Atypical Radiological Presentations of Pulmonary Tuberculosis

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ABSTRACT

Unfamiliar mainfestation of pulmonary tuberculosis found in Central and West Africa are presented. These include egg shell calcification in parenchyma and glands, calcification of the diaphragmatic pleaura resembling asbestosis, honeycombing and B Kerley's lines with or without complicating bronchiectasis. There should be an index of suscipicion of pulmonary tuberculosis even when other typical tuberculous lesions are not associated with these lesions not normally attributed to the disease.

INTRODUCTION

This paper describes four manifestations found in Africans which are normally not attributed to the disease.

Much has been written about pulmonary tuberculosis and the pleomorphism and atypical presentations in the negro are well recognised. Due to the very varied patterns of presentation some aspects of the disease are yet to be recognised and the appearance of tropical patterns (Reeder & Palmer 1981) in non Africans living in Western countries further emphasises the need to recognise abberrations which should not compromise suspicion or diagnosis of pulmonary tuberculosis.

MATERIALS AND METHODS

Hospital patients, factory workers in Central Africa (Zambia) and eastern provinces of Nigeria were studied over a period of 4½ years. A total of 693 patients were studied. Two hundred and sixteen were females.

Diagnosis was based on positive findings in the sputa, biopsy specimens and radiological findings. Elucidation of radiological lesions with complementary investigations including vascular studies, apical views and tomography were done when indicated.

The age distribution and radiological findings are summarised in Tables 1 & 2.

Our interest was only in the unfamiliar features of the disease.

RESULTS

Dilatation and Convergence of Upper Lobe Vessels in Focal Low Grade Pulmonary Tuberculosis

In 33 patients there was distortion of dilated upper lobe vessels which converged towards tuberculous focus or foci, in the apical or sub-apical region (Fig. 1). In 22 of these patients, tuberculous lesion(s) were obvious but in 11 patients apical or lordotic views were necessary to demonstrate parenchymal foci which were small and hidden behind the clavicles.

Pulmonary arteriography done in one patient confirmed that the converging thickened linear shadows were distended vessels.

TABLE 1

Unfamiliar Shadows Found in Pulmonary Tuberculosis	
Dilatation and convergence of upper lobe vessels	33
B Kerley's Lines (Without complicating bronchiectasis)	17
Reticular or Honeycomb Lung with no other abnormal shadows	13
Egg Shell calcification in glands or parenchyma	8
Calcification only in diaphragmatic pleura	6

TABLE 2

Age Distribution of Patients Studied	
Less than 10 years (4 months)	1
11–20	94
21–30	158
31–40	128
41–50	134
Over 50 years	178

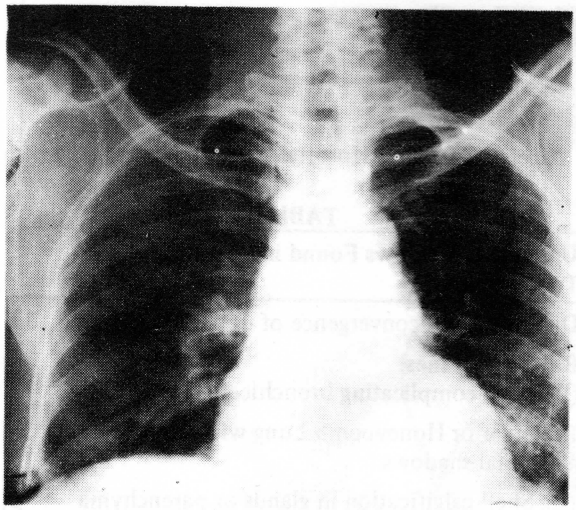
Septal Lines (B Kerley's Lines)

B Kerley's lines were shown in 48 patients. In one of these patients a bronchogram was done and was normal. In 22 other patients with B Kerley's lines there was evidence of complicating bronchiectasis.

Reticular or Honeycomb Lung

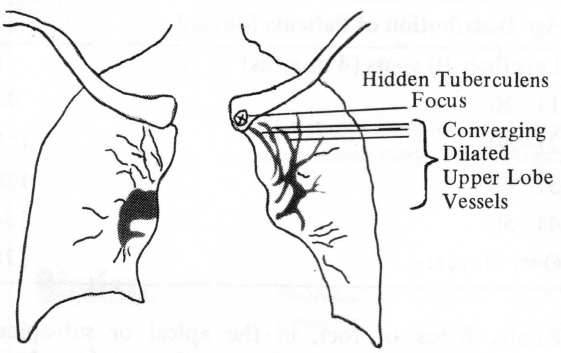
Reticular or honeycomb pattern was found in chronic and healing phases of the disease in 42 patients. In the majority nodular, cavitary or patchy shadows as well as the distribution of the lesions

FIG. 1a



Left upper lobe vessels are dilated and converge towards a tuberculous focus. See fig. 2.

FIG. 1b



Schematic illustration of Fig. 1. X is the site of the lesion shown with apical view. The left hilum is prominent.

characteristic of the disease were present. In 13 patients, however, there was only diffuse reticular or honeycomb pattern in the lung fields. It was noted that the distribution included the upper lobes.

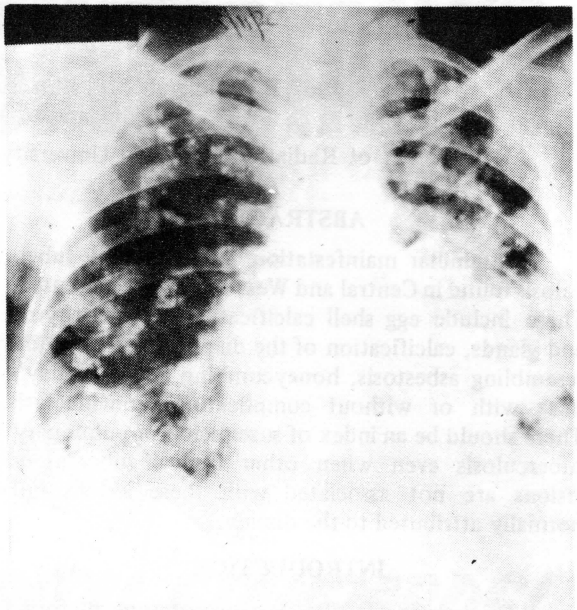
Egg Shell Calcification

Egg shell calcification was found in 8 patients, 4 males and 4 females. The patients were aged over 50 years, and the disease was chronic – (in excess of 2 years). The distribution was in glands in 3 patients and in 2, both parenchymal and glandular, (Fig. 2).

Calcification of the Diaphragmatic Pleura

Calcification of the diaphragmatic pleura was seen in a total of 19 patients. In 6 there were no

FIG. II



Wide spread foci with egg shell calcification. The distribution includes both apices.

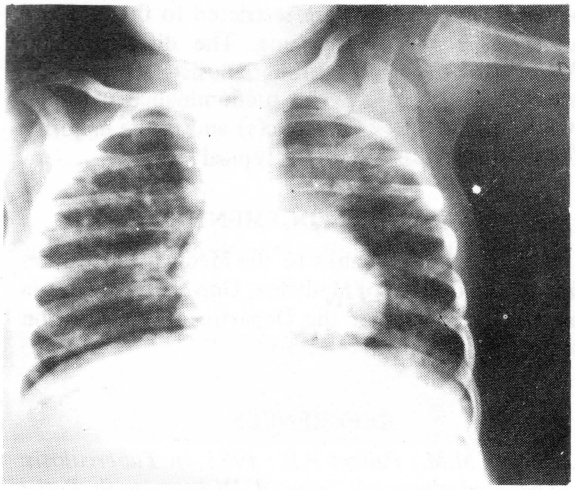
other associated abnormal shadows but as in all the patients acid fast bacilli were consistently present in the sputa.

Four patients had basal fibrosis with shagginess of the cardiac borders. Three had associated calcified pleural plaques elsewhere. In the remaining 9 patients, there were abnormal shadows in the radiograph consistent with tuberculosis. None of these patients (15 of whom lived in rural hamlets) were exposed to asbestos.

DISCUSSION

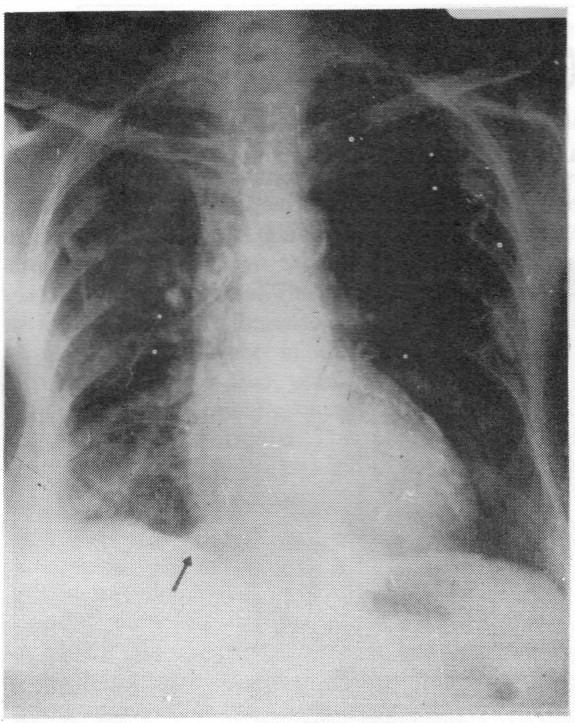
Convergence of upper lobe vessels was found in patients who had only one focus or two foci of infection near to each other. This distortion is undoubtedly due to cicatrization around the lesion(s). When the infection disseminates and traction is no longer in one direction and distortion of the vasculature becomes characteristically haphazard. It is therefore in the early and localised low grade tuberculous infection when diagnosis may be difficult that convergence of dilated vessels is to be found and this appearance should be a very valuable sign of minimal tuberculosis which may need apical/lordotic films or tomography to confirm and demonstrate hidden foci. Convergence of dilated upper lobe vessels should be recognised as a valuable sign of minimal tuberculosis which may otherwise escape detection.

FIG. III



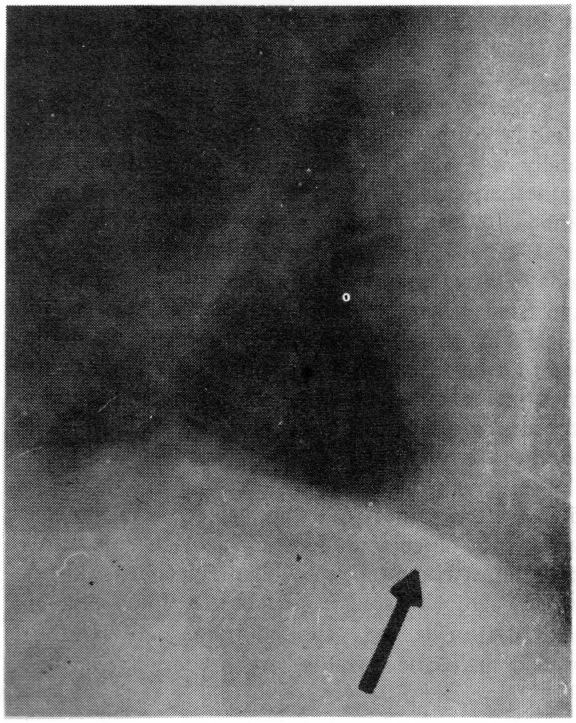
Honeycomb pattern in a child with tuberculosis. Note right hilar adenopathy and left upper lobe consolidation.

FIG. IV



Calcified pleural plaques in diaphragmatic pleura. Other plaques are shown in the pleura and pericardium as well as pleural thickening in the right costophrenic sulcus.

FIG. V



Lateral film of another patient showing calcification in posterior two-thirds of diaphragmatic pleura.

B Kerley's Lines are found in many conditions in Western countries notably left ventricular failure, mitral valve disease, etc. It is interesting that in African medical practice, septal lines are very rarely found in these two conditions. This observation is confirmed by other workers (Parry 1979, Cockshot 1981). Many theories have been advocated for this discrepancy. In the evaluation of the significa of the relationship of B Kerley's lines with chron tuberculosis, a distinction is made from patients who have developed bronchiectasis. The association of B Kerley's lines and bronchiectasis is recognised and is common in African medical practice. Bronchography in one patient however confirmed that septal lines exist in chronic pulmonary tuberculosis without complicating bronchiectasis. It is not obvious why septal lines are rarely seen in similar cases in Western practice; it is possible that patients in industralised nations receive early and adequate treatment during the course of the disease.

Egg shell calcification normally found in other conditions including silicosis, silicotuberculosis and sarcoidosis is not usually associated with tuberculosis per se. It is interesting to demonstrate this form of calcification in uncomplicated tuberculosis. In this

group of patients the disease was low grade and cough was not a prominent feature. The disease should be recognised as an uncommon cause of egg shell calcification.

Pleural calcification is common in chronic pulmonary tuberculosis. Other pulmonary lesions are usually present to suggest the diagnosis and the plaques are rarely on the diaphragmatic pleura. In some patients, however, basal pleural on the diaphragmatic surface sometimes with fibrosis in the lung bases (Fig. 7) were the only abnormalities. Distinction from asbestosis becomes impossible on radiological grounds alone. In Africa tuberculosis should therefore be excluded in all patients presenting with basal pleural plaques even when there has been exposure to asbestosis since tuberculosis is rife and asbestosis so rare.

The many causes of diffuse reticular and honeycomb patterns in Africa are yet to be adequately studied and documented. Bronchiectasis appears to be the most common cause. The incidence of histiocytosis, sarcoidosis, collagen disease, idiophatic interstitial fibrosis, etc., appears to be very rare but detailed histolotical studies are needed to confirm this clinical impression. In these conditions the abnormal lung patterns are restricted to the mid and and lower zones of the lung. The differentiation of non caseating diffuse tuberculosis is fortunately therefore enhanced by the predominance or equal involvement of the upper lobe(s) and in the majority of cases the presence of other typical lesions.

ACKNOWLEDGEMENTS

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2. *Cockshot P.: Personal Communication 1981.*

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An Unusual Foreignbody (Screw) in the Pharynx

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INTRODUCTION

FOREIGN BODIES in the pharynx are rare. We are reporting an unusual case of foreign body (screw) in the pharynx in a child.

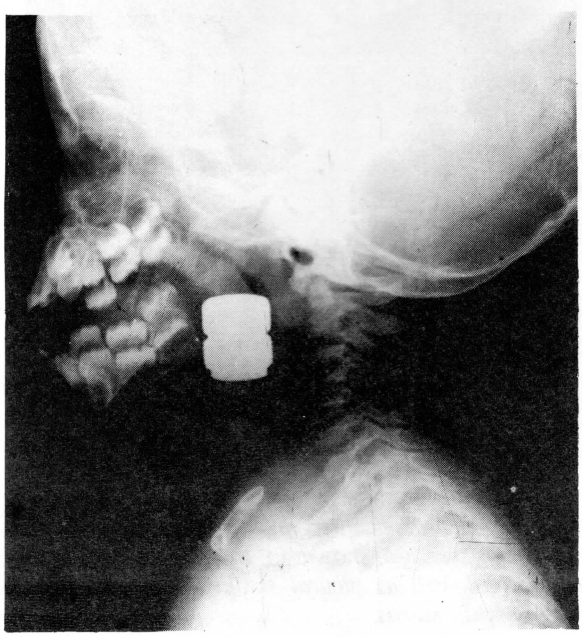
CASE REPORT

Master Forward Bwalya a sixteen months old Zambian male child was brought to the Casualty on 4th June, 1981, with a history of swallowing a metallic screw.

The child was restless with moderate stridor and was spitting out blood. The X-ray of the soft tissue of neck, lateral view (fig. 1) showed the screw in the pharynx from the level of upper border of the C–1 vertebra to the level of interspace between C–4 and C–5 vertebrae.

The child was immediately taken to the Casualty Operation Theatre and the screw was removed by using a Mcintosh laryngoscope and Mcgill's forceps. The child was symptom free after removal and was discharged from the ward on the following day.

FIG. I



St. neck lateral view.

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