Original Article

Complications of Heller's Myotomy

Achalasia Cardiac: Examine the Complications of Heller's Myotomy with and Without Anti-Reflux Procedure

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ABSTRACT

Objective: To examine the outcomes of Heller's Myotomy with and without anti reflux procedure.
Study Design: Interventional/Comparative study.
Place and Duration of Study: This study was conducted at the Department of Pediatric Surgery Bolan Medical College Hospital Quetta from 1st July 2017 to 30th June 2019.
Materials and Methods: Twenty seven patients of both genders presented with achalasia cardia were enrolled in this study. Patient's demographics were recorded after written consent. Patients were divided not two groups. Group A had 16 patients and received Heller's Myotomy (5 to 10cm anterior Myotomy exposing the mucosa, extending distally up to the gastro esophageal junction saving oblique muscle fibers of cardia) and Group B consist of 11 patients and received Heller's Myotomy without an anti-reflux procedure. Outcomes of both groups were examined. Follow-up was taken at 8th and 16th month post-operatively.
Results: The mean age of patients in Group A was 4.46±3.28 years and in Group B it was 5.36±2.49 years. In Group An 81.25% patients were male while 18.75% were females and in Group B 81.82% were male while 18.18% were females. Mostly patients were presented with multiple symptoms. There was no statistical significant difference between both groups regarding complications till postoperative 8th week (p=>0.05). At final follow-up, patients of Group B had less complications as compared to Group A (p=0.044).
Conclusion: No significant difference in terms of postoperative complications between both groups. However, at 4th postoperative month, patients received Heller's myotomy without anti reflux procedure had less complications rate as compared to the patients with anti-reflux procedure.
Key Words: Achalasia cardia, Heller's myotomy, Outcomes.

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INTRODUCTION

Achalasia cardia is a rare esophageal disease characterized by incomplete and uncoordinated relaxation of the lower esophageal sphincter associated with a peristaltic esophagus.[1,2] This condition causes typical symptoms of dysphagia and regurgitation, heartburn, postprandial chest pain, malnutrition and aspiration, all leading to a poor quality of life.[3] It is a primary esophageal motility disorder of unclear etiology. It is uncommon, but not rare; affecting approximately 1 in 100,000 individuals per year and affects equally the male and female.[4]

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Primary achalasia is the most common subtype and is associated with loss of ganglion cells in the esophageal my enteric plexus. These important inhibitory neurons induce LES relaxation and coordinate proximal-to-distal peristaltic contraction of the esophagus.

Secondary achalasia is relatively uncommon. This condition exists when a process other than intrinsic disease of the esophageal my enteric plexus is the etiology.[5]

Primary treatment of esophageal achalasia is currently based on pneumatic dilatation or surgical myotomy.[5] whether endoscopic or surgical treatment should be attempted first is still controversial.[6,7] excellent results are obtained via both techniques, but a long-term result seems to be better after surgical treatment. On the other hand, previous pneumatic dilatations do not preclude successful surgery.[7] Most authors therefore advocate surgical treatment after pneumatic dilatation failure or as first-intent treatment in patients under 30 or with high amplitude of esophageal contractions (>50 mm Hg) these patients are poor candidates for pneumatic dilatations due to higher risk of perforation and worse functional outcome.[7-9]

The approach to achalasia management has regained interest and is likely to be modified due to recent development of laparoscopic Heller myotomy.[10,11] this

surgical procedure is thought to be associated with less postoperative pain, shorter hospital stay, and fewer complications and is now considered by some authors as the first intent treatment. However as most reports have only focused on the feasibility or short-term results; comparative studies to open surgery are still needed for further evaluation.[11,12] When surgical cardiomyotomy is performed, there is a risk of inducing gastro-esophageal reflux disease. Due to this possible hazard, conventionally a routine anti-reflux operation is added to the surgical procedure.

The present study was conducted aimed to examine the outcomes of Heller's myotomy with and without anti-reflux procedure**.**

MATERIALS AND METHODS

This interventional comparative study was carried out at Department of Pediatric Surgery Bolan Medical College Hospital Quetta from 1st July 2017 to 30th June 2019 and comprised 27 patients. Patients were divided into two groups. Group A had 16 patients and received Heller's Myotomy (5 to 10cm anterior Myotomy exposing the mucosa, extending distally up to the gastro esophageal junction saving oblique muscle fibers of cardia) and Group B consist of 11 patients and received Heller's Myotomy without an anti-reflux procedure.

All consecutive patients of cardia Achalasia diagnosed on the basis of investigations and selected for surgery were included and recurrent cases were excluded. History of presenting illness (symptoms, severity, and duration) were noted. Routine investigations were performed. A complete record of the patients was maintained in the department. Each case was followed up post operatively to record the development of complications. The data was analyzed using SPSS-20.0. Chi-square test and student t' test was applied to compare the outcomes between both groups. P-value <0.05 was considered as significant**.**

RESULTS

The mean age of patients in Group A was 4.46±3.28 years and in Group B it was 5.36±2.49 years. In Group An 81.25% patients were male while 18.75% were females and in Group B 81.82% were male while 18.18% were females. According to the presenting symptoms, in Group a 5 (31.25%) patients had throwing up, 2 (12.5%) patients had dysphagia, chest pain found in 1 (6.25%, and 8 (50%) patients had multiple symptoms. In Group B 2 (18.18%), 3 (27.27%), 2 (18.18%) and 4 (36.36%) patients had throwing up, dysphagia, chest pain and multiple symptoms respectively (Table 1).

Fourteen (87.5%) and (72.7%) patients were born through normal vaginal delivery in Group A and B. 2 (12.5%) patients in Group A and 3 (27.3%) in Group were born by cesarean section (Table 2).

Table No. 1: Baseline characteristics of all the patients

Variable	Group A (n=15)		Group B (n=10)	
	No.	%	No.	%
Age	4.46±3.28		5.36±2.49	
Gender				
Male	13	81.25	9	81.82
Female	3	18.75	2	18.18
Presenting complaints				
Throwing up	5	31.25	2	18.18
Dysphagia	2	12.5	3	27.27
Retrosternal Chest pain	1	6.25	2	18.18
Multiple	8	50.0	4	36.4

Table No 2: Birth history among study groups

Birth history	Group A (n=16)		Group B (n=11)	
	No.	%	No.	%
NVD	14	87.5	8	72.7
CS	2	12.5	3	27.3

Table No. 3: Post-operative complications among both groups

Complications	Group A	Group B	Total
Wound Infection	3 (18.75%)	2(18.18%)	5 (18.52%)
URTI	8 (50%)	6 (54.55%)	14 (51.85%)
LRTI	5 (31.25%)	3 (27.27%)	8 (29.63%)
Total	16(100%)	10(100%)	27(100%)

P-Value >0.05

Table No. 4: At 8th week follow-up

Complications	Group A	Group B	Total
No Complications	11(68.7)	10 (90.91)	21 (77.78)
GER	3(18.75)	0 (0)	3 (11.11)
Dysphagia	2(12.5)	1(9.09)	3(11.11)
Total	16(100)	11(100)	27(100)

P-value >0.05

Table No. 5: At final follow-up

Complications	Group A	Group B	Total
No Complications	11(67.7%)	9 (81.82%)	20(74.07%)
Dysphagia	5 (31.25%)	2(18.18%)	7(24.93%)
Total	16(100%)	11(100%)	27(100%)

P-value <0.05

According to the postoperative complications, we found wound infection, upper urinary tract infection and lower respiratory tract infection in 3 (18.75%), 8 (50%) and 5 (31.25%) patients in Group A and 2 (18.18%), 6 (54.55%) and 3 (27.27%) patients in Group B respectively. There was no significant difference observed in term of postoperative complication between both groups (p>0.05) (Table 3).

At 8th week, In Group A and Group B 11 (68.75%) and 10 (90.91%) patients had no complications while in Group a 3 (18.75%) had GER and 2 (12.5%) patients

had dysphagia and in Group B no patient of GER and 1 (9.09%) patient had dysphagia. There was no significant difference observed between both groups ($p \geq 0.05$) (Table 4).

At final follow-up, we found 11 (68.7%) patients in Group A had no complications and 9 (81.82%) patients in Group A had no complications. 5 (31.25%) patients in Group A and 2 (18.18%) patients in Group B found to had dysphagia. We found patients without anti-reflux procedure had less rate of complications as compared to patients who received Heller's myotomy with anti-reflux procedure at long term follow-up (Table 5).

DISCUSSION

Children with achalasia cardia, most commonly present with persistent throwing up, dysphagia, weight loss, failure to thrive, and recurrent respiratory tract infections.[13-14] A study conducted by Lee et al[15] reported dysphagia 79% was the most common presented symptoms in achalasia cardia patients followed by vomiting, weight loss and chest pain in 59%, 44% and 38% patients. They also reported 52% patients had multiple symptoms such as weight loss, vomiting, chest pain and dysphagia together. In their study the mean age of patients was 13 ± 6. In our study the mean age of patients was 4.76 ± 2.99.

Recently Heller's myotomy has also been performed laproscopically through left video assisted thoracic surgery (VATS) saving the phrenoesophegeal ligament thus obviating the need of anti-reflux procedure. With a Trans abdominal Heller's myotomy, however, a hiatal hernia is theoretically created and reflux can occur. A routine anti-reflux procedure is controversial because of the concomitant a peristaltic esophagus and because the long-term outcomes may not improve with a fundoplication. A study was conducted on 42 patients in whom 9 were treated with Heller's and a "floppy" Nissan over a 40°F bougie. During the follow up it was seen that, 22% of patients complained if dysphagia to meat or bread and 30% complained of reflux.[16]

According to the postoperative complications, we found wound infection, upper urinary tract infection and lower respiratory tract infection in 3 (18.75%), 8 (50%) and 5 (31.25%) patients in Group A and 2 (18.18%), 6 (54.55%) and 3 (27.27%) patients in Group B respectively. There was no significant difference observed in term of postoperative complication between both groups ($p \geq 0.05$). A randomized trial included 43 patients undergoing laparoscopic myotomy for achalasia to Dor vs. no Dor. Patients underwent manometer and 24-hour pH monitoring at 3 to 5 months postoperatively. Pathologic reflux was significantly less in the Dor group (9% vs. 48% in patients without the Dor.[16-17]

At final follow-up, we found 11 (68.7%) patients in Group A had no complications and 9 (81.82%) patients in Group A had no complications. 5 (31.25%) patients in Group A and 2 (18.18%) patients in Group B found to had dysphagia. We found patients without anti-reflux procedure had less rate of complications as compared to patients who received Heller's myotomy with anti-reflux procedure at long term follow-up. The incidence of symptoms recurrence in our patient's population was almost similar to that reported in the litreture.[18-22]

CONCLUSION

Achalasia cardia is an uncommon malignant disorder with high morbidity and mortality rate. We found no significant difference in terms of postoperative complications between both groups. However, at 4th postoperative month, patients received Heller's Myotomy without anti reflux procedure had less complications rate as compared to the patients with anti-reflux procedure. This study however is very small and more work needs to be done.

Author's Contribution:

Concept & Design of Study:	Mohammad Dawood Khan
Drafting:	Mohyuddin Kakar
Data Analysis:	Naseebullah Zarkoon
Revisiting Critically:	Mohammad Dawood Mohyuddin Kakar
Final Approval of version:	Mohammad Dawood

Conflict of Interest: The study has no conflict of interest to declare by any author.

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