

Analysis of 15 cases of oesophageal hiatus hernia in children

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In this review the clinical features, operative procedure and outcome of surgery in 15 children with oesophageal hiatus hernia is presented. The commonest type was the sliding hiatus hernia. The main presenting clinical features included repeated vomiting, anaemia and malnutrition. At surgery, either an abdominal or a thoracic approach was used. The abdominal approach was found to be less traumatic and easier than the thoracic one. Postoperatively, gastro-oesophageal reflux (GOR) was found to be a common early complication in cases treated with simple repair of the hiatus plus fixation of the stomach to the diaphragm. Repair plus Nissen operation prevented GOR and was found to give the best results.

Introduction

Oesophageal hiatal hernia is not only the most common hernia of the diaphragm but is also among the more common abnormalities affecting the upper gastrointestinal tract.

Though rare in children, it is important because it is associated with prolonged vomiting and malnutrition. Once diagnosed, treatment should be instituted as soon as possible.

In this paper we present the results of management of oesophageal hiatal hernia in 15 children treated at Henan Medical University, Zheng Zhou, Henan in China.

Patients and methods.

Between 1977 and 1999, 15 cases of congenital oesophageal hiatus hernia in children were seen. Ten were males and five were females. Four children were aged under one year, nine were between 1-3 years old and the remaining two patients were above 3 years of age. The average age was 2.7 years.

The presenting symptoms included vomiting, which was often projectile. In five children, the vomitus contained coffee-grounds and was also associated with the passage of melaena stool. Six patients presented with cough, dyspnoea and other features of respiratory tract infection.

Investigations done included a haemogram. Three patients had severe anaemia with an Hb below 6 g/l. The rest had a haemoglobin level ranging between 8-10 g/l. Chest X-rays showed a cystic shadow which was on the left side in 8 children and on the right in the other seven. Barium meals showed that the Barium went into the cysts. The cysts expanded when the stomach contracted, but disappeared soon thereafter.

All 15 patients had surgery. In six patients the chest approach was used. An abdominal approach was employed in the other nine cases. Whichever approach was used, the operative procedure involved mobilization of the oesophagus, reduction of the stomach to its normal position and repair and strengthening of the hiatus. The anterior wall

of the gastric fundus and diaphragm were fixed with sutures. In eight cases, repair of the hiatus hernia plus a Nissen operation were performed.

There was one intraoperative death in a 3-month-old baby with severe malnutrition and circulatory failure. One patient who had a big hiatus and an underdeveloped diaphragm had recurrence of symptoms following surgery. Six months to one year after surgery, Barium meal studies were done. During the early postoperative period, patients who had an oesophageal hernia repair without a Nissen operation experienced acid reflux with occasional heartburn, nausea and vomiting. However these symptoms had disappeared by three months.

Follow up for 1-20 years revealed that 13 patients had complete cure of their disease and were asymptomatic. Patients who had repair of the hiatus plus a Nissen operation had a quicker recovery with better results. They did not suffer from any oesophageal reflux nor any other serious complication or discomfort.

Discussion

Oesophageal hiatus hernia should be suspected in any patient who presents with prolonged vomiting, malnutrition and respiratory tract infections. The diagnosis is confirmed by plain chest X-ray or fluoroscopy which show a cystic shadow at the back of the mediastinum either on the left or right side. Barium meals show Barium going through the cyst into the stomach through a narrow canal which is a diagnostic sign. In cases where the disease is not advanced, it may be necessary to take the X-rays with the patient in the supine position.

Two types of hiatal hernias are recognised. Type 1, the axial or sliding type, is the commonest variety. Type 2 is the paraoesophageal or rolling type. In the sliding type, the oesophagus, cardia and part of the stomach pass through the oesophageal hiatus to the back of the mediastinum. All the cases in this review had type 1 hiatus hernia. If the cardia is in a stable position and only part of the stomach herniates into the chest through the hiatus it is referred to as the rolling type. None of our patients had the rolling type.

Patients with hiatus hernia are best managed surgically. Preoperative treatment includes correction of the anaemia. Recovery is better if the abdominal approach is used. However such an approach may not give adequate exposure particularly in patients with a short oesophagus. The thoracic approach makes surgery easier because of the better exposure but is more traumatic and is associated with a higher risk of post-operative respiratory infection.

Large oesophageal hiatus hernias, which are associated with poorly developed diaphragm, are difficult to repair and readily recur. Other reasons for recurrence include tension from a short oesophagus. One of our cases who had a big hiatus (4 x 5 cm) and a weak diaphragm, had a recurrence due to difficult repair of the hernia. It is therefore important to adequately mobilize the oesophagus and to perform a proper repair if recurrence is to be avoided. In cases of a short oesophagus in which mobilisation of the gastric fundus is difficult, the Collis-Nissen operation is recommended¹.

Fonksurd² analysed 420 patients with GOR. He found that medical related problems such as diseases of the central nervous system or retardation of growth, accounted for 60% of the cases. The commonest surgically related cause of gastro-oesophageal reflux was hiatus hernia.

Previous experimental studies involving monitoring of the pH and pressures within the oesophagus, confirmed that simple repair plus the Nissen operation give better results than simple repair plus fixation of the anterior wall of the stomach to the diaphragm using sutures.

In our series, six patients had simple repair of the hiatus plus fixation of the stomach to the diaphragm. This procedure was associated with symptoms of reflux, which by the end of the third post-operative month had disappeared. In all the six patients, the long term results were good. This improvement may be attributed to the fact that the oesophageal sphincter strengthens and the nerves become better developed as the child grows. The Nissen operation, done in eight of our patients, is recommended if

GOR during the early post-operative stage is to be avoided.

Our study confirmed that repair of the hiatus combined with a Nissen operation should be the operation of choice for hiatus hernia. The abdominal approach, which gives less trauma and has fewer post-operative respiratory complications, is recommended except in cases where the oesophagus is short.

References

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