

# Laparoscopic Treatment of Larrey Morgagni Hernia with an Assorbable Suture

## Case Report

**Pozzo G\*, Castellano E, and Sciacca C**

*Department of Surgery, "Cardinal Massaia" Hospital, Italy*

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**\*Corresponding author:** Pozzo G, Gastroesophageal Surgery Unit, Department of Surgery, Chief V. Sorisio, "Cardinal Massaia" Hospital, c.so Dante 202, 14100 Asti, Italy

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## Abstract

Morgagni-Larrey hernia is a very rare congenital diaphragmatic hernia, with an incidence of 2-5% of all diaphragmatic hernias and is usually diagnosed incidentally in asymptomatic adults. In this case report, we present a 55-year-old man with intestinal obstruction-like symptoms, diagnosed as a large Morgagni-Larrey hernia. He underwent primary hernia repair using a transabdominal approach with a laparoscopic technique.

Morgagni's hernia is a rare congenital disorder, usually asymptomatic, but may cause respiratory or gastrointestinal symptoms. The authors describe the case of a male patient 55years old with Down syndrome treated for years at home for respiratory failure and recurrent bronchopneumonia. The patient arrives in DEA with vomiting, fever and weight loss. The patient was then subjected to chest x-ray which demonstrated a marked lifting of the right hemidiaphragm with ascent of the intestinal loops, the heart area was apparently within normal limits and thoracic aorta was regular for age.

Subsequently, the patient underwent a chest and abdomen CT with visualization of a Morgagni-Larrey hernia with complete herniation of the hepatic colonic flexure and peritoneal fat, omentum and part of the gastric body above the right hemidiaphragm and secondary compression of the pulmonary parenchyma with disventilatory manifestations.

In the years prior to hospitalization, the patient had undergone chest X-rays which had always misunderstood the hernial defect, finding only the rise of the awake hemidiaphragm and the compression of the pulmonary parenchyma with partial dislocation to the left of the mediastinum.

The patient then underwent laparoscopic diaphragmatic repair.

## Introduction

### Surgical technique and clinical course

The patient was positioned in reverse Trendelenburg position with the first surgeon positioned between the legs. The assistant was on the left. The Induction of CO<sub>2</sub> pneumoperitoneum was performed with Veres needle at the Palmer point. There were subsequently inserted 3

trocars \, the optical trocar in the supra-umbilical region and two operating trocars at the lateral axillary line. At the exploration of the peritoneal cavity was found the diaphragmatic hernia of Larrey Morgagni containing the transverse and right colon, the omentum and the distal

stomach. The hernial defect was approximately 18 cm. The next time was the intraperitoneal reduction of herniated contents and Removal of peritoneal sac and pre peritoneal lipoma, during the maneuvers a small opening of the pleura was caused and sutured with resealable vlock. The closure of the diaphragmatic defect was performed with Vicryl0 transfixed points knotted at the supra-fascial level through small skin incisions and double layer v-lock intraperitoneal overlay. Abdominal drainage was placed.

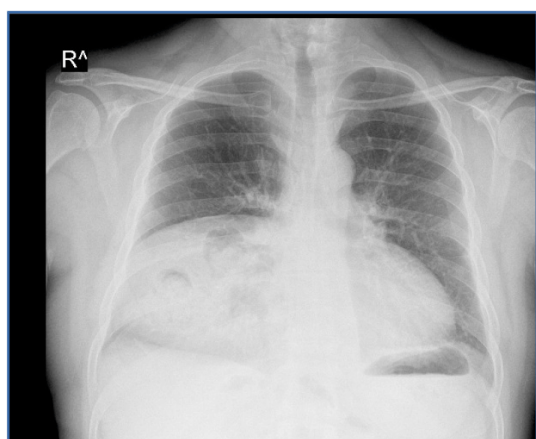


Figure 1

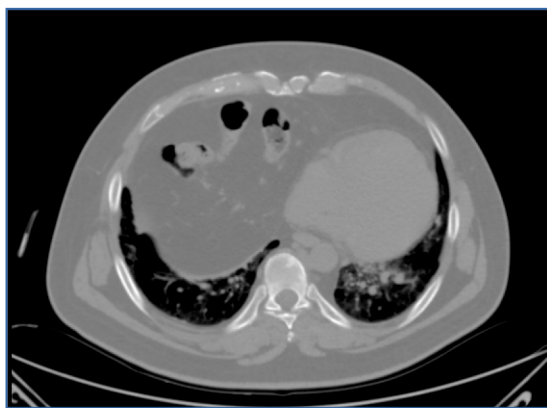


Figure 2

Short time antibiotic prophylaxis was administered and performed thromboprophylaxis. A gastric suction tube was placed intraoperatively and removed on the first post-operative day. About six hours after the operation, the patient was mobilized by the nursing staff and started walking. Postoperative analgesic treatment was administered for two days. The patient was discharged from the hospital on the third post-operative day after performing a chest X-ray that found no signs of pneumomediastinum or pleural effusion.



Figure 3



Figure 4

Two months after the operation, the patient performed a control chest x-ray which showed the absence of pleuro-pulmonary lesions with radiographic activity characteristics. An accentuation of the bronco-vascular design was appreciated. There were signs of disventilation in the basal lung field on the right. No signs of hernial recurrence.

One year after the operation, the patient underwent a diaphragmatic ultrasound which revealed the normal thickness of the reconstructed diaphragm wall and normal diaphragmatic excursion without side to side variation.



Figure 5

## Conclusion

Diaphragmatic hernia usually affects the posterolateral portion of the diaphragm (Bochdalek's hernia) and is found in 90% of cases on the left side; in 2% of cases it is bilateral. The estimated incidence is 1-4 / 10 000 live births. Anterior hernias (Morgagni hernia) are much less frequent. Other congenital anomalies are present in about 50% of cases, and adrenal insufficiency is relatively common.

Loops of small and large intestine, stomach, liver and spleen can protrude into the hemithorax of the affected side. If the hernia is large and the amount of herniated abdominal contents is substantial, the lung of the affected side will be hypoplastic. Other pulmonary consequences include the underdevelopment of pulmonary vascularization, which leads to an increase in pulmonary vascular resistance and therefore pulmonary hypertension.

The preferred surgical technique for the treatment of Morgagni's hernia in the past was a laparotomy or thoracic approach, however the intervention can also be performed with the laparoscopic approach. The procedure must include the complete reduction of the herniated contents and the removal of the hernial sac even if some authors advise against it in order to avoid pneumomediastinum or pneumothorax. A possible laceration of the parietal pleura can be conservatively treated by direct suturing of the defect in absorbable suture. The reconstruction of the diaphragmatic defect may involve the use of resorbable

meshes. In the case described by us, we did not consider it appropriate to position a mesh in order not to procure fibrosis that would limit diaphragmatic motility. A suture with detached stitches with extracorporeal knots and a double overedge with absorbable 2/0 vlock suture seemed the most appropriate choice. In view of the small numbers of interventions performed per single center, long-term patient collection and follow-up would be necessary in order to standardize the best surgical approach.

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