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Lipoid pneumonia with Cryptococcus neoformans colonisation

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Lipoid pneumonia, caused by exogenous lipoid depositions, can occur secondary to aspiration of vegetable, animal, or mineral oils into the lungs. In the case we describe, lipoid pneumonia was caused by chronic use of Vicks Vaporub inside and around the nostrils. Multiple sputum studies also revealed *Cryptococcus neoformans* without any evidence of tissue invasion.

Case report

A white farmer, aged 61 years, presented with chills, fever, night sweats, and malaise for eight weeks. He denied significant cough, sputum, chest pain, or dyspnoea. History revealed hypertension for 10 years and sinus trouble for five years for which he habitually applied Vicks Vaporub in and around both nostrils. He was a non-smoker with no history of alcohol abuse, unconsciousness, dysphagia, or foreign travel.

Physical examination revealed a temperature of 38·5°C, blood pressure 150/80, mild tenderness over maxillary sinuses, and a few crackles over the right infrascapular area.

Chest radiograph showed nodular densities of varying sizes over right mid and lower zones, posteriorly (fig 1).

Urinalysis and routine laboratory tests were normal except for a leucocytosis of 12 300/cu mm and sedimentation rate of 28. Serum protein electrophoresis and immunoelectrophoresis were normal. Antinuclear titre and rheumatoid factor were non-reactive. Purified protein derivative and sputum studies were negative for tuberculosis and malignant cytology, but positive on culture for *Cryptococcus neoformans*.

Intestinal and sinus radiography, liver scan, and liver biopsy were negative. Spirometry was normal. Arterial blood gases revealed pH 7·49, P_{CO_2} 34 mmHg, and P_{O_2} 70 mmHg.

Fibreoptic bronchoscopy revealed mildly inflamed mucosa of the right lower lobe segments. Transbronchial biopsy under fluoroscopy from these segments showed moderate fibrosis of interstitium and infiltration with lipoid-laden macrophages, lymphocytes, and neutrophils

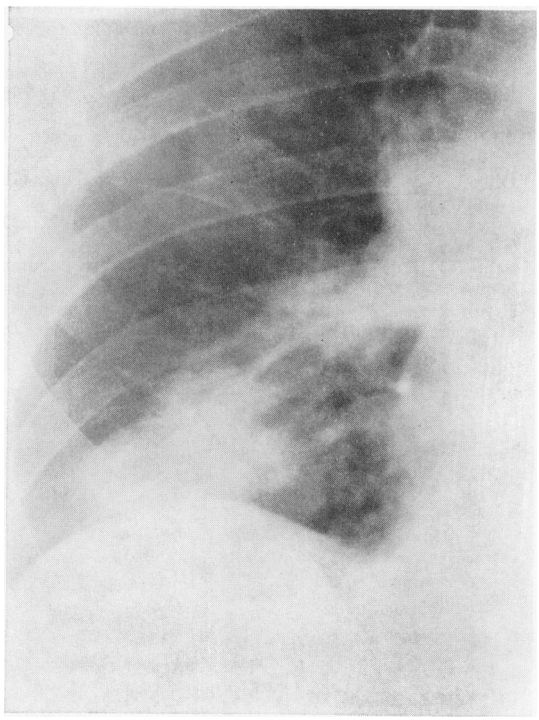

Fig 1 *Close-up of admission chest radiograph showing nodular densities over right middle and lower zones.*

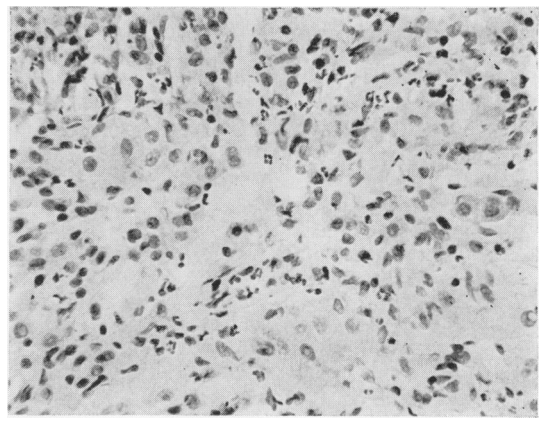

Fig 2 *Transbronchial lung biopsy from the posterior segment of the right lower lobe showing chronic non-specific inflammation with focal interstitial fibrosis and moderate infiltrate of lipoid-laden macrophages as well as lymphocyte and polymorphonuclear neutrophils. H and E × 400.*

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(fig 2). No tumour cells were seen. The mucicarmine stain was negative for *Cryptococcus neoformans*. Washings and brushings were negative for fungus or acid-fast bacillus.

Cerebrospinal fluid was negative for tubercle bacilli and fungus, including India ink preparation. CSF and serum were negative for cryptococcal antigen.

The patient continued to have a fever of 38° to 39°C with chills for the first six days in the hospital and then was asymptomatic. He did not use any Vicks Vaporub in the hospital and a chest radiograph repeated after eight weeks showed complete clearance of the densities. No medications were given except hydrochlorothiazide.

Discussion

The diagnosis of lipoid pneumonia in this case was made on the basis of a history of nasal instillation of Vicks Vaporub for five years, a histopathological picture consistent with lipoid pneumonia, nodular densities over the dependent areas of the right lung and complete recovery when the offending agent was stopped.

Fever, chills, and weight loss, though an uncommon presentation of lipoid pneumonia, have been reported. The exact cause of fever is not known but may possibly be attributed to a foreign body reaction. Cough and pleuritic chest pains were the most common symptoms in other studies but were conspicuously absent here.[1]

Lipoid pneumonia usually occurs in early childhood or the older age group. In older adults who are debilitated with a poor gag reflex or associated oesophageal abnormality, it is usually secondary to the ingestion of mineral oil or a laxative. Borrie and Gwynne[2] have reported lipoid pneumonia secondary to nasal medications containing liquid paraffin. Lipoid pneumonia has also been reported secondary to smoking tobacco containing "black fat,"[3] cleaning of aeroplane undercarriages with oil mist,[4] inhalation of air from oil lubricated air compressors,[5] and inhalation of burning animal fat.[6] We have not found a reported case of lipoid pneumonia secondary to Vicks Vaporub.

The basic constituents of Vicks Vaporub are camphor, menthol, thymol, spirit of turpentine, oil of eucalyptus, cedar leaf, and nutmeg oil, all of which are known to be toxic to human tissue either by inhalation or ingestion.

Animal oil under the influence of pulmonary lipases produces intense inflammatory response. Mineral oil's reaction seems to be less acute but produces a chronic fibrotic reaction and seems to be dose-dependent. Most vegetable oils are innocuous when aspirated but some, such as castor oil, croton oil, and the constituents of Vicks Vaporub can produce lipoid pneumonia. This low-grade pathogenicity of vegetable oils may also explain why our patient used Vicks Vaporub for five years before symptoms developed. Exogenous lipoid pneumonia stabilises after cessation of the use of the offending agents and sometimes improves spontaneously, though death from cor pulmonale has been reported.[7]

Even though superimposed bacterial infection and carcinoma have been reported,[8] fungal colonisation with *Cryptococcus neoformans* has not been recorded in the literature. Colonisation also resolved after the improvement in the patient's clinical and radiological status.

References

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