesophagus. This hypothesis is also reported by other authors¹⁸.

CONCLUSION

The Serra-Dória esophagocardioplasty is appropriate procedure for the surgical treatment of relapsed non-advanced megaesophagus.

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