One size fits all: laparoscopic Heller’s myotomy for the treatment of achalasia irrespective of the degree of dilatation

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ABSTRACT

Laparoscopic Heller’s myotomy is the most common surgical procedure to treat achalasia. It is the most accepted therapy for non-advanced stages of the disease. In the setting of advanced disease with marked esophageal dilatation or sigmoid-shaped esophagus the ideal surgical procedure is debatable. Esophagectomy is believed by several authors to be the operation of choice in these cases. Others, however, opt for less invasive alternatives. Laparoscopic Heller’s myotomy has been shown to be a safe and resourceful alternative in end-stage achalasia as well.

INTRODUCTION

Achalasia is a rare neurodegenerative primary esophageal motor disorder characterized by abnormal lower esophageal sphincter relaxation and aperistalsis[1]. The disease may be idiopathic[2] or secondary to Chagas’ disease - a tropical disease common in Latin America[3], although both forms have distinct etiology they share the same pathophysiology. End-stage disease with marked esophageal dilatation or sigmoid-shaped esophagus is; however, more frequent in Chagas’ disease patients [Figure 1][4].

The degree of esophageal dilatation is used to grade the severity of the disease and may be used as a guide to tailor treatment according to some authors[5]. There is no consensus on the threshold of esophageal diameter to consider the disease as end-stage. While some adopt the limit in 6 cm[6], others prefer 7 cm[7]. In Brazil, 4 different stages of esophageal dilatation are considered[8] and end-stage disease is defined by diameterover 10 cm[9].

Laparoscopic Heller’s myotomy (LHM) is the most common surgical procedure to treat achalasia. It is the most accepted therapy for non-advanced stages of the disease[10]. In the setting of advanced disease...
with marked esophageal dilatation or sigmoid-shaped esophagus the ideal surgical procedure is debatable. Esophagectomy is believed by several authors to be the operation of choice in these cases. However, others advocate for less invasive alternatives.

This review discusses the role of LHM as the preferred treatment for achalasia irrespective of the degree of esophageal dilatation.

**LAPAROSCOPIC HELLER’S MYOTOMY ROLE IN NON-ADVANCED ACHALASIA**

LHM was described in the early 1990s and since became a wildly accepted procedure for non-advanced achalasia. Forceful pneumatic dilatation of the cardia is also a widespread primary therapy but recent meta-analyses showed inferior results to dilatation as compared to LHM. Indeed, a shift to LHM to endoscopic dilatation has occurred. LHM is associated to low rates of complications, null mortality, and excellent and long-lasting outcomes superior to 90% of dysphagia relief in most series. LHM is still the gold-standard treatment for non-advanced achalasia that must be used to compare the outcomes of other treatments such as the newly developed peroral endoscopic myotomy (POEM).

**LAPAROSCOPIC HELLER’S MYOTOMY ROLE IN END-STAGE ACHALASIA**

Esophageal dilatation is more frequent in Chagas’ disease esophagopathy compared to idiopathic achalasia with esophageal diameter over 10 cm found from 10% to 37% of the cases. This observation may explain the lack of international literature on the treatment for massive dilated esophagi. Moreover, end-stage achalasia is defined by esophageal dilatation superior to 10 cm in Brazil, thus esophagi between 6-10 cm will not be defined as advanced in the Brazilian series and will probably undergo a LHM.

Esophageal resection is the procedure historically established for end-stage achalasia in Latin America as well as globally. The number of esophagectomies for the treatment of achalasia has been decreasing after the 1990s in favor of less invasive methods since esophagectomy is associated with significant complications and mortality. Moreover, surgical risk is directly linked to the degree of esophageal dilatation. Minimally invasive techniques decreased morbidity although they are still especially considering achalasia is a benign disease. Other conservative surgical techniques were tried to minimize complications, such as cardioplasty + gastrectomy (Holt and Large procedure, known in Brazil as Serra-Dória operation), esophageal mucosectomy and endomuscular gastric tube reconstruction and laparoscopic cardioplasty. Long term results for these procedures in a significant number of patients are lacking.

Few series evaluated the results of LHM for the treatment of end-stage achalasia. Some advocate LHM as the primary option for advanced diseases based on the idea that an esophagectomy could be avoided. Others believe that a massive and tortuous esophagus does not empty well if only the obstacle at the esophagogastric junction is alleviated and found worse results for LHM when the esophagus is dilated.

There are no prospective comparative studies comparing LHM with other techniques for end-stage achalasia. Some authors show similar outcomes (complications and dysphagia control) for LHM irrespective of the degree of esophageal dilatation. In general, excellent results may be obtained from 54-100% of the cases, with an average of almost 80%.

LHM is not more demanding in patients with massive dilated esophagus. A careful dissection of the...
mediastinal esophagus allows a straightening of the axis of the organ facilitating esophageal emptying\cite{42,44}.

Finally, LHM does not preclude a subsequent reoperation with a different technique. Recurrent dysphagia after LHM may be treated by endoscopic dilation\cite{50}, POEM\cite{50,51}, redo LHM\cite{50} cardioplasty with or without gastrectomy\cite{33,34,36}, or esophagectomy\cite{10,50}. If a bigger operation is needed, the patient would need a better overall clinical and nutritional status.

**CONCLUSION**

LHM is a valuable therapy for advanced achalasia although data comes from retrospective case series. The procedure is associated with a low rate of complications and good/excellent results in the majority of patients. LHM is not technically more demanding and it does not preclude a subsequent reoperation with a different technique if necessary.

**DECLARATIONS**

**Authors’ contributions**

Acquisition of data, drafting the article, analysis and interpretation of data, final approval of the version to be published: L.M. Del Grande

Conception and design, acquisition of data, analysis and interpretation of data, drafting the article, final approval of the version to be published: F.A.M. Herbella

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**REFERENCES**


