Proceeding S.Z.P.G.M.I vol: 5 (1991), pp. 65-66.

Bird Fancier's Lung

Mohammad Iqbal, Farrukh Iqbal
Department of Medicine, Shaikh Zayed Hospital, Lahore

SUMMARY

Hypersensitivity Pneumonitis (HP) or Extrinsic allergic Alveolitis (EAA) is an immunologically mediated inflammation due to the organic dusts resulting in hypersensitivity reaction at alveolar level associated with the production of precipitins. We describe a case of Bird Fancier's Lung which had typical presentation clinically and radiologically and improved remarkably by avoidance of the causative factor and systemic steroids.

A 50 year old male was admitted with a two month history of breathlessness and productive cough. Two weeks prior to his admission he developed high grade fever (103 F) with rigors. The breathlessness was progressive and made him bed bound. He was treated for chest infection with various antibiotics but without relief. He had also been treated for gouty arthritis and hyperuricaemia for the last five years and was taking allopurinol (Zyloric) and diclofenac (Voltaren). Other medications included Salbutamol (Ventolin) and moduretic.

Family history was unremarkable. He was a non smoker but was keeping about 100 pigeons and had regular exposure to them and their droppings. No allergies were noticed. On examination he had severe orthopnoea. There was mild central cyanosis. Rest of general physical examination was normal. Respiratory system revealed a rate of 35/min with accessory muscles of respiration in action. Chest expansion was bilaterally poor with impaired percussion note in both lower parts of chest. On auscultation there were bilateral fine inspiratory crackles on both bases with bilateral pleural rub more marked on the left side. Cardiovascular, abdominal and neurological examinations were normal.

Investigations included a Hb of 10.5 g/dl, WBC 15.5×10^9/l, diffenential (Neutrophils 76%, Lymphocytes 18%, Eosinophils 2%, Monocytes 4%) ESR was 120 mm in the first hour. His blood glucose was 86 mg/dl, Blood Urea Nitrogen (BUN) was 26 mg/dl, Creatinine was 2.4 mg/dl and serum uric acid was 13.4 mg/dl. Liver function tests were normal. Chest X-ray showed dense mottling with fine honey comb appearance in both lower zones more marked on the left. This was a classic example of air alveologram, a characteristic feature of allergic alveolitis.

He was too breathless to perform respiratory function tests. His arterial blood gases were as under:-

PH	7.46
PCO2	36.2 mm Hg
PO2	58.0 mm Hg
HCO3	26.2 mEq/L
TCO2	27.3
BE	3.5

Serum for avian precipitins was sent, which was positive. In view of the history and clinical examination along with chest X-ray a diagnosis of bird fancier lung was made he was started on oral steroids. He made a remarkable recovery within a day. His fever subsided and blood gases improved and he was up and about. The patient was discharged home with a follow up in the outpatient clinic. His steroids were tailed off and ESR came down to 20 mm in Ist hour. However, his chest X-ray cleared after six weeks.

DISCUSSION

Inhalation of a variety of organic dusts can cause hypersensitivity pneumonitis (I) although many people are exposed to such dusts but only few develop overt disease. These organic dusts include animal proteins, saprophytic fungi contaminating vegetables and wood bark etc. Either the inhaled

dust itself causes respiratory disorder or a microbial contaminant may be carried along with it passively and cause disease. In bird fancier's lung, pigeons, parakeets and budgies droppings (avian proteins) are involved. Sensitization is usually insidious and the patient is usually not aware of it. Almost all people who handle birds develop serum-precipitating antibodies but this response is not associated with disease in most of the cases[2]. The onset of respiratory symptoms may not occur at first but many appear only after an exposure pattern is well established. In acute disease the respiratory and systemic symptoms develop within 4-6 hours and consists of dyspnoea, chills, fever, cough and malaise. The symptoms nay last for 12 hours and abate spontaneously. When observed, the patient is acutely ill and dyspnoeic, inspiratory crackles can be heard predominantly in the lower lung zones. Temperature is usually high and there is leukocytosis. The chest radiograph may appear normal but shows a fine, diffuse alveolar filling pattern and visible streaks called air alveologram.

The pulmonary function tests show a restrictive pattern. Diffusing capacity for carbon monoxide is reduced and pulmonary compliance decreased. Sometimes, initially an obstructive pattern occurs which is followed by more restrictive pattern. Fatigue, weight loss and poor appetite may be significant in this disease. Some chronic patients are difficult to differentiate from interstitial pulmonary fibrosis.

Other investigations include raised ESR, precipitating antibodies (in IgM, IgA and IgG) classes in serum to antigens causing hypersensitivity. Broncho-alveolar lavage (BAL) and trans bronchial lung biopsy also help a lot. Mostly it is type I and type II response. In pigeon breeders with active lung disease it has been found that an IgG 4 subclass of an antibody may have a reaginic activity and contribute to the immediate airway reaction[3].

As regards treatment simple avoidance of the environmental source is sufficient. This is not always easy. If respiratory symptoms are too troublesome with abnormal pulmonary function tests trial of corticosteroids can be given.

Our patient responded very well to the steroid treatment and was advised to avoid exposure to the pigeons and since then he is doing well. Keeping pigeons is a common hobby in Pakistan. As for as we know, no such case report has been published. This case is reported so that the physicians should be aware of this condition. It also highlights the importance of history taking.

REFERENCES

1. **McCombs RP**. Disease due to immuologic reactions in the lungs. *N Lngl J Med 1973;* **286**: 1186.
2. **Patterson R, Wang JLF, Fink JN, et al.** IgA and IgG antibody activities of serum and broncho-alveoler fluid from symptomatic and a symptomatic pigeon breeders. *Am Rev Respir Dis 1979;* **120**: 1113.
3. **Calvanico NJ, Ambedgaonkar SP, Schueter DP, et al.** immunoglobulin levels in bronchoalveolar lavage fluid from pigeon breeders. *J Lan Clin Med 1980;* **98**: 129.

The Authors:

Mohammad Iqbal,
Assistant Professor
Department of Pulmonology,
Shaikh Zayed Hospital,
Lahore.

Farrukh Iqbal
Assistant Professor,
Department of Medicine,
Shaikh Zayed Hospital,
Lahore.

Address for Correspondence:

Mohammad Iqbal,
Assistant Professor
Department of Pulmonology,
Shaikh Zayed Hospital,
Lahore.