



## Our Achalasia Surgery Experiences with the Achalasia Surgery Review

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### Abstract

**Objective:** Achalasia means disorder and dysfunction of Lower Esophageal Sphincter. Achalasia treatment was two types: non-surgical treatments and surgical treatments. Heller myotomy is the best surgical method of achalasia. In our study, we want to present our achalasia surgical experiences and the post-operative follow-up status of the patients for contribution to the literature.

**Methods:** After getting permission from ethics committee of our university, we collected data from patients who operated for achalasia between 2011 and 2019 retrospectively in Department of General Surgery, Van Yuzuncu Yil University Faculty of Medicine. Age and gender status, diagnosis process, presence of additional esophageal disease in the distal esophagus, surgical type, length of myotomy, presence of esophageal mucosal repair, duration of hospital stay and postoperative follow-up status of the patients were evaluated.

**Findings:** In our study, there were 11 patients who underwent achalasia surgery. The mean age of patients was 31.6 (19-50) years. 63.63% (n = 7) of all cases were female and 36.37% (n = 4) were male. Apart from one case (case with hiatal hernia association) other cases were performed laparotomically. The mean myotomy length was calculated as 9.09 (8-15) cm. The mean duration of hospital stay was 5.18 (3-7) days. Among the patients only one patient had difficulty in swallowing in the first month control. But it was observed that the same patient did not have difficulty in swallowing in the third month control.

**Discussion:** In our study, considering both our post-operative complication status and the patients' 1st and 3rd month controls; we saw that achalasia surgery was performed successfully in our clinic. An important deficiency is that laparoscopic surgery is not yet performed at our desired level in our clinic.

**Keywords:** Achalasia, Heller, Myotomy.

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## Akalazya Cerrahisi Derlemesi ile Akalazya Cerrahi Deneyimlerimiz

### Öz

**Amaç:** Akalazya, Alt Özofagus Sfinkterinin bozukluğu ve disfonksiyonu anlamına gelir. Akalazya tedavisi iki tiptir: cerrahi olmayan tedaviler ve cerrahi tedaviler. Heller miyotomi, akalazyanın en iyi cerrahi tedavi yöntemidir. Çalışmamızda, akalazya cerrahisi deneyimlerimizi ve hastaların ameliyat sonrası takip durumlarını literatüre katkıda bulunmak için sunmak istiyoruz.

**Yöntemler:** Üniversitemizin etik kurulundan izin aldıktan sonra, Van Yüzüncü Yıl Üniversitesi Tıp Fakültesi Genel Cerrahi Servisi'nde 2011-2019 yılları arasında akalazya nedeniyle opere edilen hastaların verilerini retrospektif olarak topladık. Hastaların yaş ve cinsiyet durumu, tanı süreci, distal özofagusta ek özofagus hastalığının varlığı, cerrahi tipi, miyotomi uzunluğu, özofagus mukozal onarım varlığı, hastanede kalış süresi ve postoperatif takip durumu değerlendirildi.

**Bulgular:** Çalışmamızda akalazya ameliyatı geçiren 11 hasta vardı. Hastaların ortalama yaşı 31.6 (19-50) idi. Tüm olguların %63,63'ü (n = 7) kadın, %36,37'si (n = 4) erkekti. Bir olgu dışında (hiatal herni birlikteliği olan olgu) olgulara laparotomik cerrahi uygulandı. Ortalama miyotomi uzunluğu 9.09 (8-15) cm olarak hesaplandı. Ortalama hastanede kalış süresi 5.18 (3-7) gündü. Ameliyat geçiren hastalardan sadece birinde ilk ay kontrolünde yutma güçlüğü görüldü. Fakat aynı hastanın üçüncü ay kontrolünde yutma güçlüğü olmadığı görülmüştür.

**Tartışma:** Çalışmamızda hem postoperatif komplikasyon durumumuzu hem de hastaların 1. ve 3. ay kontrollerini göz önünde bulundurarak; akalazya cerrahisinin kliniğimizde başarıyla uygulandığını gördük. Önemli bir eksiklik, kliniğimizde henüz laparoskopik cerrahinin istenilen düzeyde yapılmamasıdır.

**Anahtar kelimeler:** Akalazya, Heller, Myotomi.

### INTRODUCTION

The meaning of achalasia is “non-relaxing”. It mainly means disorder and dysfunction of Lower Esophageal Sphincter (LES)<sup>1,2</sup>.

Achalasia which can be idiopathic or infectious is a rare disease. Incidence of idiopathic achalasia is estimated to be 1:100.000. Achalasia due to infection of Trypanosoma Cruzi which is called as Chagas disease is a public health problem<sup>3</sup>.

Exact pathophysiology of achalasia is unknown. Multiple possible reasons can play role like infections, heredity or immunity.

Diagnosis of achalasia is based on history of patient. Most patients apply with paradoxically dysphagia, chest pain, and regurgitation. Additional investigations such as X-Ray Radiography, esophageal manometer and endoscopy are for validation diagnose.

Nowadays, there are lots of treatment of achalasia e.g. non-surgical methods like Botox,

Pneumatic dilation, Per-Oral Endoscopic Myotomy and surgical methods like Heller myotomy(laparotomic or laparoscopic).

In our study, we want to present our achalasia surgical experiences and the post-operative follow-up status of the patients for contribution to the literature.

### METHODS

After getting permission from ethics committee of our university, we collected data from patients who operated for achalasia between 2011 and 2019 retrospectively in Department of General Surgery, Van Yuzuncu Yil University Faculty of Medicine.

Age and gender status, diagnosis process, presence of additional esophageal disease in the distal esophagus, surgical type, length of myotomy, presence of mucosal repair, duration of hospital stay and postoperative follow-up status (early period, 1st month control and 3rd month control) of the patients were evaluated.

## RESULTS

In our study, there were 11 patients who underwent achalasia surgery (**Table I**). The mean age of patients was 31.6 (19-50) years. 63.63% (n = 7) of all cases were female and 36.37% (n = 4) were male.

**Table I:** Data of All Patients.

	G	Age	Esophageal Pathology	Surgery Method	Myotomy Length(cm)	Hospital Stay(Day)	1st Month Control	3rd Month Control
1	F	45	Achalasia	HM	9	6	NP	NP
2	F	50	Achalasia	HM	8	7	Difficulty In Swallowing	NP
3	F	33	Achalasia	HM	9	6	NP	NP
4	F	27	Achalasia	HM	8	3	NP	NP
5	F	29	Achalasia + Hiatal Hernia	HM+Dor Fundoplication (Laparoscopic)	U	5	NP	NP
6	M	25	Achalasia	HM	8	5	NP	NP
7	M	37	Achalasia	HM	10	6	NP	NP
8	M	24	Achalasia	HM	11	4	NP	NP
9	F	19	Achalasia	HM	15	6	NP	NP
10	F	40	Achalasia	HM	12	5	NP	NP
11	F	19	Achalasia	HM	10	4	NP	NP

G: Gender, F: Female, M: Male, U: Unspecified, NP: No Problem, Heller Myotomy: HM.

After evaluating the patient files retrospectively, we found that the diagnosis of achalasia was based on endoscopy and esophagus-stomach-duodenum graph in our cases. According to the data of our hospital, only 2 cases were diagnosed with endoscopy, 6 cases with endoscopy and esophagus-stomach-duodenum radiograph combination. The preoperative examinations of three patients

were performed by our surgeons according to the external center examinations that we could not find in the files.

While achalasia was present in 10 cases as primary pathology; only one case had achalasia concurrently with hiatal hernia. A combination of hiatal hernia and achalasia was performed laparoscopically Nissen fundoplication and Heller myotomy. The remaining cases were operated laparotomically Heller myotomy.

The mean myotomy length was calculated as 9.09 (8-15) cm. 1 patients were left out because the myotomy length was not specified in the operation note.

During myotomy, the esophageal mucosa was opened incidentally in 5 cases and the opening area was repaired with simple sutures.

The mean duration of hospital stay was 5.18 (3-7) days. All cases were discharged without complication. Among the patients only one patient had difficulty in swallowing in the first month control. But it was observed that the same patient did not have difficulty in swallowing in the third month control.

## DISCUSSION

Achalasia was firstly described by Thomas Willis in 1674. It does not predominantly affect a particular age, race or gender<sup>5</sup>.

The mean age of achalasia was 62 years at study of Enestvedt et al<sup>6</sup>. On the other hand, O'Neill impressed a bimodal distribution for achalasia by age, with peaks at around age 30 and 60 years<sup>7,9</sup>.

Castell showed that achalasia affects both sexes equally and there are two peaks of incidence: the first in the 3rd to 4th decades and a second after 60 years of age<sup>10</sup>. At study of Duffield et al, the mean age at diagnosis was 62.1<sup>11</sup>.

In adults, achalasia occurs with equal frequency in men and women<sup>12,13</sup> and in white and non-white people<sup>6</sup>, but incidence increases with age.

In most studies, the mean age at diagnosis was over 50 years<sup>12,14</sup>.

In our study, the mean age was 31.6 (19-50) years and suitable for first peak of bimodal distribution of achalasia. Opposite of literature studies, the majority gender is female gender (7 vs. 4).

From past to present, achalasia treatment has changed depending on new methods. There are two types of treatment methods accepted today: non-surgical treatments and surgical treatments. At non-surgical treatments; medical agents (like calcium channel blockers or nitrates or botulinum toxin injection) or endoscopic balloon dilatation or POEM (Per Oral Endoscopic Myotomy) are mostly used methods for achalasia treatment.

At surgery techniques; everything was started with Heller myotomy. Heller was firstly described cardiomyotomy for achalasia surgery at 1914. Over the years, open Heller myotomy has been replaced by closed myotomy. Today, Heller myotomy is seen as the gold standard method for achalasia surgery; It is debated whether an anti-reflux procedure will be added to Heller myotomy. Nowadays, the general opinion of achalasia surgery is that laparoscopic Heller myotomy with partial fundoplication<sup>15</sup>.

Another point we want to emphasize is whether there is an accepted myotomy. In the literature, recommended myotomy area is nearly 4 to 8 cm proximal of gastro esophageal junction (GEJ) and 0.5 to 2 cm distal of GEJ<sup>16</sup>, which has been associated to lower dysphagia rates and LES resting pressures. Oelschlager et al. have shown that when the distal myotomy in the stomach was increased to 3 cm, patients were not worry about dysphagia, pyrosis or regurgitation<sup>17</sup>. Unfortunately, there was no study about comparison of short and long myotomy. Therefore there was no precise information<sup>18,19</sup>. Nevertheless, a longer myotomy may be more appropriate to prevent dysphagia<sup>20</sup>. In our

study, the mean length of myotomy was 9.09 (8-15) cm and it was compatible with the literature.

Also, we want to impress which method is the best for treatment of achalasia. Nowadays, laparoscopic surgery is the best. But there is no common thought about which laparoscopic method is the best? Although there was a trend toward minimally invasive operations for Heller myotomy, the value of adding a fundoplication was still uncertain.

Several authors believed that it Heller myotomy with anti-reflux procedure would cause recurrence of dysphagia due to lack of peristalsis<sup>21</sup>.

Topart et al<sup>22</sup> found at a 10-year follow-up after laparoscopic Heller myotomy with Nissen fundoplication that most of the patients (82%) have recurrence of symptoms, whereas Rossetti et al<sup>23</sup> described excellent dysphagia alleviation in >90% of patients, and no GER at mean follow-up of 83 months.

Di Martino et al<sup>24</sup> compared anterior and posterior fundoplication after laparoscopic Heller myotomy. They reported similar GER and dysphagia symptom scores.

Rebecchi et al compared Dor (72 case) fundoplication and Nissen (72 case) fundoplication at Heller myotomy. The incidence of GER was low and similar but dysphagia was higher after Nissen compared with only 2.8% after Dor fundoplication<sup>25</sup>.

In our study, considering both our post-operative complication status and the patients' 1st and 3rd month controls; we saw that achalasia surgery was performed successfully in our clinic. In conclusion, an important deficiency is that laparoscopic surgery is not yet performed at our desired level in our clinic. Increasing our laparoscopic case experiences; we must complete the surgical learning curve and compare our open and closed surgical experiences as soon as possible.

**Ethics Committee Approval:** After getting permission from ethics committee of our university, we collected data from patients who operated for achalasia between 2011 and 2019 retrospectively in Department of General Surgery, Van Yuzuncu Yil University Faculty of Medicine.

**Conflicts of interest:** The authors have no conflict of interests to declare.

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