HIATUS HERNIA AT ST LUKE'S HOSPITAL

a 3 year clinical survey

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Introduction

In view of the clinical impression that hiatus hernia appears to be a common radiological finding in Malta, it was decided to carry out a survey into the incidence of this condition at St. Luke's Hospital. Part of the study was also to review the various clinical modes in which hiatus hernia presented itself. Moreover, in view of the known association between hiatus hernia and ischaemic heart disease, a careful attempt was made to try and determine whether the presence of associated ischaemic heart disease was being missed once a diagnosis of hiatus hernia had been made.

Methods

We reviewed the radiological reports of the barium meal examinations taken over a three year period (1972-1974). All cases showing a radiologically visible hiatus hernia were re-assessed and their clinical presentation studied. The reasons for the radiological request have been classified as seen in Table 1 according to the main clinical presentation: 'classical' symptoms for hiatus hernia, other gastrointestinal symptoms, chest pain and a miscellaneous group. The radiological reports and radiographs were looked at for other associated pathology, particularly gastrointestinal. The electrocardiograms taken were again interpreted independently and a careful check made for ischaemic changes.

TABLE 1

Reasons for requesting a barium meal examination

Gastrointestinal symptoms	248 (69%)
Chest pain	50 (14%)
Miscellaneous group	43 (12%)
Clinically suspected hiatus hernia	18 (5%)

Findings

Between the years 1972 and 1974, 2886 barium meal examinations were performed, 1881 in males and 1005 in females and the number of cases with hiatus hernia detected was 478 (17%). It was only possible to trace 359 case notes, i.e. 74% of the total number of hiatus hernias detected radiologically. Of these, 201 patients (56%) had been referred to a medical unit and 158 patients (44%) to a surgical unit.

Hiatus hernia occurred in 261 males (55%) and 217 females (45%). The mean age of presentation was 59 years; 60 years for the female group and 58 years for the males. The youngest patient was a girl of 19 years, the eldest being a man of 95 years.

The average parity of the female patients studied was 3; parity ranging from 0 (42) to 13 (1). There were 55 patients (51%) who had had 3 or more children. We could only find weight measurements reported in 140 patients (39%). Weight ranged between 43 to 99 kilograms. The mean weight in males being 66 kg; in females this was 69kg. The miscellaneous group in Table 1 includes patients referred for investigation of anaemia, obstructive jaundice, pyrexia of unknown origin, steatorrhoea, weight loss and to establish the cause of chest radiographic abnormalities. The number of patients with hiatus hernia having associated gastro-oesophageal reflux was 105 (22%). This is 3.6% of the total number of patients submitted for barium meal examination; another 58 patients (2%) submitted for barium meal examination had gastro-oseophageal reflux without a visible hiatus hernia. In the majority of patients with symptomatic hiatus hernia the symptoms are usually attributed to reflux even if this is not radiologically obvious. Apart from the patients in the miscellaneous group all the others had one or more symptoms which could be attributed to the presence of a hiatus hernia. There was some difference in presentation between patients referred to surgical units and those referred to medical units (Table 2).

Haematemesis or melaena, or both, were present in 86 patients (24%) at some time between 1972 and 1974. Half of these patients had other pathology apart from the hiatus hernia which could account for the bleeding including, peptic ulcer, hepatic cirrhosis, duodenal diverticulum, uraemia or a history of ingestion of known gastric irritants. All the hiatus hernias were reported as being of the sliding variety apart from one which was said to be para-oesophageal. Other gastrointestinal radiological pathology besides a hiatus hernia was present in 123 patients (26%). This can be seen in Table 3.

Angina pectoris had been diagnosed in 36 patients (10%) prior to their first hospital attendance. An electrocardiogram was taken in 165 patients (46%); this figure includes the 36 patients who had previously been known to have angina pectoris. Ischaemic changes were present in 101 of these patients (61%). Four electrocardiograms showed changes of a recent myocardial infarct.

Apart from the fact that a considerable number of patients were discovered to have ischaemic changes in the absence of classical angina pectoris, 101 patients (28%) had a concomitant hiatus hernia and ischaemic heart disease. Conservative treatment for hiatus hernia was instituted in 46 patients (23%) referred to Medical units and 92 patients (58%) referred to Surgical units. Surgical intervention was carried out in 10 patients because of a failure in medical treatment.

TABLE 2

1.	Dyspepsia	86 (43%)	1.	Dypspepsia	63 (40%)
2.	Pain related to posture	50 (25%)	2.	Post-prandial pain	49 (31%)
3.	Post-prandial pain	46 (23%)	3.	Haematemesis/Melaena	43 (27%)
4.	Haematemesis/Melaena	42 (21%)	4.	Pain unrelated to meals, posture or exercise	41 (62%)
5.	Pain unrelated to meals, posture or exercise	36 18%)	5.	Pain related to posture	38 (24%)
6.	Chest pain	30 (15%-	6.	Dysphagia	11 (7%)
7.	Dysphagia	20 (1%)	7.	Chest pain	3 (2%)

TABLE 3

Duodenal Ulcer	57 (12%)
Gastric Ulcer	14 (3%)
Gall Bladder Disease	14 (3%)
Diverticulosis Coli	14 (3%)
Duodenal Diverticula	12 (2.5%)
Duodenitis, wide duodenal loop, oesophageal stricture, Ca stomach, oesophageal diverticulum	12 (2.5%)

Discussion

Although hiatus hernia was first described by Morgagni in 1769 it is only during the past 30 years that attention has become focussed on this condition, mainly because it is being more frequently diagnosed as barium meal radiography is being increasingly carried out.

The true incidence of hiatus hernia is not known but is said to show up radiologically in 33% of the population depending on the age group studied and on the technique employed (Dyer & Pridie, 1968). Many series show a tendency for females to preponderate over males for all types of hiatus hernias including the sliding variety. The latter is reported to occur with a ratio of 3 females to every male in symptomatic patients (Edmunds, 1957). In our study, although the absolute figures show a male preponderance, the relative frequency, when the total number of barium meal examinations carried out in the two sexes is taken into account, shows a higher figure for female patients. In fact a hiatus hernia was seen in 22% of the barium meal examinations carried out in females, and in 17% of the examinations carried out in males.

The age distribution supports the fact that although there may be a congenital predisposition for hiatus hernia, tissue degeneration and laxity also appear to play an important role (Edmunds, 1957; Ellis, 1972). Although our female patients show, on average, a high parity and increasing parity may be considered to contribute to the formation and symptomatology of hiatus hernia (Ellis, 1972), one has to keep in mind that 42 female patients (39%) in our series were nulliparous. From the case histories we were able to trace, it was seen that 18 barium meal examinations (5%) had been taken to confirm a clinical diagnosis of hiatus hernia as suspected from a 'classical history.' Palmer (1968) reports a corresponding incidence of 9%.

Gastro-oesophageal reflux has been reported to be present in at least 95% of patients with a sliding hiatus hernia (Edmunds, 1957). Our incidence is much lower than this. The reasons for this are twofold; reflux was not routinely looked for in our series and besides, unphysiological techniques were used by a number of investigators in obtaining the high incidence reported (Johnstone, 1951; Haften, 1957; Wolf and Guglielmo, 1957). The incidence of gastro-oesophageal reflux is said to be higher in patients with a hiatus hernia, but it must be borne in mind that the two conditions can occur independently (Ellis, 1972). It appears probable that a sliding hiatus hernia does not necessarily lead to gastro-oesophageal reflux (Wankling *et al.*, 1965; Lind *et al.*, 1966). A similar conclusion was reached by Hadded (1970) and Cohen & Harris (1971), who further point out that the competency of the sphincter depends on its inherent physiological integrity rather than on its anatomical location. On the other hand, Edwards and his colleagues (1964) claim that the position of the sphincter below the diaphragm is important in maintaining its competency. They cite in their support the fact that although the physiological competence of the sphincter may not be increased by surgical correction, a considerable number of those patients operated upon become asymptomatic even though reflux persists in a significant number. Similar views have recently been expressed by Hoffman and Sumner (1973).

Ellis (1972) claims that at least half the patients who have gastro-oesphageal reflux have pulmonary involvement as a result of aspiration. In our series we could only find one case with recurrent chest infection in whom no other predisposing factor besides a sliding hiatus hernia and

reflux was present. Regurgitation was the presenting symptom in only the 18 patients (5%) who had the 'classical' history and symptomatology of hiatus hernia. A number of the patients (129) in whom a hiatus hernia was detected had other gastrointestinal pathology. The symptoms listed in Table 2 cannot therefore be regarded as having been caused exclusively by the hiatus hernia.

It is well recognised that ischaemia which is quite obvious on an electrocardiogram may be entirely asymptomatic, may present with a vague feeling of heartburn or as postprandial indigestion. From the data emerging from this study we cannot but emphasize that an electrocardiogram is an essential part of the investigation of patients presenting only with vague chest or epigastric complaints and where only a hiatus hernia is discovered. Both conditions are common within the same age group and coexisted in 101 patients (28%) in our study. Palmer (1968) reports a 10% incidence.

From this study it appears that hiatus hernia does not seem to have a higher incidence in Malta than elsewhere. Hiatus hernias, especially in the absence of gastro-oesphageal reflux are often asymptomatic. In the symptomatic group there seems to be a higher incidence amongst females. There is a high incidence of patients who have other concomitant gastrointestinal or cardiac pathology besides a hiatus hernia. Before symptoms are attributed to a hiatus hernia, it is important that one looks for and excludes possibly more serious pathology, particularly, ischaemic heart disease.

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References

COHEN, S. and HARRIS, L.D. (1971) *New Eng. J. Med. 284,* 1053.

DYER, N.H. and PRIDIE, R.B. (1968) *Gut, 9,* 696.

EDMUNDS, V. (1957) *Quat. J. Med., 26,* 445.

EDWARDS, D.A.W., PHILIPS, S.F. and ROWLANDS, E.N. (1964) *Brit. Med. J., 2,* 714.

ELLIS, F.H., JR. (1972) *New Eng. J. Med., 287,* 13.

HADDAD, J.K. (1970) *Gastroenterology, 58,* 175.

HAFTEN, E. (1957) *Radiol. Clin., 26,* 282.

HOFFMAN, E. and SUMNER, M.C. (1973) *Thorax, 28,* 379.

JOHNSTONE, A.S. (1951) *J. Fac. Rad. Lond., 3,* 1.

LIND, J.F., WARRIAN, W.G. and WANKLING, W.J. (1966) *Canad. J. Surg., 9,* 32.

PALMER, E.D. (1968) *Am. J. Med., 44,* 566.

WANKLING, W.J., WARRIAN, W.G. and LIND, J.F. (1965) *Canad. J. Surg., 8,* 61.

WOLF, B.S. and GUGLIELMO, J. (1957) *Med. Radiogr. Clin. Photo., 30,* 90.