

Pattern and Treatment Outcome of Patients with Achalasia Cardia After Modified Heller's Myotomy: Experience From Ethiopia

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Background: Although achalasia condition occurs in males and females with equal frequency, there are studies reporting that there is a male predominance even in Ethiopia. There appears to be striking international variations with significant differences between countries with respect to prevalence, occurrence in different sex and age groups and clinical features. The main objective of this study was to determine the pattern of clinical presentation and demographic characteristics and to assess the surgical treatment outcome of patients with achalasia.

Methods: This was a 5-year retrospective review of medical records and theatre operation register notes of patients operated for achalasia of cardia at Tikur Anbessa Specialized Hospital, Addis Ababa. Selected socio-demographic variables, clinical presentations, radiologic imaging, post-operative course and final outcome were recorded on a structured format. Data was entered, cleaned and edited using EPI info version 3.5.1 for windows and analyzed using SPSS version 15 for windows. Frequencies, percentages, Mann-Whitney U test and Chi-square test were applied to describe and compare the difference between sex, age and dysphagia scores. Wilcoxon Signed Ranks test was used to evaluate the surgical treatment outcome after patients underwent Modified Heller's Myotomy (MHM).

Results: A total of 46 patients' records that were operated for achalasia were reviewed, of whom 56.5% were males, 52.2% were of younger age (52.2%) with a mean of 26.4 years (Range: 14 – 65 years). Thirty eight (82.6%) patients suffered from grade 3-4 dysphagia. Higher dysphagia score, with no significant statistical difference, was predominantly seen among the young (87.5%) and female (95%) patients. Severity of symptoms of dysphagia was significantly reduced after Modified Heller's Myotomy ($P < 0.0001$)

Conclusion: Slight predominance of male sex and younger age group was found among patients operated for achalasia. Modified Heller's Myotomy was found to be effective in alleviating symptoms of achalasia.

DOI: <http://dx.doi.org/10.4314/ecajs.v21i2.4>

Introduction

Achalasia (a Greek term that means "does not relax") is a primary esophageal motor disorder characterized by absent esophageal peristalsis due to a defect in the innervation of esophageal smooth muscles and abnormal lower esophageal sphincter (LES) relaxation leading primarily to the symptoms and signs of achalasia¹⁻⁴. The cause of achalasia is not exactly known, but may include autoimmunity and viral infection⁵. Familial occurrence also suggests genetic predisposition⁶.

Achalasia is an uncommon disorder that has an annual incidence ranging from approximately 0.4 to 6 cases per 100,000^{3, 7-10}. In sub-Saharan Africa, 3 to 4 patients are seen per year¹¹⁻¹³. However, there appears to be a striking international variations and also significant differences within countries⁷. Although the condition occurs in males and females with equal frequency, there are studies reporting that there is a male predominance even in Ethiopia. There appears to be striking international variations with significant differences between countries with respect to prevalence, occurrence in different sex and age groups and clinical features.

So far, especially in centres where endoscopic treatment is not yet well advanced, the treatment of achalasia is primarily surgical. The gold standard surgical procedure has been the modified Hellers cardiomyotomy. Therefore, the main objective of this study is to describe the pattern of clinical presentation and demographic characteristics and assess surgical treatment outcome of patients treated for achalasia at our hospital.

Patients and Methods:

The study was carried out in Tikur Anbessa Specialized Referral Hospital where cardiothoracic surgical unit is located. This study is a retrospective longitudinal follow up of patients at Tikur Anbessa Specialized Hospital who had been admitted and surgically treated for achalasia. All patients diagnosed to have achalasia using a contrast radiographic (barium swallows) and endoscopic studies that underwent surgical treatment, from January 2000 – December 2004 were included.

Variables such as surgical treatment outcome (treatment success), socio demographic factors (age, sex), clinical history - duration of illness, presence of other medical chronic diseases, clinical presentation features, time from diagnosis to treatment, immediate post op complications, hospital stay, type of surgical intervention and nutritional status were analysed. A structured pre-tested questionnaire was used to collect relevant variables from the respective data source. The sources of data for this study were patients' medical records and operation theater registry log books. Data was collected by the primary investigator. Treatment success was defined as a patient operated for achalasia and fully improved with no late complications like recurrence, GERD, or stricture.

Data was cross checked for completeness, accuracy, and consistency before entry to software program. It was also censored at 6 month post op follow up period. Descriptive statistics as percentages, mean, and ranges were computed. The characteristic of patients between sex and each age group was compared using the Mann-Whitney U test and Chi square test. Wilcoxon Signed Ranks test was used to evaluate the surgical treatment outcome after patients underwent Modified Heller's Myotomy (MHM). Difference between the groups will be taken as significant for $p < 0.05$. Ethical approval was assured from Addis Ababa University, College of Health Sciences Ethical review board.

Results

Out of the 46 patients who were admitted to surgical ward with a diagnosis of achalasia during a five year period (January 2000 to December 2004), 20 (43.5%) were female and 26 (56.5%) were male. The mean age of patients was 26.4 years (range 14-65 years), of whom 24 (52.2%) were young and 22 (47.8%) were adult. Thirty eight (82.6%) patients suffered from grade 3-4 dysphagia, 35 (76.1%) had complaints of regurgitation while only 10 (21.7%) had dyspepsia before surgical treatment.

One in five (19.6%) of the patients were wasted while all were found to be non-reactive to serology for retroviral infection. Barium swallow for 45 (97.8%) of patients was suggestive for achalasia while endoscopy was suggestive of achalasia in 14 (82.3%) of the 17 cases who underwent the procedure. Higher dysphagia score (Grade 3 and 4) was predominantly seen among the young (87.5%) and female (95%) patients.

Dyspepsia was more common feature among the adults (40.9%) and male (23.1%) patients (Table 1). Dysphagia scores at admission to Tikur Anbessa surgical wards were evaluated for difference in sex and age of patients with achalasia but no significant difference was detected (*Mann-Whitney U test for ordinal and Chi square for nominal; P-value > 0.2*).

Table 1. Pattern of Clinical Features and Nutritional Status among Achalasia Patients. Admitted to Tikur Anbessa Hospital Surgical ward (January 2000 To December 2004)

		14-24 years (young)	25-65 years (adults)	Female	Male
Dysphagia score	2	3 (12.5%)	5 (22.7%)	1 (5%)	7 (26.9%)
	3	16 (66.7%)	9 (40.9%)	13 (65%)	12 (46.2%)
	4	5 (20.8%)	8 (36.4%)	6 (30%)	7 (26.9%)
Dyspepsia	Yes	1 (4.2%)	9 (40.9%)	4 (20%)	6 (23.1%)
	No	23 (95.8%)	13 (59.1%)	16 (80%)	20 (76.9%)
Regurgitation	Yes	18 (75%)	17 (77.3%)	16 (80%)	19 (73.1%)
	No	6 (25%)	5 (22.7%)	4 (20%)	7 (26.9%)
Cough	Yes	1 (4.2%)	2 (9.1%)	1 (5%)	2 (7.7%)
	No	23 (95.8%)	20 (90.9%)	19 (95%)	24 (92.3%)
Wasted	Yes	5 (20.8%)	4 (18.2%)	5 (25%)	4 (15.4%)
	No	19 (79.2%)	18 (81.8%)	15 (75%)	22 (84.6%)

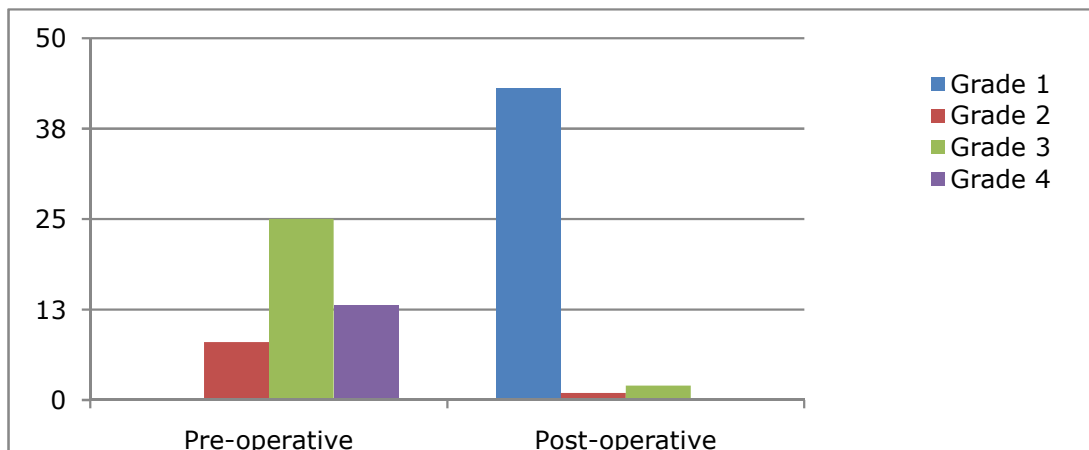


Figure 1

Dilatation was not tried for any of the patients. Modified Heller's Myotomy without an antireflux procedure through abdominal approach was done for 45 (97.8%) of the patients. Five (10.9%) patients had perforation intra-operatively. Following the surgical procedure, four (8.7%) suffered from immediate post-operation complication including wound infection, dysphagia and dyspepsia. The mean hospital stay was 5.6 days (SD± 3.1). Forty four (95.7%) were discharged improved and follow-up at 6 month revealed 6 (13%) patients to have complications (3 patients had recurrence and 3 patients had GERD). Severity of symptoms of dysphagia was significantly

reduced in the remainder patients (n=6) (*Wilcoxon Signed Ranks test, $P<0.0001$*) and dyspepsia was reduced from 21.4% to 4.3% after MHM (Figure 1).

Discussion

It has been suggested that gender has no effect on esophageal motility^{14, 15} and men and women are affected with equal frequencies². But few other recent findings suggest that achalasia is more common in men than in women¹⁶. Similar pattern of predominance of males was also observed in Ethiopia. The reviews evaluating patients with achalasia cardia treated surgically at Tikur Anbessa hospital showed that there is predominance of males^{17, 18}. This was also seen on our study which had 56% male patients.

Although studies on esophageal motility in normal individuals have shown some differences between males and females¹⁹, this was not widely studied among achalasia patients. Thus, data regarding the clinical and demographic characteristics differences between males and females in achalasia is sparse.

The disease can occur at any age, but onset before adolescence is uncommon. Achalasia is usually diagnosed in patients who are between the ages of 25 and 60 years^{2, 20}. In developing countries the peak incidence is in the third decade, a decade lower than in developed countries^{21, 22}. In our study, mean age at presentation was found to be 26.4 years with the range extending from 14-65 years.

The classic triad of presenting symptoms consists of dysphagia, regurgitation, and weight loss^{9, 24}. Dysphagia for solids (91%) and liquids (85 %) is the primary clinical feature of achalasia. Although dysphagia for liquids can occur in patients with other esophageal motility disorders (e.g. progressive systemic sclerosis), this symptom is most characteristic of achalasia and strongly suggests the diagnosis². This is in accordance with our study where dysphagia was the presenting symptom in 82.6% of patients.

However, heartburn, postprandial choking, and nocturnal coughing are seen commonly⁹ with chest pain and heart burn manifesting more in women²⁵. Studies have also presented mixed results when it comes to clinical features of achalasia. One study in France found out that Dysphagia, chest pain and heartburn were more frequent in young patients^{25, 26} while another study conducted in the USA showed Dysphagia was more common (60.6% vs 25.4) in older patients²⁷. Another study comparing symptoms of the elderly versus the young before surgical treatment, found out that older patients had less dysphagia, regurgitation, choking, and chest pain^{28, 29}. Seventy six percent of our patients complained of regurgitation upon presentation.

A comparison of findings in younger and older patients at mayo clinic revealed that when only patients with dysphagia were analyzed, achalasia was still more likely in the older group (20.0% vs 12.9%)²⁷.

Regardless of the duration of illness, chest pain was found to be the distinct symptom of achalasia which is affected by sex as well as age³⁰. In our study, dysphagia was found to be more common in adults (40%) and male patients (23.1%). Contrast radiographic or endoscopic studies is generally indicated in the work up as endoscopy is essential for establishing the diagnosis and excluding other causes of symptoms; manometry is useful for confirming the diagnosis^{9, 30-32}. Forty five (97.8%) of our patients had a barium study suggestive of the diagnosis of dysphagia, while 82.3% (14/17) of patients with endoscopy had a finding suggestive of achalasia.

Treatment of achalasia is directed towards relieving the obstruction caused by the non relaxing LES. Medical treatments need repetition and do not provide a long term palliation of symptoms. Dilation also has a long term failure of 20%. Surgery has proved to be safe, providing long term improvement in dysphagia^{18, 32}. Forty four (95.7%) of our patients were discharged with

improvement after surgery with 19.8 % of patients having immediate post op complications (perforation, SSI). All our patients were discharged. Long term follow up of the patients revealed 13% of the patients had complications (GERD, recurrence) with the remaining patients having significantly reduced dysphagia. This is in comparison with study done in our hospital which had improvement of dysphagia in 88.7% of the cases¹⁸

Rarity of the disease coupled with low incidence has been the primary obstacle to readily study the demography thus limiting the number of cases to be studied and weakening the probability of finding differences in sub groups of achalasia patients.

Conclusion

This study has shown that there is a slight predominance of male sex and younger age group among patients operated for achalasia. Esophagomyotomy (Modified Heller's) was found to be safe & effective procedure with rewarding outcome to patients in alleviating symptoms of achalasia in majority of the patients.

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