

Achalasia and Hiatal Hernia

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Several reports have emphasized the rarity of hiatal hernia in achalasia, despite the lack of inherent incompatibility of the two conditions and despite the relatively high frequency of hiatal hernia in the general population. We reviewed the radiographs of 71 of 94 consecutive patients with manometrically proven achalasia referred to Yale-New Haven Hospital. Unequivocal hiatal hernia was seen in 10 (14.1%) patients and was seen in nine of 35 (25.7%) patients 51 years old or more. Review of the radiographic reports from these 10 patients indicated that only two were properly recognized as showing both achalasia and hiatal hernia. All five patients who underwent pneumatic dilatation had excellent results. We conclude that hiatal hernia in achalasia is frequently unrecognized and underreported but is not rare, with a frequency probably similar to that of the general population.

KEY WORDS: achalasia; hiatal hernia.

Achalasia is an uncommon motor disorder characterized by aperistalsis of the esophageal body and incomplete relaxation of the lower esophageal sphincter (LES) in response to swallowing. Radiographically, the classic description is that of a dilated esophagus and of a tightness or narrowing of the gastroesophageal junction, resulting in a "bird's beak" appearance.

Although hiatal hernia is a frequent radiographic finding in the general population (1-3), several reports, including one from our institution, have emphasized its rarity in achalasia (4-7). Indeed, it has been suggested that the alternative diagnosis of hiatal hernia with peptic stricture and secondary esophageal dilatation should be especially excluded before accepting the diagnosis of achalasia and associated hiatal hernia (5, 6). However, several of these studies relied on radiographic reports or clin-

ical notes (4, 7), rather than review of actual radiographic and manometric studies. Moreover, current concepts about the etiology of achalasia (8, 9) suggest no inherent incompatibility between achalasia and hiatal hernia.

Prompted by these considerations and by our recent encountering of a patient with radiographic and manometric evidence for both achalasia and hiatal hernia, we sought to determine the prevalence of hiatal hernia in achalasia. We reviewed the actual radiographs and concluded that hiatal hernia in achalasia is not rare; its frequency is probably similar to that of the general population.

MATERIALS AND METHODS

We reviewed the records of 94 consecutive patients with manometric evidence for achalasia referred for consultation and/or manometric evaluation to one of the authors (M.T.) from August 1985 to October 1989. Manometry was performed in all patients in our laboratory in the usual manner, as described previously (10). Manometry revealed complete aperistalsis and, except in eight patients in whom the stomach could not be intubated, the LES was found to have incomplete relaxation in response to wet swallows. Seven of the 94 patients were excluded from analysis because they had prior esophageal surgery (four myotomy, three fundoplication) and their preoperative films were unavailable for review.

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ACHALASIA AND HIATAL HERNIA

TABLE 1. PATIENTS WITH ACHALASIA AND HIATAL HERNIA

Pt	Age (yr)	Sex	Symptoms			Study*	Radiographs		Diagnosis in original radiographic report		Treatment†
			Chest pain	Dysphagia	Heartburn		Hernia Size (h×w**, cm)	Hernia reducible	Achalasia	Hiatal hernia	
1	69	F	+	+	+	UGI	3.5 × 3.4	-	-	-	None
2	33	F	+	+	-	UGI	3.5 × 4.5	-	-	-	Myotomy
3	69	M	+	+	+	Esoph	3.0 × 2.4	+	-	+	PD
4	73	M	-	+	-	UGI	3.5 × 4.2	-	-	+	None
5	53	F	+	+	-	UGI	3.0 × 2.5	+	+	-	PD
6	68	M	+	+	-	UGI	2.6 × 2.5	-	+	-	PD
7	59	F	-	+	-	UGI	5.2 × 6.0	+	+	-	None
8	69	F	-	+	+	Esoph	2.0 × 2.0	-	+	-	Bougienage
9	63	M	+	+	-	UGI	5.0 × 6.5	+	+	+	PD
10	58	F	+	+	+	Esoph	3.3 × 2.2	-	+	+	PD

*UGI = upper gastrointestinal series; Esoph = esophagogram.

**Height × width.

†PD = pneumatic dilatation.

We located and reviewed 71 (82%) of the remaining 87 patients' barium studies, of which 41 were esophagograms and 30 were upper gastrointestinal series. Most studies had multiple views, including standard projections, and all films were reviewed. The radiographic diagnosis of hiatal hernia was made only if there was at least 2 cm of gastric mucosa above the diaphragm. All of the radiographic studies were reviewed by all four authors in joint session, and consensus by all was required and readily achieved; the rare equivocal case was not considered to be indicative of hiatal hernia.

RESULTS

The 71 patients with radiographic studies available for review included 37 males and 34 females, with a mean age of 49 years (range 7-85 years). Unequivocal hiatal hernia was seen in 10 (14.1%) patients (Table 1 and Figure 1), none of whom had previously undergone pneumatic dilatation. The hernia was reducible in four patients. The radiographs of the 10 patients showed moderate esophageal dilatation in five (maximal diameter 5.0-6.3 cm), mild dilatation in four (3.1-3.8 cm), and no dilatation in one (2.7 cm). They showed no esophageal tortuosity in six, mild tortuosity in two, and moderate tortuosity in two, including a distal "sigmoid" appearance in one. They showed moderate "tertiary" contractions in four, including one with distal "corkscrew" appearance, mild "tertiary" contractions in five, and no such contractions in one.

Hiatal hernia was seen in one of 36 (2.8%) patients less than 51 years old; it was seen in nine of 35 (25.7%) patients 51 years or older.

Review of the radiographic reports of the 10 patients with hiatal hernia revealed that two patients had been diagnosed as having both achalasia

and hiatal hernia, four as achalasia with no mention of hiatal hernia, two as hiatal hernia without achalasia, and two as neither achalasia nor hiatal hernia. Thus, there was definite underreporting by radiologists of the coexistence of both conditions.

All 10 patients had dysphagia, seven had chest pain, and four had retrosternal burning or heartburn. All had undergone endoscopy to exclude tumors and strictures. Of the 10 patients, five underwent pneumatic dilatation with excellent results, one was referred by her primary physician for myotomy, also with an excellent result, and the others underwent bougienage or had no treatment. There was no unusual difficulty in performing the pneumatic dilatations. One of the patients had hematemesis 10 days after dilatation but did not undergo transfusions or investigations. The two patients with heartburn who underwent pneumatic dilatation experienced complete eradication of this symptom after dilatation; one of the three patients without heartburn experienced infrequent heartburn postdilatation.

DISCUSSION

Hiatal hernia is commonly found in the general population, with a prevalence of approximately 20-50% (1-3). The wide range is partly dependent on the age of the population studied, since the frequency increases with age, possibly related to widening of the esophageal hiatus and loosening of the phrenoesophageal membrane (11). However, another important factor is the method of examination. Hiatal hernias are more readily identified with the patient studied in the prone position with con-

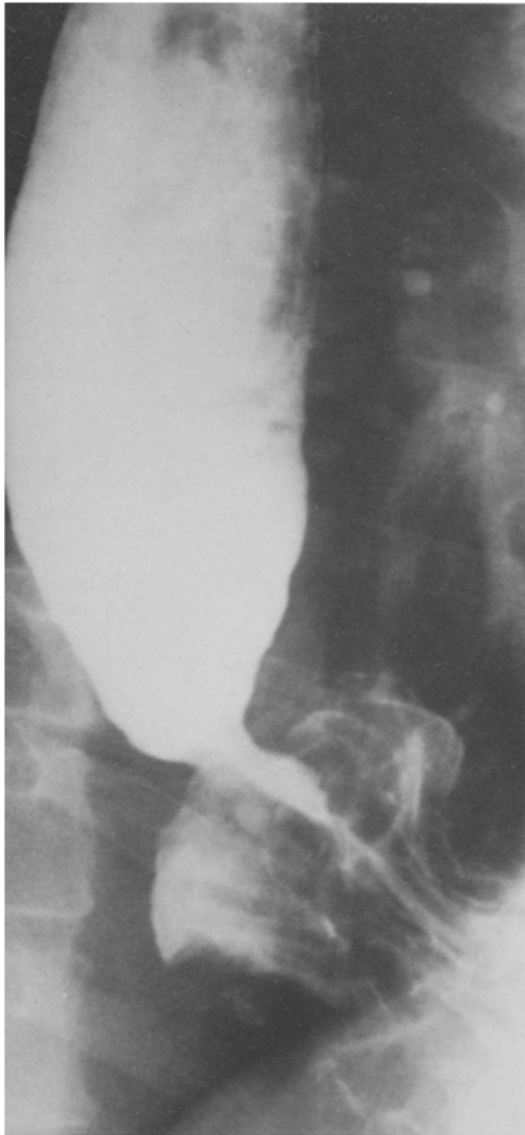


Fig 1. The esophagogram from patient 9 reveals a moderately dilated esophagus, retention of debris, and a large hiatal hernia. In other views, there was smooth distal tapering which extended below the diaphragm. Manometry in this patient showed typical achalasia, as well as a double respiratory reversal sign indicating a 4-cm-long hiatal hernia.

comitant abdominal compression, or when the supradiaphragmatic portion of the stomach is distended with swallowed air after the barium slides through the diaphragmatic hiatus (1–3, 12).

Several reports have emphasized the relative rarity of hiatal hernia in patients with achalasia (4–7). In Table 2, we list the various studies of the frequency of hiatal hernia in achalasia. However, two of the studies apparently relied on reviews of radiographic reports, rather than actual review of the radiographic studies

TABLE 2. PREVIOUS STUDIES OF HIATAL HERNIA IN ACHALASIA

Reference	Patients with achalasia (N)	Achalasia Patients with hiatal hernia, N (%)
4	601	10 (1.7)
5	43	1 (2.3)
6	64	8 (12.5)*
7	285	4 (1.4)
Current report	71	10 (14.1)

*Included three patients with previous myotomy or dilatation. When excluded, the adjusted prevalence is 5/61 (8.2%).

(4, 7). Patients with hiatal hernia who had previously undergone pneumatic dilatation or myotomy were included in some analyses (5–7). One report prospectively compared its achalasia patients to a control population of consecutively seen patients having barium studies (5). However, use of the latter patients as controls could be considered biased because they may have been studied because of dysphagia, heartburn, or other symptoms of gastroesophageal reflux, and hiatal hernias would be expected among such patients. In addition, a patient with a dilated esophagus was excluded because of apparent normal relaxation of the LES; the manometric properties in the esophageal body were not described (5). However, achalasia with apparent normal relaxation of the LES has since been reported (13). Finally, the criteria for the diagnosis of hiatal hernia were either not given (4–6) or poorly defined (7) in the previous reports.

In our study of consecutive patients, the actual radiographs were reviewed, and the study indicated that hiatal hernia is indeed common among patients with achalasia. Our reported prevalence of 14% is higher than that of the previous studies (4–7). Moreover, in the group of patients at least 51 years old, the prevalence was 26%, a frequency that is probably similar to that in the general population. Although it has been suggested that patients with achalasia may not be able to swallow enough barium to demonstrate a hiatal hernia, this has not been an important consideration in our experience.

Our review of the radiographic reports of the 10 patients with hiatal hernia revealed that only two of the 10 were properly diagnosed with both achalasia and hiatal hernia. This finding supports our contention that radiologists may have frequently underreported the combined findings of achalasia and hiatal hernia. Although this is partly related to the frequent misdiagnosis of achalasia (14), the previous reports of rarity of hiatal hernia in patients with achalasia could influence the way physicians inter-

pret and report the findings of the radiographs. Finally, radiologists may have considered it too trivial to report hiatal hernia, particularly in the presence of more substantial abnormalities of the esophageal body and gastroesophageal junction.

Our study has potential limitations. Different physicians may have used varying vigor in attempting to diagnose hiatal hernia, and our review was unblinded and used still films without the help of fluoroscopy. Nevertheless, this review was of actual films, not reports, and there was ready consensus by experienced physicians. Moreover, four of the hiatal hernias were in fact diagnosed by the original radiologists, who recognized achalasia in only two of these four patients. These four cases alone would yield a series prevalence of hiatal hernia in achalasia of 6%, higher than most previous studies (Table 2). Finally, it should be noted that once we were aware of our hypothesis that hiatal hernia occurred in achalasia, we could not, on a practical basis, review films blindly. We consider our broad conclusion about the frequent coexistence of hiatal hernia in achalasia to be more important than a definitive determination of the exact prevalence.

It is of interest that four of the 10 patients with achalasia and hiatal hernia had heartburn. However, this frequency is not different from our previous experience with unselected, consecutive patients with achalasia, in whom a prevalence of 44% was seen (14). This is actually expected, since the heartburn in achalasia is usually not related to gastroesophageal reflux, as the sphincter does not relax sufficiently for reflux to occur (15); rather, the heartburn is related to stasis of food, which is then fermented by bacteria within the esophagus (16). Therefore, it should not be surprising that the heartburn disappeared after pneumatic dilatation in the two patients with this symptom preoperatively.

Despite the lack of contribution of the hiatal hernia to heartburn in patients with achalasia, the presence of an hiatal hernia could lead physicians to an incorrect diagnosis and treatment for gastroesophageal reflux, either with medication or fundoplication. It is hoped recognition that hiatal hernia may be seen in patients with achalasia will diminish the likelihood of such treatment.

Finally, although our series of patients with pneumatic dilatation in those with achalasia and hiatal hernia is small, our limited experience suggests that such treatment can be performed successfully. Only

long-term studies in larger numbers of patients would allow for a more definitive statement.

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