SPONTANEOUS PNEUMOTHORAX AS A COMPLICATION OF PULMONARY SARCOIDOSIS

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The occurrence of spontaneous pneumothorax is described in four patients with pulmonary sarcoidosis in whom there was histological confirmation of the diagnosis. This condition as a complication of pulmonary sarcoidosis has been reported previously in only five patients. Isbister (1945) recorded the case history of a woman aged 22 who first had a left spontaneous pneumothorax, followed six weeks later by a right spontaneous pneumothorax. Histological proof of sarcoidosis was not obtained, but, apart from this, all the features of the illness were typical of pulmonary sarcoidosis. He found no earlier cases. Dressler (1947) reported a right spontaneous pneumothorax occurring in a man with histologically confirmed pulmonary sarcoidosis. Riley (1950) described two further cases in negroes. The first, aged 40, had a spontaneous pneumothorax on the right side. The second, aged 21, had two spontaneous pneumothoraces on the right side, and later one on the left side. Histological proof of sarcoidosis was obtained in both cases. Gendel and Luton (1951) reported a left spontaneous pneumothorax in a negro aged 27 in whom there was also histological confirmation. We have been unable to find any later references to spontaneous pneumothorax complicating pulmonary sarcoidosis.

Case 1

A man aged 44 was first seen in April, 1949, when he complained of dyspnoea on moderate exertion, lassitude, cough, and sputum. These symptoms had been increasing gradually for 18 months. He gave a history of asthmatic attacks between the years 1924 and 1940.

On physical examination widespread rhonchi were heard on inspiration and expiration. A radiograph showed slightly enlarged hilar shadows with mottled opacities in the right upper and middle zones, and mottled streaking in the left upper and middle zones. A radiograph taken in October, 1948, showed a similar appearance, although the abnormal shadows were slightly less pronounced on both sides. A bronchoscopy showed a normal bronchial tree. Many sputa were returned negative for tubercle bacilli on direct smear and culture.

The patient was kept under observation until March, 1950, when he was admitted to hospital because of a respiratory illness with fever up to 102° F. (38.9° C.), increased cough, sputum, and breathlessness. At this time there were widespread rhonchi, slight cyanosis, and small axillary glands. Radiography of the chest showed that no change had taken place since 1949. Streptococci but no tubercle bacilli were found in the sputum. The blood count showed: red cells, 4,500,000; Hb, 85%; white cells, 14,000 (81% neutrophils). The E.S.R. was 14 mm. at 1 hour (Westergren). The total serum proteins were 7 g. per 100 ml. (albumin 3.25 g., globulin 3.75 g.). An intradermal tuberculin test was negative to 1/100 old tuberculin (O.T.). Radiographs of the bones of the hands and feet showed no abnormality. A tentative diagnosis of pulmonary sar-

coidosis was made. A radiograph of the chest on May 5 showed a right spontaneous pneumothorax which had re-expanded by May 27. In July he had another febrile respiratory episode. This was accompanied by a definite change in the radiograph of the chest, which showed increased opacities in the right middle zone.

He was kept under observation until February, 1951, when he was given morphine in an acute attack of asthma. Death followed within a few hours. Histological examination following necropsy showed typical sarcoid lesions in lymph nodes, lung, and liver.

Case 2

A woman aged 54 was first seen in July, 1955, when she gave a history of having spent much of the previous 12 months in bed because of swelling of the ankles and dyspnoea on exertion. She had lost about 1 stone (6.4 kg.) in weight, and had a slight cough and sputum. During this period there had been recurrent iritis, and five months previously an iridectomy for left-sided glaucoma.

On physical examination enlarged supraclavicular and axillary glands were found. There was impairment of percussion over both upper zones, and bronchial breathing was heard, but no added sounds. She was not cyanosed and could lie flat in comfort. A radiograph showed widespread opacities over both lung fields. These were dense and linear in the upper zones and associated with translucencies suggestive of emphysema. An intradermal tuberculin test was negative to 1/100 O.T., a blood count was within normal limits, and the E.S.R. was 25 mm. at 1 hour (Westergren). The total serum proteins were 8 g. per 100 ml. (albumin 4.2 g., globulin 3.8 g.). Radiographs of the bones of the hands and feet showed no abnormality. A liver biopsy revealed typical sarcoid follicles, but a Kveim test was negative.

About one month later the patient had pain on the right side of the chest and much-increased breathlessness. A radiograph on September 21 showed bilateral spontaneous pneumothoraces. The right-sided pneumothorax was treated by pleurodesis with 5 ml. of 0.5% camphor in oil. Re-expansion took place on both sides. There has been no recurrence of pneumothorax.

Case 3

A woman aged 28 was first seen in January, 1955, when she complained of dyspnoea, cough, sputum, and lassitude. Sputum was about 5 oz. (114 ml.), occasionally stained with blood. She also complained of pain, described as an ache at the left base, since an attack of acute dyspnoea one year previously. Her brother-in-law had died of pulmonary tuberculosis in 1943, but there had been little contact. There was a past medical history of bronchitis for 10 years.

On physical examination diminished breath sounds were noted in both lungs. Neither the liver nor enlarged glands were palpable. The E.S.R., blood picture, plasma proteins, and other investigations were within normal limits or non-contributory. Sputum was negative on culture for tubercle bacilli and the tuberculin skin test was negative to 1/10 O.T. Chest radiographs showed fine and coarse mottling throughout both lungs, density being greater at the periphery and mid-zones. Scattered translucent areas suggestive of emphysema were particularly marked at the apices, where they appeared as bullae. Linear shadows were pronounced in the lower zones and gross peaking of both diaphragms was evident. Radiographs of the bones of the hands and feet were normal. A previous radiograph taken in another hospital in 1948 showed indefinite bilateral mottling and appearances suggestive of infiltrative lesions. The abnormalities were then slight compared with recent radiographs.

When seen in February, 1955, the patient complained of some tightness of the chest, but was otherwise well. A radiograph showed a right spontaneous pneumothorax. In March, while sitting in a chair at home, she had felt a

sharp pain in the left chest. A radiograph showed a small left spontaneous pneumothorax. The right side had re-expanded. She was admitted to hospital, where a left thoracotomy was performed. This showed the visceral pleura to be somewhat injected; there were a number of fine bullae over the surface and a few larger scattered bullae. The lung felt very firm and nodular, and a biopsy of lung showed pathological appearances typical of sarcoidosis. Pleurodesis was performed with camphor. There has been no recurrence of pneumothorax.

Case 4

A man aged 34 was admitted to hospital in January, 1954, for investigation of a painless swelling in the right groin. There was a history of shortness of breath over the previous six years. His medical history and family history were non-contributory. Examination revealed bilaterally enlarged lymphatic glands in occipital, supraclavicular, axillary, epitrochlear, and inguinal regions. The liver and spleen were not enlarged. The E.S.R. was 25 mm. at 1 hour (Westergren), and a tuberculin test was negative to 1/100 O.T. Laryngeal swabs were negative for tubercle bacilli. Other investigations, including blood count and plasma proteins, were normal or non-contributory. Chest radiographs showed massive hilar adenopathy, a large paratracheal mass in the right superior mediastinum, and diffuse reticular shadows throughout the lungs, most pronounced in the upper zones. Radiographs of the bones of the hands showed no abnormality. Biopsy of a gland showed appearances typical of sarcoidosis. The patient was discharged from hospital and kept under observation.

In March he complained of shortness of breath of some weeks' duration. A left spontaneous pneumothorax was found on physical examination and confirmed radiographically. Hospital admission was delayed for six weeks at the patient's request, and repeated x-ray pictures taken subsequently when he was an out-patient showed that the lung had failed to expand. He was then admitted with pyrexia and a pleural rub at the left base. Laryngoscopy, performed because of a history of hoarseness, revealed a left recurrent nerve palsy. The E.S.R. was 50 mm. at 1 hour (Westergren). Chlortetracycline was prescribed and the lung gradually re-expanded over a total period of two months. Apart from shortness of breath, he has remained symptomatically well.

Discussion

During the last decade it has become obvious that sarcoidosis is a much commoner disease than was previously thought. It is certain also that many cases of pulmonary sarcoidosis were diagnosed in the past as pulmonary tuberculosis with a sputum negative for tubercle bacilli. The scarcity of reports of spontaneous pneumothorax complicating pulmonary sarcoidosis is difficult to explain. A number of such pneumothoraces have no doubt been regarded as complications of pulmonary tuberculosis, but this cannot be the only explanation. Either it is really uncommon or its occurrence has been taken for granted by many clinicians and hence not described. The occurrence of two patients with this complication among the 52 cases of pulmonary sarcoidosis reported by Riley (1950) possibly suggests the latter hypothesis. Until we searched the literature we had no idea that it had been reported only five times previously.

The underlying pathological changes in pulmonary sarcoidosis, both in its infiltrative stage and in its chronic fibrotic stage, are likely to be accompanied by areas of emphysema, and, apart from the absence of caseation and cavitation, are not unlike those of pulmonary tuberculosis. It is probable that when spontaneous pneumothorax occurs in sarcoidosis it is due to the rupture of an emphysematous bulla. This may happen in tuberculosis also, but the frequent presence of caseous lesions and cavities provides additional causes for spontaneous pneumothorax and an explanation of its commoner occurrence in tuberculosis.

Summary

Four cases of spontaneous pneumothorax complicating pulmonary sarcoidosis are reported. In two patients it was bilateral. Although this complication has been reported previously in only five patients, reasons are given for thinking that it may not be rare.

We are indebted to Dr. E. D. H. Cowen for permission to include the records of his patient, Case 4.

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HERPES ZOSTER, CHICKEN-POX, AND CANCER IN GENERAL PRACTICE

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The belief is prevalent that an association exists between herpes zoster and chicken-pox, and recently it has been suggested that there is a relationship between cancer and herpes. Provided accurate and continuous note-taking is undertaken any such relationship should be capable of being investigated by the family doctor.

In my practice of some 2,400 patients I have kept accurate and complete records of all ailments since July 5, 1948. The practice is two-thirds suburban and one-third rural. The following information is based upon an analysis of the records of these illnesses in question during the seven-year period from July 5, 1948, to July 4, 1955.

Herpes Zoster

It is possible that all patients with herpes zoster consult their family doctor. This, of course, is due to the discomfort and sometimes severe pain that it causes, associated with the blemishing of the skin. During the seven-year period of this review I had 81 cases of herpes zoster. Table I shows that, while the frequency varies slightly between the sexes in different age groups, the overall picture is that the sexes are equally involved. In both sexes the older age groups are more often affected.

Table II shows the location of the disease; the sex is included for possible variations. In both sexes the thoracic wall is the area most frequently involved. The head and

TABLE I.—Age Incidence of Herpes Zoster

Age	Male	Female	Total	Per 1,000 at Risk	
				Male	Female
0-4 years ..	0	0	0	0	0
5-14 " ..	2	2	4	19.0	14.8
15-44 " ..	10	6	16	19.0	12.0
45-64 " ..	20	17	37	71.0	45.8
65+ " ..	9	15	24	62.0	81.0
Total ..	41	40	81	34.1	31.0

TABLE II.—Location of Herpes Zoster

	Male	Female	Total
Head and neck ..	11	6	17
Upper and lower extremities ..	2	10	12
Thoracic wall ..	20	20	40
Abdominal wall ..	7	4	11
Not known ..	1	0	1
Total ..	41	40	81