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Case Report

Laparoscopic Heller's Cardiomyotomy with Partial Fundoplication in Achalasia Cardia – a Case Series.

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Abstract

Achalasia cardia is a rare chronic neurodegenerative disorder of the esophagus characterized by nonperistaltic contraction and incomplete relaxation of the lower esophageal sphincter. It is considered as the common leading cause of motor dysphagia and the gold standard treatment to which is operative intervention with Heller's cardiomyotomy with fundoplication. The choice of type of fundoplication is based on surgeon's preference. We herein present a case series, comprising of three cases of achalasia cardia managed with laparoscopic Heller's cardiomyotomy, with two patients had Dor's anterior fundoplication and one had Toupet's posterior fundoplication. All the three patients were followed up to the period of one year, and none of them had any post-operative complications.

Keywords: Achalasia Cardia, Laparoscopic Heller's Cardiomyotomy, Dor's Anterior Fundoplication, Toupet's Posterior Fundoplication.

1. Introduction

Achalasia is a disease which causes progressive degeneration of ganglion cells in the myenteric plexus in the esophageal wall, leading to aperistalsis of the esophagus and failure of relaxation of the lower esophageal sphincter (LES). It is essentially irreversible consequently, the management options are palliative in nature. Minimally invasive techniques like laparoscopic Heller myotomy (LHM) and robotic Heller myotomy (RHM) have become the gold standard in the management of Achalasia cardia [1].

Partial fundoplication is preferred after HM for postoperative reflux, as it is reported that there is an increased risk of dysphagia, with no significant difference in pathological reflux after a total fundoplication. Further, in a randomized study by Rawlings et al., they have demonstrated the equivalence of Dor's fundoplication (DF) and Toupet's fundoplication (TF) after LHM regarding symptom control and post-operative reflux. Herein, we present a case series of three cases who underwent laparoscopic Heller cardiomyotomy with partial fundoplication [2-4].

Case report

Case 1: A 22-year-old male patient presented to OPD with progressive dysphagia (solids > liquids), vomiting and weight loss for 1 year. His vomitus consisted of undigested food which regurgitated immediately. No abdominal pain was complained.

In the past, he had many consultations with local practitioners and was managed conservatively with antacids and proton pump inhibitors. As the symptoms were not relieved, he was referred to our hospital. Personal history, family history and general examination were insignificant. He was vitally stable and his systemic examination was normal. All his blood investigations were normal.

An upper GI scopy was done which suggested dilated esophagus and constricted GE junction. Scope was not negotiable beyond. Barium swallow was done which was suggestive of mildly dilated mid and lower esophagus with hold up of contrast noted, and short segment smooth narrowing of lower esophagus noted.

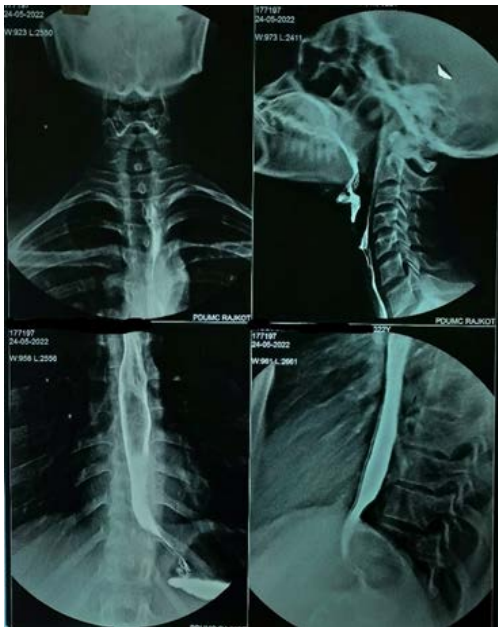

Figure 1: Barium swallow of the patient.

Esophageal manometry was done which was suggestive of Type 3 achalasia.

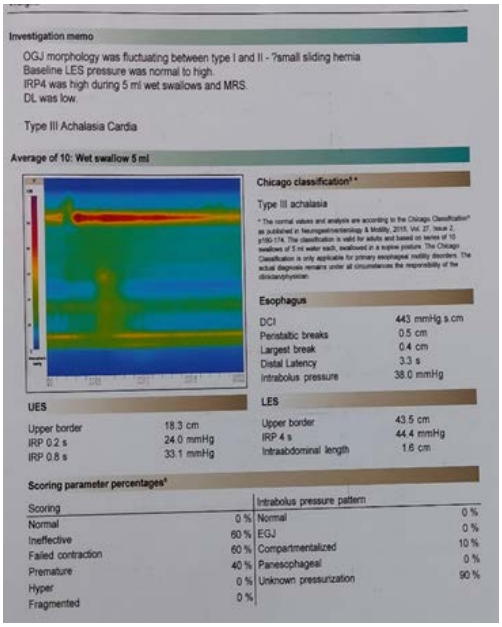

Figure 2: Esophageal manometry of the patient

Patient was planned for OT and was operated with laparoscopic Heller's cardiomyotomy with Toupet's partial posterior fundoplication. Patient was started orally on post-operative day 3, was progressed to full diet on post-operative day 5 and was subsequently discharged on post-operative day 9. Patient was followed up in OPD during 1 month, 6 months, and 1 year. He had no post-operative complications.

Case 2: A 20-year-old male patient presented to OPD with progressive dysphagia for six months, which was increased in severity for the past one month. He also complaints of vomiting which contains undigested food material which was regurgitated immediately since one month. No abdominal pain was complained. Past, personal, family history and general examination was insignificant. He was vitally stable and his systemic examination was normal. All his blood investigations were normal.

An upper GI scopy was done which suggested dilated esophagus with resistance at lower end of esophagus. Scope could be passed forcefully. Stomach and duodenum was normal. Barium swallow was done which was suggestive of moderate narrowing at distal esophagus – GE junction with smooth dilatation of rest of the proximal esophagus.

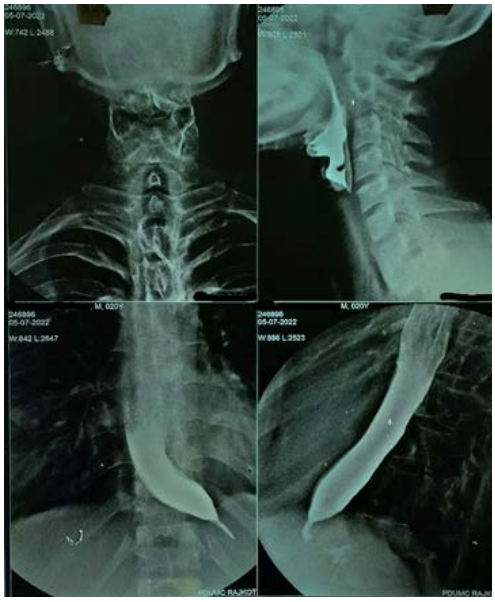

Figure 3: Esophageal manometry was done which was suggestive of Type 2 achalasia.

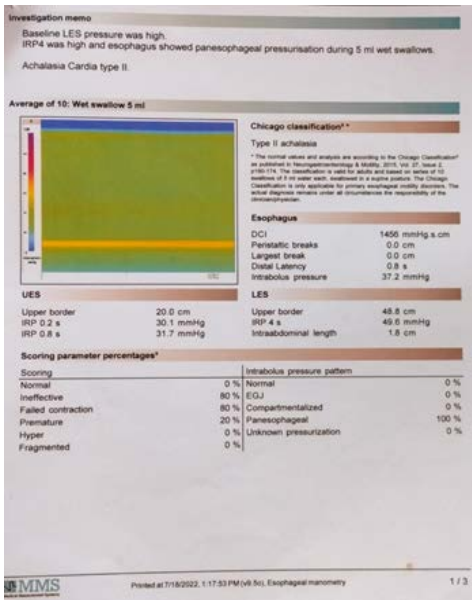

Figure 4: Esophageal manometry of the patient.

Case 3: A 45-year-old male patient presented to OPD with progressive dysphagia for six months, which was increased in severity for the past two months, associated with chest pain and vomiting.

Patient is a chronic bidi smoker for the past 20 years and chronic tobacco chewer for the past 15 years. He is also a chronic alcoholic for the past 12 years and has abstained for the past two months. His past, personal, family history and general examination was insignificant. He was vitally stable and his systemic examination was normal. All his blood investigations were normal.

An upper GI scopy was done which suggested dilated esophagus with constriction at lower end of esophagus near GE junction. Barium swallow was done which was suggestive of mild to moderate narrowing at distal esophagus with smooth dilatation of proximal esophagus. Esophageal manometry was done which was suggestive of type 2 achalasia.

Patient was planned for OT and was operated with laparoscopic Heller's cardiomyotomy with Dor's partial anterior fundoplication. Patient was started on liquids on post-operative day 1, was progressed to full diet on post-operative day 4 and was subsequently discharged on post-operative day 5. Patient was followed up in OPD during 1 month, 6 months and 1 year. He had no post-operative complications. During follow-up post-operatively, patient was assessed for signs and symptoms of reflux and/or dysphagia, but none of the patients had any clinical. Symptoms. They were further assessed with Eckardt scoring and Achalasia Quality of Life (ASQOL) scoring system, both pre-operatively and post-operatively for evaluating symptomatic improvement. All the 3 patients had Eckerd score <3 and median ASQOL score of 14, which signifies treatment success.

2. Discussion

Achalasia cardia is an esophageal motility disorder of undetermined etiology characterized by progressive and selective neurodegeneration of myenteric inhibitory neurons. These patients have esophageal aperistalsis with failure of relaxation of LES after swallowing.

Patients having achalasia usually present with difficulty swallowing food, chest discomfort, heartburn, weight loss, vomiting, and in severe cases, difficulty in swallowing liquids [5].

However, heartburn and regurgitation are frequently observed in patients who have GERD, and hence the diagnosis of achalasia might be delayed and the patients are not responsive to the pharmacological therapy, because these symptoms are often misinterpreted as gastroesophageal reflux. For such patients who do not respond to pharmacological treatment, esophageal manometry should be performed to exclude esophageal motility disorders including achalasia [6].

Contrast enhanced X-ray with barium swallow is performed in patients with achalasia and in such patients, there is typically a dilated esophagus, absence of peristalsis and narrowing of the distal esophagus in a typical "birds' beak" appearance [5].

The primary aim of treatment is palliative with alleviation of functional obstruction. Minimally invasive Heller's myotomy for dysphagia and a fundoplication to overcome the resulting acid reflux is the most preferred treatment modality. Although a 360o posterior fundoplication has been shown to be an effective anti-reflux procedure in the setting of aperistalsis of the esophageal body, it is associated with an unacceptably high rate of recurrent or persistent postoperative dysphagia requiring intervention. Hence, partial fundoplication is commonly combined with an esophago-cardiomyotomy [7-9].

Two types of partial fundoplication are used with an esophago-cardiomyotomy, either posterior Toupet's or anterior Dor's fundoplication. Posterior partial fundoplication is thought to keep the edges of the myotomy open, resulting in improved palliation of dysphagia. It may be a better anti-reflux operation compared with anterior fundoplication in the nonachalasia setting [10-12].

On the other hand, some believe that anterior partial fundoplication provides superior reflux control because the phrenoesophageal ligaments are preserved, it covers potential mucosal injuries, and it is easier to perform. Hence, a lack of consensus exists as to the best choice of partial fundoplication to be combined with the myotome [13-16].

In our series, we have conducted both partial anterior and partial posterior fundoplication along with laparoscopic Heller myotomy, there is no significant difference found in terms of post-operative complications like recurrence of dysphagia or pathological reflux.

3. Conclusion

We have reported a case series of three cases of achalasia cardia operated with laparoscopic Heller myotomy with either partial anterior or partial posterior fundoplication, and none of the patient had post-operative complications in terms of recurrence of dysphagia or pathological reflux.

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