Morgagni Hernia: Presentation in Childhood

A. H. Al-Salem, C. Grant, S. Khwaja

Three cases of congenital hernia of Morgagni in children are reviewed. All were in boys aged 5, 9, and 13 months whose dominant symptoms were recurrent episodes of chest infection beginning since early infancy. The diagnosis was established by chest X-ray and barium studies. A transabdominal approach was employed for repair with good result. A brief outline of the management is presented.

The posterolateral hernia (of Bochdalek) is the commonest congenital diaphragmatic hernia of childhood. Other varieties, including the retrosternal hernia of Morgagni are infrequent but can become symptomatic early in life. The hernia of Morgagni, however, has features which are of interest not only in terms of presentation but also because of a high incidence of associated anomalies. Our experiences of congenital diaphragmatic hernia in this institution shows that outside the neonatal group, children are usually referred late even when they have been symptomatic since early infancy. An awareness of this diagnosis needs to be emphasized since late discovery of a hernia may be associated with considerable morbidity.

Patients and Methods

The medical records of all patients with the diagnosis of congenital diaphragmatic hernia, admitted to King Fahad Hospital of the University, Alkhobar, Saudi Arabia, were reviewed. Over a period of 6 years between 1982 and 1987, there were 36 cases of congenital diaphragmatic hernias, three of which were classified as hernias of Morgagni. The records of these were studied and the following information was listed: age, sex, reasons for presentation, associated anomalies, diagnostic X-rays, complications and the outcome of treatment. The operative approach, site of herniation and contents of the sac were obtained from the operative records.

Results

The pertinent clinical features and operative findings are shown in Table 1. One patient (Case 3) presented with a recurrent hernia following a previous repair in another hospital at the age of 5 months. All presented with recurrent attacks of chest infection since early infancy. The hernia was diagnosed on chest X-rays, showing loops of gas filled bowel (Fig. 1), which were confirmed by subsequent barium studies (Fig. 2).

The operative approach was through an upper midline laparotomy. In two, the hernia was rightsided, while in the third patient the operative findings revealed a bilateral lesion. A hernial sac was present in all patients; (see Table 1). The sacs were easily dissected, excised, and the defect repaired with non-absorbable interrupted sutures. Two patients were also found to have type I malrotation as well as bands of Ladd which were divided.

Postoperative recovery was uneventful. The patients were followed up from 15 to 39 months, and all are well except for one patient (Case 3) who developed a small incisional hernia which was repaired.
Table 1
Clinical features and operative findings

<table>
<thead>
<tr>
<th>No.</th>
<th>Age (months)</th>
<th>Sex</th>
<th>Symptoms</th>
<th>Associated anomalies</th>
<th>Site of the sac</th>
<th>Contents of the sac</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>13</td>
<td>M</td>
<td>Recurrent attacks of cough and chest infection</td>
<td>Pyloric stenosis, left inguinal hernia, malrotation</td>
<td>Bilateral</td>
<td>Large and small intestine</td>
</tr>
<tr>
<td>2</td>
<td>5</td>
<td>M</td>
<td>Failure to thrive and recurrent attacks of chest infection</td>
<td>None</td>
<td>Right-sided</td>
<td>Intestinal loops on X-rays. Contents already reduced at surgery</td>
</tr>
<tr>
<td>3</td>
<td>9</td>
<td>M</td>
<td>Recurrent attacks of chest infection and difficulty in breathing</td>
<td>Down's syndrome, malrotation</td>
<td>Right-sided</td>
<td>Large bowel and omentum</td>
</tr>
</tbody>
</table>

Figure 1. Anteroposterior and lateral chest X-rays showing loops of bowel in the chest.

Discussion
The incidence of the hernia of Morgagni is low, accounting for 2.8–6% of all types of congenital diaphragmatic hernia, and the hernial defect in the majority of these patients is right-sided. Pokorny et al. reported 10 hernias on the right side in a total of 12 infants, while Slatis reported 16 hernias on the right from a series of 17 in adults. An unusually low incidence of left-sided hernia is possibly because of the presence of the heart and pericardium. In contradistinction to other congenital diaphragmatic hernias, hernias of Morgagni usually have a well formed sac and our experience has been similar. The contents of the sac in the majority is the colon so that in a doubtful situation a barium enema is the preferred study.

The presentation of these patients can be very variable. Most commonly they present with repeated attacks of chest infection (which may not be adequately investigated by a general practitioner), or at times vague gastrointestinal symptoms. Some of these patients may remain asymptomatic until
they are adults or until the hernia is discovered incidentally. There is a high incidence of associated malformations, congenital heart disease in particular. The diagnosis is usually confirmed by postero-anterior and lateral chest X-rays (Fig. 1) which show air filled loops of bowel above the diaphragm. The lateral chest X-ray will indicate the retrosternal position of the hernia. Contrast gastrointestinal studies, usually a barium enema (Fig. 2), can be used to confirm the diagnosis. In atypical situations the use of upper abdominal ultrasound or a CT scan may be contributory. The use of other methods to aid the diagnosis e.g. liver/spleen scan is rarely necessary.

The treatment of retrosternal hernias is operative even when the patient is asymptomatic, as strangulation of the herniated bowel is a potential and unpredictable risk, particularly in children. The operative approach is, however, controversial. Both transabdominal and thoracic approaches have been advocated. We prefer the transabdominal approach, since it is not only easier to reduce the contents and inspect them, but also the defect (especially if bilateral) can be adequately repaired without fear of pulmonary complications. An experience like that of Bently & Lister who reported a successful transthoracic repair of a right-sided Morgagni hernia in a child who unfortunately died in the postoperative period of an unrecognized strangulated left Morgagni hernia, adds strength to our argument for a transabdominal approach.

Through this approach it is also possible to identify and deal with any other correctable anomalies which may be present. This was the case in two of our patients who had in addition to the hernia a type I malformation and well developed bands of Ladd which were divided.

References