

Case Reports

PSITTACOSIS IN CAPE TOWN

M. HORWITZ, M.D., M.R.C.P. (LOND.), *Department of Medicine, University of Cape Town*; A. B. ROSENBERG, B.Sc. (STELLENBOSCH), M.B., CH.B. (CAPE TOWN), *Senior Medical Officer, Somerset Hospital*; AND H. R. ACKERMANN, M.B., CH.B. (CAPE TOWN), T.D.D. (WALES), *Medical Superintendent, City Hospital, Cape Town*

These 2 case reports are presented as a reminder of a cause of pneumonia for which one should always be on the alert.¹ A case of psittacosis in South Africa was previously described in a 33-year-old White male in Johannesburg in 1957.²

CASE REPORTS

Case 1

Symptoms. When the patient was seen in the Casualty Department, Somerset Hospital, he was acutely dyspnoeic and tachypnoeic and unable to provide a detailed history. The main complaint was severe chest pain and ill-health for 3 days. Clerical data on the outpatient card contained the information that he was a 44-year-old Bantu, employed in the Cape Town docks in the Veterinary Quarantine Station. He was admitted to King Edward Ward on 28 July 1964.

Signs. The temperature was 98.6°F. The main abnormal physical signs were severe dyspnoea and tachypnoea, peripheral and central cyanosis, and coarse crepitations scattered throughout both lung fields, especially at the bases. Pulse rate was 120/minute. Blood pressure was 110/80 mm.Hg. There was slight epigastric tenderness. Hb. was 13.5 G/100 ml.; WBC 10,000/cu.mm.

X-ray examination of the chest showed gross and striking abnormalities (Fig. 1) and the report read: 'There is extensive bilateral perihilar opacification which on the right side is limited inferiorly by the lesser interlobar fissure, and on the left side extends into the bases. On the right side below the fissure there are a number of irregular areas of patchy opacification. The lesions are ill-defined and have an infiltrative edge but do not extend into the lung apices. The cardiac shadow is ill-defined on its right border, but there does not appear to be cardiomegaly. The pulmonary vascular markings are normal in appearance. There is no pleural effusion.'

Progress. Psittacosis was suspected on account of the patient's occupation. Rapid reference to available medical literature indicated that the X-ray findings were compatible with one of the types of appearance described in psittacosis.³

Severe dyspnoea, tachypnoea, cyanosis, delirium or stupor were all noted to be poor prognostic signs,⁴ and intravenous therapy with Terramycin was started. However, about 20 hours after admission, the blood pressure started to fall, and the patient became delirious and developed slight neck stiffness. The cerebrospinal fluid was clear. He was given continuous intranasal oxygen with some improvement in cyanosis but acute dyspnoea and tachypnoea persisted. The blood pressure failed to remain elevated after administration of a pressor drug, and death occurred 26 hours after admission. Interested medical personnel in the city were notified of the suspected diagnosis.

Autopsy findings. There was moderate tracheitis with excessive mucus production. There was no pleural effusion, but there was marked pleural thickening in the form of white plaques involving the left posterior and diaphragmatic areas. Both lungs were large and oedematous and moderately anthracotic. There was oedema and consolidation of a lobar type involving largely the left lower lobe and right middle and lower lobes. The consolidation appeared to spread out in a fan-like fashion from the hilum of each lung.

Histologically, no pleural exudate was demonstrated in the sections. The lungs showed marked congestion. The consolidated areas were fairly well demarcated from the aerated parts and were formed by a marked exudate of protein-rich oedematous fluid and some fibrin. There was a moderate cellular infiltrate of histiocytes and scanty polymorphs. Some histiocytes contained large intracytoplasmic inclusions, approximately 2-4 μ in diameter, resembling those of psittacosis, and more clearly seen in the Giemsa-stained sections. Some of the bronchioles sectioned contained a little histiocytic exudate, but many were free of any inflammation. There was a moderate perivascular and peribronchiolar deposit of carbon with some foci of asbestosis.

The liver was slightly enlarged with patchy fatty change and some small focal areas of centrilobular necrosis.

The spleen was enlarged, very soft, with a reactive reddish-grey cut surface. It was moderately congested, with small follicles and sinuses filled with histiocytic cells.

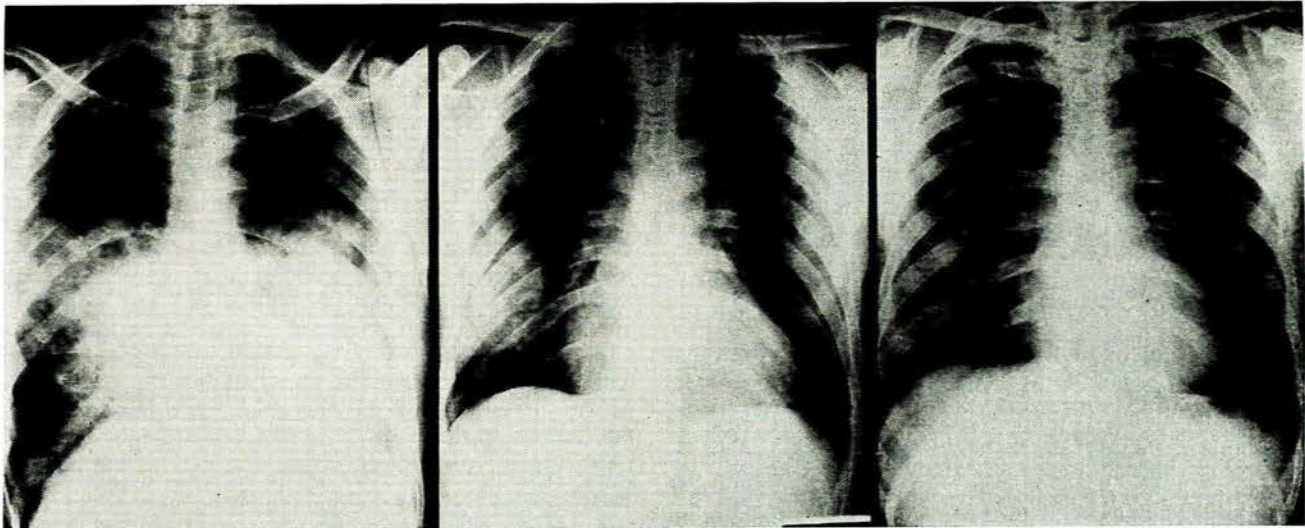


Fig. 1

Fig. 2

Fig. 3

Fig. 1. Extensive perihilar opacities extending fan-like towards the periphery are shown (case 1). Fig. 2. Well-defined opacity situated peripherally in right lower midzone (case 2 on admission). Fig. 3. Opacity practically disappeared from right midzone (case 2 after 4 days).

The autopsy findings were regarded as consistent with psittacosis.

Case 2

A 33-year-old man, a Coloured labourer in the Quarantine Station in the docks, was admitted to City Hospital for Infectious Diseases, Cape Town, on 31 July 1964.

Symptoms. He became ill 4 days before admission with pain in his right chest, generalized aches and pains, moderate cough productive of muco-purulent, occasionally rusty, sputum, headache, feverishness, constipation, nausea and vomiting. There was no backache. He stayed at home until the day of admission when he decided to go to work and report ill to obtain medical aid. He was seen by the District Surgeon who made a presumptive diagnosis of psittacosis and admitted him to the City Hospital.

He was a well-built man, not unduly distressed. Temperature was 100.8°F, pulse rate was 108/minute, and respiration 26/minute. Chest examination revealed dullness in the midzone of the right lung, especially posteriorly, with increased vocal fremitus and a few fine crepitations. The spleen was not palpable. Other systems were clinically normal.

Investigations. Chest X-ray photographs showed a well-defined opacity situated peripherally in the right lung in the lower midzone (Fig. 2). Other findings were: Hb. 14.5 G/100 ml.; WBC 12,000/cu.mm., with 60% neutrophils, 28% lymphocytes and 10% monocytes. Urine was normal. ESR was 16 mm. Westergren in 1 hour. Mantoux was positive. Sputum contained a mixed growth of salivary organisms. No acid-fast bacilli were seen.

1 G of oxytetracycline was administered 6-hourly. The pyrexia subsided and remained normal as from 2 August 1964. The pulse and respiration rates were normal soon after admission. He rapidly recovered. By 3 August 1964 the chest X-ray examination showed that the opacity had practically disappeared (Fig. 3). He was discharged perfectly fit on 21 August 1964.

Virological Investigations*

No virus was isolated from the tissues of case 1 taken at autopsy, or from the throat swab, sputum or blood of case 2.

A virus of the psittacosis group was, however, cultured from the tissues of all 6 parrots investigated.

DISCUSSION

Diagnosis

Attempts at isolating psittacosis virus from the tissues of case 1 were probably negated by the administration of intravenous Terramycin, while the failure to isolate the virus from case 2 may have been due to the fact that the specimens were obtained at too early a stage of the disease.

Although psittacosis virus was not isolated from these 2 patients they are believed to be cases of psittacosis, since (i) they were in contact with infected parrots, at the same place of work, (ii) both became ill at approximately the same time in the last week of July 1964, (iii) psittacosis virus was cultured from the parrots, and (iv) large intracytoplasmic inclusions were noted histologically in the lungs of case 1, the fatal case.

Clinical Features

These are extremely variable, ranging from a transient influenza-like infection to a serious pneumonic disease. The mortality rate ranges from 5 to 40%.^{3,4} There are no pathognomonic respiratory symptoms and signs, and, as in most non-bacterial pneumonias, physical signs tend to be less prominent than symptoms and X-ray findings would suggest. Splenomegaly, present in 10-70% of cases in

different series, may be a very helpful clue in the clinical diagnosis of a case of pneumonia.

Radiological Appearances

The pulmonary opacities may be of many sorts; patchy, diffuse, lobar, wedge-shaped, nodular, miliary, or hilar. Case 1 had gross striking perihilar opacities, extending fan-like towards the periphery, and case 2 had a particularly well-defined rounded opacity situated peripherally. Both X-rays aroused suspicion in observers that some unusual form of pneumonia was present (Figs. 1, 2).

Epidemiology

In 1880 Ritter, a Swiss physician, reported a fatal pneumonic illness in patients who had been in contact with sick birds. Psittacosis was considered a rare and exotic disease until 1929-1930 when almost 800 cases occurred in Europe, Asia and America. This 'pandemic' was traced to a shipment of South American parrots.^{3,4} During the past 30 years, psittacosis has been reported with increasing frequency. It has been stated that at least 1,000 cases occur each year in the United States and that many more probably go unrecognized.

More than 50 species of bird may harbour the virus, parrots and parakeets being the commonest source of human psittacosis. Man is always infected by the respiratory route. Intimate and prolonged contact is not essential for transmission of the disease; a few minutes spent in an environment previously occupied by an infected bird has resulted in human infections, and the severity of the disease in man bears no apparent relationship to the closeness or duration of contact.^{3,4} There is no record of infection acquired by eating poultry.

Human-to-human transmission of psittacosis has occurred, particularly among hospital personnel. There is evidence that these 'human' strains are more virulent than native avian viruses, and the resulting infections are usually severe and often fatal. Pneumonias, without proven bacteriological causes, are commonly encountered in medical wards of city hospitals, and the question has been raised of treating all such cases with strict infectious precautions.¹ This appears particularly important in hospitals admitting patients from dockyards.

Treatment

Tetracyclines are stated to be consistently effective, and symptoms are usually alleviated in 24-48 hours after giving 2-3 G daily. It is also stated that psittacosis usually responds to penicillin if given in the dosage of more than 2 million units daily. Since these 2 antibiotics are commonly used in the treatment of pneumonia of unknown aetiology, it is possible that there have been other cases of psittacosis pneumonia in Cape Town previously. Patients with pneumonias responding to common antibiotics are unlikely to have been investigated further. The virus is present in the blood during the acute phase of the disease and in the bronchial secretions for weeks, but human psittacosis is most readily diagnosed by a rising titre of complement-fixing antibody in the patient's blood.

SUMMARY

1. Two cases of pneumonia in Cape Town are presented, believed to be due to psittacosis.

2. Both were in contact with parrots from which psittacosis virus was cultured.

*The virological investigations were carried out by the Department of Bacteriology, Medical School, University of Cape Town.

3. Both patients became ill in the same week. One of them was extremely ill and died rapidly. At autopsy, histological examination of the lungs showed large intracytoplasmic inclusion bodies. The other case was much milder and rapidly recovered on therapy with oxytetracycline.

4. Psittacosis may be more common than is usually believed.

5. The point is raised of isolating all 'pneumonias of unknown aetiology' in hospital wards since human-to-human transmission of psittacosis may be very serious. This may be particularly important in hospitals admitting many dock workers.

Thanks are due to Dr. J. Smith for the report on the radiograph of case 1; to Dr. T. P. S. Mulligan for the autopsy

report on case 1; to the Department of Bacteriology, University of Cape Town, for the virological investigations; to the medical colleagues and nurses who looked after the patients; and to the Department of Clinical Photography, Groote Schuur Hospital.

We also wish to thank Dr. R. Nurok, Medical Superintendent, Somerset Hospital, and Dr. E. D. Cooper, Medical Officer of Health, Cape Town, for permission to publish.

REFERENCES

1. Bickersteth Medical Society (1964): *S. Afr. Med. J.*, **38**, 921.
2. Jackson, A. L. and Gordon, P. (1957): *Ibid.*, **31**, 964.
3. Harrison, T. R. (1962): *Principles of Internal Medicine*, 4th ed., p. 1126. New York: McGraw-Hill.
4. Beeson, P. B. and McDermott, W. (1963): *Textbook of Medicine*, 11th ed., p. 26. Philadelphia: W. B. Saunders.