PLEURAL FIBROMA*

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Primary intrathoracic neoplasms are common, but pleural fibromata are rare. This is emphasized by the frequent asymptomatic presentation and consequent difficulty in diagnosis. Harrington[1] discovered only 13 pleural fibromata among his series of 198 cases of primary thoracic neoplasms.

A case of pleural fibroma in which pneumoperitoneum was employed as an aid in localization and diagnosis is here described.

PRESENTATION

Pathology

Embryologically, the pleura is derived from the middle germ layer, and fibromata may originate from either the visceral or parietal pleura. Other sites of thoracic fibromata are the bronchi, the mediastinum and the thoracic wall.

The tumour always appears encapsulated and there is some controversy as to whether it forms its own capsule or reactive changes produce encapsulation. In Clagett and Hausman's series of 24 cases there was an accompanying pleural effusion in 4.[2]

Clinical

The clinical presentation of pleural fibroma may be somewhat bizarre but in general can be classified into 3 groups:

Group (I): Asymptomatic—in these cases the tumour is discovered on routine radiography.

Group (II): The symptoms are produced by virtue of the size of the tumour and in the main constitute signs of dyspnoea.

Group (III): These patients complain of a rheumatic-type pain, with or without slight clubbing of the fingers. Frequently chills and fever accompany the rheumatism. Clagett and Hausman found these symptoms present in 65% of cases.[2]

CASE REPORT

A 70-year-old male presented with severe exertional dyspnoea, following an attack of influenza 4 weeks previously. He had had an intermittent, productive cough for approximately one year and had lost about 4 lb. in weight. There was no associated chest pain.

Past History

In 1962 he complained of right-sided subcostal pain, aggravated by meals, and was diagnosed as having a hiatal hernia. Later that year he had an episode of melaena which necessitated blood transfusion.

Repeated barium meals failed to demonstrate any hiatal hernia or other upper gastro-intestinal pathology. Subsequent to this he developed 'rheumatic' pains in the shoulders, elbows and wrists. This was ascribed to rheumatism, and he was treated accordingly for the following 5 years.

On Examination

He was an elderly man who appeared slightly dyspnoeic. His blood pressure was 180/110 mm.Hg. There was grade 2 clubbing of the fingers.

On percussion a slight dullness was found at the left lung base. There were no other abnormal clinical signs.

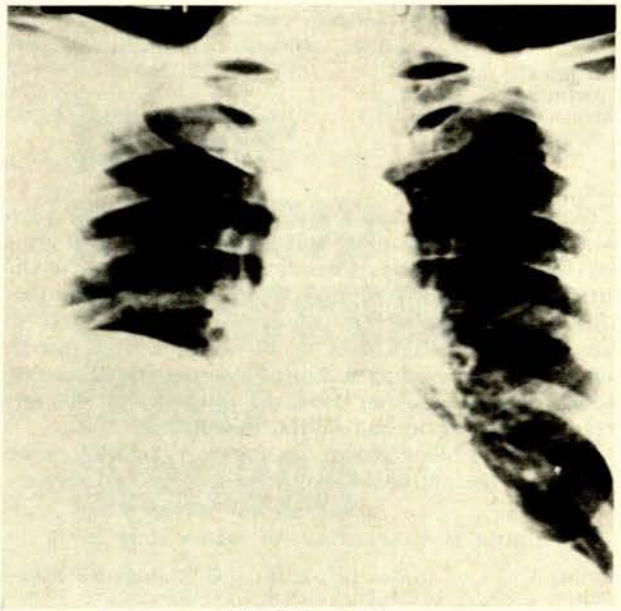

Fig. 1. See text.

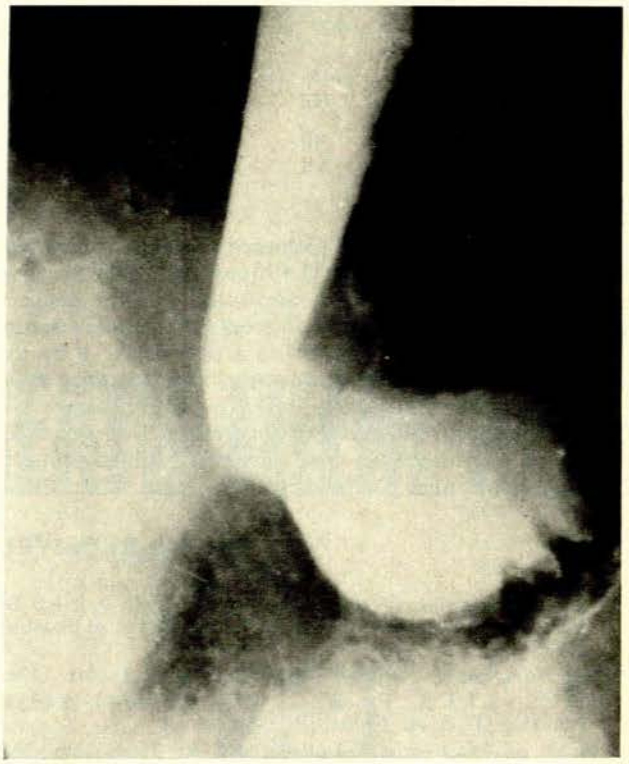

Fig. 2. See text.

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Radiological Findings

Chest radiographs and screening demonstrated marked elevation of the right hemidiaphragm with restriction of excursion (Fig. 1). There was no indication of whether the lesion was supra- or infradiaphragmatic.

Review of previous chest radiographs taken in 1961 demonstrated slight flattening of the right hemidiaphragm. Although no chest radiographs were available in 1962, barium radiographs revealed that there was marked elevation of the right hemidiaphragm at that stage (Fig. 2).

Barium studies and intravenous urography proved negative. A diagnostic pneumoperitoneum was performed, employing carbon dioxide. The technique has been described previously.[3]

The diaphragm was delineated and a mass demonstrated (Fig. 3). This mass appeared large, rounded and well

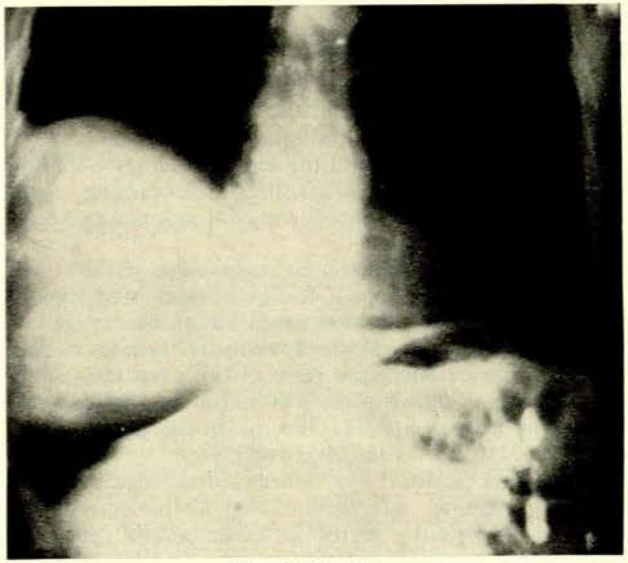

Fig. 3. See text.

defined and produced an inferior convex bulge of the diaphragm. It extended towards, but could not be separated from, the mediastinal structures. On its lateral aspect there appeared a slight loss of density.

The superior liver surface was visualized and no connection was demonstrated between the mass and the liver.

Bronchoscopy

Bronchoscopy was undertaken by Mr Marchand. The right basal bronchi appeared to be displaced backwards and rather compressed on the right side. No other pathology was noted.

At thoracotomy a large tumour was excised. This tumour was adherent to the parietal surface of the lung parenchyma and also to the superior surface of the diaphragm.

The tumour weighed 2,800 G and appeared slightly lobulated. Histology demonstrated spindle-cell connective tissue with no mitotic figures. The vessels in the tumour were thick-walled, indicating that the mass had been there for some length of time. These features are characteristic of pleural fibroma.

DISCUSSION

The clinical manifestations of pleural fibromata may be fairly typical, with articular symptoms which provide a pointer towards the diagnosis. However, when articular reactions are of short duration and unaccompanied by clubbing, it might be impossible to distinguish them from conventional rheumatoid arthritis. Furthermore, to quote Clagett *et al.*[4] 'It must be admitted that a definite diagnosis of fibrous pleural tumour was not made pre-operatively in any of the cases in this series'.

Among the cases described in the literature, there is no mention of diagnostic pneumoperitoneum being employed in the evaluation of primary intrathoracic neoplasm. Pneumoperitoneum is a simple and safe procedure which can be performed in the outpatient department with minimal discomfort to the patient, and has the advantage of providing definitive evidence as to whether the lesion is supra- or infradiaphragmatic.

It may also provide a definitive localization of the tumour, as in this case, which provides the surgeon with valuable information, allowing a planned approach.

SUMMARY

Pleural fibromata are a rare form of primary intrathoracic neoplasm. A further case is described. There are numerous difficulties inherent in the diagnosis of lesions involving the diaphragm, and the value of pneumoperitoneum in assessing such lesions is discussed.

I wish to thank Kodak Laboratories for the photographic reproductions.

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