CONCLUSION

Autoclaving at 15 lb. pressure for twenty minutes frequently failed to sterilize all-glass syringes lubricated and assembled dry and could not be relied upon to sterilize nylon syringes similarly prepared.

Autoclaving at 15 lb. for twenty minutes sterilized all-glass and nylon syringes assembled dry and unlubricated. This result may be due to the make of syringe used.

Autoclaving at 15 lb. for twenty minutes sterilized all-glass and nylon syringes assembled wet.

A commercially produced indicator of autoclave efficiency has been tested. Further information is required on the proportion of steam necessary to effect a colour change.

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INTRALOBAR SEQUESTRATION OF THE LUNG

A REPORT OF TWO CASES

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An intralobar sequestration of the lung is a defect consisting of a partial or complete developmental separation of a portion of the lobe of the lung from its continuity with the bronchial tree. It is supplied by a large thin-walled artery usually arising from the thoracic or abdominal aorta, but occasionally from smaller vessels such as the intercostal or phrenic artery.

Since Pryce Sellors & Blair (1947) described several such cases, the condition has been more often sought and more often recognized. As the diagnosis is rarely confirmed prior to thoracotomy, we believe that this developmental defect occurs

Fig. 1 CASE 1.

Fig.

FIG. 1. Right lateral tomograms showing cystic area in posterior basal segment of the right lower lobe.

FIG. 2. The lower lobe after its removal at operation. The pulmonary artery has been filled through the cannula *A* and the aberrant vessel off the aorta through cannula *B*.

PLATE I

more commonly than was once supposed. Below are recorded two such cases that were treated in the Army Chest Centre during 1955.

Case 1. A 19-year-old National Service private, with no previous history of chest symptoms, reported sick in 1954 complaining of malaise, sweating, a non-productive cough and right-sided pleuritic pain. He was admitted to hospital with a diagnosis of pneumonia, his physical signs and chest radiographs suggesting consolidation of the right lower lobe. On penicillin therapy he made a rapid symptomatic recovery, but his chest radiographs were slow to show any improvement. Three weeks after his admission to hospital he developed a productive cough, bringing up large quantities of thick purulent sputum. His chest films now showed a cavitated lesion in the posterior basal segment of the right lower lobe. He was considered to be a post-pneumonic lung abscess and was treated with continued chemotherapy and posture. In May, 1954, he was discharged from hospital, his chest radiograph having returned to normal.

He remained quite well, apart from a slight productive cough, until April, 1955, when he again complained of right-sided pleuritic pain. He was admitted to the Army Chest Centre on 26th May. He had no abnormal physical signs. His white cell count and E.S.R. were normal; chest radiography, including right lateral tomograms, revealed a large cystic area of lung situated posteriorly in the right lower lobe. The bronchogram showed that these cysts communicated with the bronchial tree by way of the posterior basal segment bronchus.

On 27th July a right lower lobectomy was performed by Mr. Kent Harrison. At operation it was found that the cystic lesion occupied the posterior lateral aspect of the lobe and was supplied by a large thin-walled artery appearing through the aortic opening, running adjacent to the aorta, and reaching the lung through the inferior pulmonary ligament.

Case 2. A 45-year-old major with a four-year history of a "smoker's" cough, producing a teaspoonful of purulent sputum daily, reported sick in September, 1955, after having suddenly coughed up about half a pint of blood. He was admitted to hospital, where chest radiography (including full plate tomograms) revealed a cystic area of lung apparently in the posterior segment of the left lower lobe. A bronchogram showed that the cysts communicated with the bronchial tree via the posterior basal segment bronchus. Bronchoscopy was normal.

On 21st November Mr. Kent Harrison removed the basal segments of the left lower lobe. At operation the lobe appeared normal from the surface, but an ill-defined mass was palpable in its base, posteriorly. A large artery was found to come off the aorta just above the level of the diaphragm and reach the sequestrated segment by way of the inferior pulmonary ligament.

DISCUSSION

The two cases described above are typical of this condition, the first case illustrating the point made by Abbey Smith (1955) that the fact that the chest radiographs return to normal after an acute inflammatory episode does not rule out the diagnosis of sequestrated lung segment.

Cases have been described in all age groups. Occasionally they are discovered

on routine chest radiography. More often, the condition is discovered during the investigation of recurrent chest infections, persistent cough or repeated hæmoptyses. The lesion is more often found in the region of the posterior basal segment of the left lower lobe and may consist of a large thin-walled cyst, multiple cystic areas or a mass of tortuous dilated bronchi running along the course of the aberrant artery. They may, or may not, communicate with the normal bronchial tree. The diagnosis is rarely confirmed before thoracotomy except in those cases where an angiogram reveals the presence of the aberrant vessel.

Development. It is generally believed that the defect occurs between the fifth and seventh week of embryonic life when the laryngo-tracheal tract grows ventrally from the caudal end of the foregut. At this stage the dorsal aorta communicates through small vascular channels with the vessels surrounding the embryo lung by way of the area vasculosa which is the plexus of vessels surrounding the primitive gut. It is the persistence of such a communicating channel that accounts for the aberrant artery that supplies the sequestrated segment. A commonly accepted theory is that the aberrant artery is the prime factor in the subsequent development of the abnormal lung (Pryce *et al.* 1947). On the other hand, it has been put forward that the primary exclusion of a primitive lung bud with subsequent loss of pulmonary artery supply would account for a compensatory persistence of a systemic (aortic) vascular supply (Jones, 1955).

Pathology. In both cases described the pathological changes were similar, in that the lesion consisted of thin-walled cysts surrounded by fibrotic lung tissue and communicating with the normal bronchial tree by way of tortuous and dilated bronchi.

TREATMENT

In all cases surgery is advised as these congenital defects tend to become repeatedly infected or they may be the source of a massive hæmoptysis. It is important in all suspected cases to find and ligate the abnormal vessels. Several cases have been recorded where the vessel coming through the diaphragm has been inadvertently cut, with a resulting fatal hæmorrhage.

SUMMARY

Two cases of intralobar sequestration of the lung are described. The condition is more common than was once supposed and should be suspected in all cases of isolated cystic disease of the lung, especially when situated in the posterior basal segments of the lower lobe.

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