OUTCOME OF ACHALASIA CARDIA MANAGED WITH TRANSABDOMINAL HELLER'S CARDIOMYOTOMY AND ANTERIOR DOR PATCH

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ABSTRACT

Objectives: To evaluate relief of dysphagia and appearance of reflux symptoms in patients of achalasia cardia treated with Tran's abdominal cardiomyotomy and anterior Dor patch.

Study design: Quasi experimental study.

Place and duration of study: Combined Military Hospital Quetta and Combined Military Hospital Rawalpindi from Jan 2006 to Jan 2012.

Methodology: Twenty three cases were diagnosed to have achalasia cardia on barium swallow, upper GI endoscopy and CT scan chest in selective cases. They were treated with transabdominal modified Heller's cardiomyotomy and anterior Dor patch as an antireflux procedure. Relief of dysphagia and occurrence of reflux symptoms were evaluated clinically.

Results: All (100%) operated patients had symptomatic relief of dysphagia over follow up of six months. No patient had post op reflux symptoms.

Conclusion: Transabdominal Heller's cardiomyotomy with anterior Dor patch is a safe and effective surgical option for achalasia cardia.

INTRODUCTION

Achalasia meaning failure to relax in Greek is a primary esophageal motility disorder of unknown etiology resulting in high lower esophageal sphincter pressure[1]. Although this disease is known for more than three hundred years the exact pathogenesis still remains elusive[2]. Dysphagia is the main presenting complaint. The diagnosis can be made with the help of barium swallow, upper GI endoscopy and manometric studies[3]. Treatment has been aimed at reducing the LES pressure using drugs, pneumatic dilatation, botulinum toxin injection and surgery[4]. However superior symptomatic relief is observed with surgical treatment[5]. Adequate cardiomyotomy remains the main principle of surgery which is often combined with fundoplication as a prophylactic anti reflux procedure[6]. We chose transabdominal cardiomyotomy with anterior Dor patch as the surgical modality. The primary aim of this study was to evaluate the outcome of this surgery in terms of symptomatic relief of dysphagia and post operative reflux symptoms.

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MATERIAL AND METHODS

The quasi experimental study was conducted from Jan 2006 to Jan 2012 at CMH Quetta and CMH Rawalpindi. A total of 23 cases were included in the study. Selection criteria was all patients of achalasia cardia operated through abdominal approach in whom modified Heller's cardiomyotomy with anterior Dor patch was performed. Patients of achalasia cardia operated through trans throcacic approach, in whom a fundoplication technique other than Dor patch was performed and patients with secondary achalasia were excluded from the study. Diagnosis was made with barium swallow and Upper GI endoscopy. All patients were graded by Handerson classification on the basis of barium swallow as depicted. CT scan was done in 6 cases, all above 40 years of age to exclude malignancy. Manometery was not done in any case due to nonavailability in the hospital settings.

All cases were opened by midline laparotomy upto the umbilicus. Left triangular

ligament of liver was divided for adequate crural and esophageal exposure. Esophagus was mobilized with minimal dissection. Crural fibers and vagus nerve were identified before commencement of myotomy. Myotomy 5 to 7 cm above and 1.5 cm below gastroesophageal junction was ensured. Mucosal circumferential mobilization was done to 180^0 with clear pouting of esophageal mucosa, ensuring no residual transverse muscle fibers are left as illustrated in figure 2. Following myotomy an anterior fundoplication as Dor patch from highest approachable part of fundus was done without dividing the short gastric vessels as shown in figure-3. Fundus was anchored to esophageal muscle fibers and right crus to prevent approximation of muscle fibers and to ensure at least 3 cm intra abdominal esophageal length. Highest point of plication was stiched to the undersurface of diaphragm to avoid hiatal herniation postoperatively. One abdominal drain was kept which was removed on second post op day. Oral liquids were started on first post operative day and semi solid diet was started on second post operative day. After discharge from hospital post operative follow up visits were carried out after two, four and six months. Data had been analyzed using SPSS version 17. Descriptive statistics were used to describe the results.

RESULTS

Twenty three patients with achalasia cardia were treated surgically by abdominal approach in our department. Out of these 16 (70%) were male and 7(30%) were female. Mean age was 21 years (range: 9-51 years). Dysphagia was the main presenting symptom present in all the patients. Regurgitation was reported in 18 (78%) patients. Chest pain in 6 (26%) and weight loss in 17 (74%). Respiratory symptoms were present in 6 (26%) patients. Patients were classified according to Handerson grading, 8 (35%) cases were in stage one, 11 (48%) cases in stage 2 and 4 (17%) cases in stage 3. Modified Heller myotomy and an anterior Dor fundoplication was done in all (100%) cases. Mean operative time was 1 hour and mean hospital stay was 3.5 days. Intra

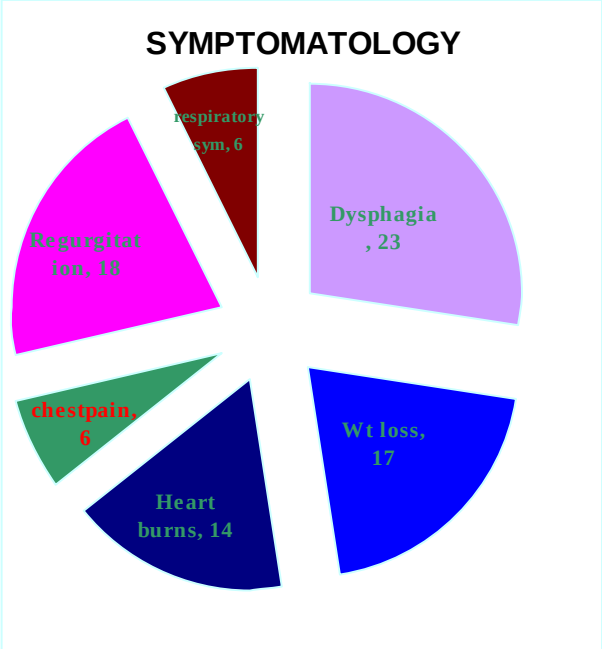

Figure-1: Distribution of symptoms among study cases.

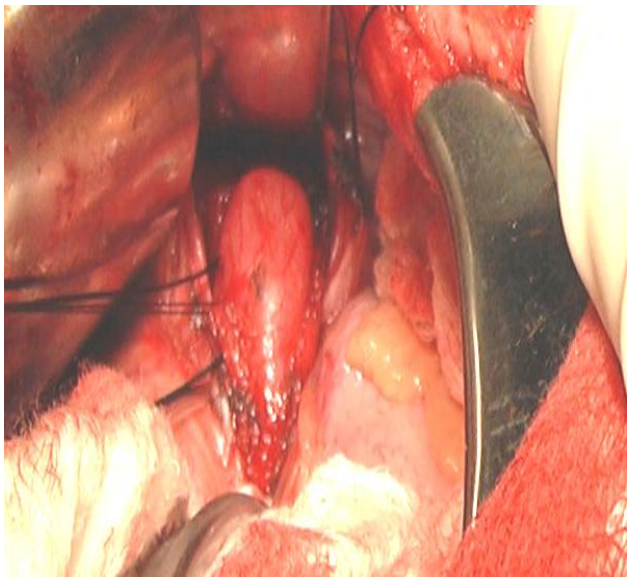

Figure-2: Mucosal circumferential mobilization of esophagus.

operative mucosal injury was noted in 1 (4%) patient which was repaired primarily. During post operative follow up of six months the relief of dysphagia was observed in all (100%) cases. There was no post operative mortality. Clinically

post operative reflux symptoms were not observed in any case.

DISCUSSION

Achalasia cardia is an uncommon disorder. Due to slow progression of disease the symptoms are initially attributed to other disorders. Manometery provides the most accurate diagnosis, however it can be diagnosed with the help of barium swallow and upper GI endoscopy[7]. The aim of treatment is targeted to reduce the lower esophageal sphincter pressure using drugs like calcium channel blockers, nitrates, botulinum toxin injection which all have variable, fluctuating success rate[8]. Botulinum toxin injection has been reserved for elderly or individuals not suitable for dilatation or surgery[9]. Pneumatic dilatation has better results than afore mentioned options[10]. Surgery is known to have effective long term relief of dysphagia[11]. The original Heller's technique involved a double myotomy through laprotomy. Cardiomyotomy either by transabdominal or transthoracic approach remains the basic surgical aim.

In this study we chose transabdominal modified Heller's cardiomyotomy with anterior Dor patch as the surgical treatment. Post operative dysphagia relief was evaluated clinically and with barium swallow in selective cases. Symptoms of GERD were evaluated clinically. Heller's myotomy was done through mid line laprotomy incision which has less morbidity in terms of pain and tissue damage as compared with thoracotomy approach[8]. It effectively relieves the symptom of dysphagia and when combined with fundoplication also reduces the risk of gastroesophageal reflux by nine folds[12].

Cardiomyotomy when carried out without any fundoplication has a higher incidence of post operative reflux symptoms. In a study done at Adis Ababa, Ethiopia by Biluts et al shows a reflux rate of 9.5% when myotomy was done without fundoplication[13].

The anterior fundoplication provides a cover to microperforations of esophageal mucosa. It also ensures restoration of intra abdominal length of esophagus. More extensive fundoplications like Nissens fundoplication has been shown to be

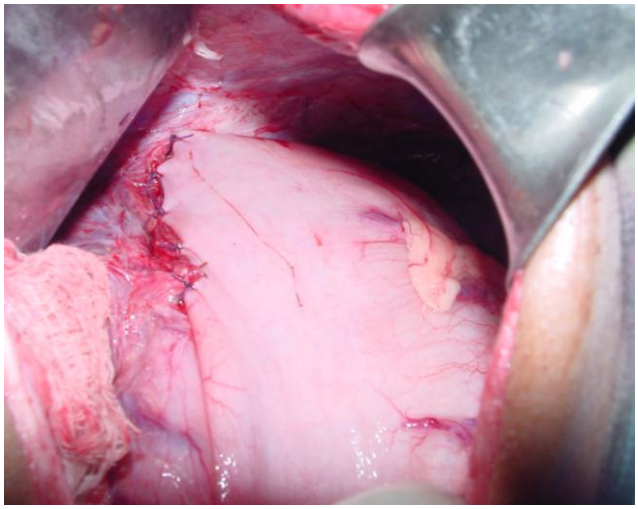

Figure-3: Dorr fundal patch being applied over esophageal mucosa.

associated with higher rate of dysphagia as compared with Dor patch[14]. Bessel et al are proponents of laparoscopic cardiomyotomy only as an effective treatment[15]. On the other hand Bloomston M and Rosemurgy A advocate selective application of fundoplication during laproscopic cardiomyotomy[16]. In a study with long follow up Bonatti et al recommended laparoscopic cardiomyotomy with partial fundoplication as a reliable treatment option[17]. Costantini et al opined that laproscopic Heller's myotomy with Dor patch remains an effective and reliable treatment option[18]. A similar study was conducted by Nadeem et al in Pakistan in ten cases which showed excellent results of this procedure[19]. Previously esophagectomy[5] was considered the only surgical treatment option for sigmoid esophagus, but now it has been shown that it can be managed successfully in selected cases with cardiomyotomy and fundoplication[20]. Per oral endoscopic myotomy is another minimal invasive treatment option under trial which might find its place in near future[21].

To date the surgical treatment of achalasia cardia has not been standardized. It seems prudent to add partial wrap to Heller's myotomy

but consensus lacks on which type to be performed. Due to availability of data on long term follow up of open cardiomyotomy, it is to be regarded as standard against which minimal invasive procedures have to be gauged[22].

With short hospital stay and cost effectiveness combination of Heller's myotomy and Dor fundoplication is a formidable option for treatment of achalasia cardia since it can be performed by general surgeons with minimal experience, it does not require lung ventilation. Dor patch as anti reflux procedure is more anatomical and physiological as compared with other fundoplication options.

CONCLUSION

Cardiomyotomy with dor patch through abdominal approach is a safe, easy and effective operative technique for treatment of achalasia cardia. It effectively reduces the dysphagia, prevents post operative gastroesophageal reflux and seals the micro mucosal perforations thereby preventing against post op leaks and sepsis.

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