MEDICAL GRAND ROUNDS
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THE CHEMICAL STIMULUS TO EOSINOPHILES

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The patient was a 25 year old white female brought to the hospital by ambulance with a history of having discharged a 22 calibre revolver against her left chest.

She had no history of significant previous illness, specifically denying asthma, allergies, dermatological disorders, gastrointestinal complaints, intestinal parasites. Social and psychiatric history are not germane to the problem.

Physical examination: There was a powder stained small wound of entry in the 5th ant. i.c.s. at about the anterior axillary line on the left side. A rather ragged wound of exit lay in the 8th i.c.s. at about the posterior axillary line. Breathing was obviously painful, and associated with splinting. Diaphragmatic dullness appeared to be slightly higher on the left than on the right and B.S. on the left side were audible but reduced. There was no shift of the trachea or of cardiac dullness.

Findings with respect to heart, abdomen and extremities were all within normal limits.

Shock was not evident, the blood pressure being 120/80 and pulse 88.

She was seen by this examiner 3 days later when she presented normal vital signs. Physical examination of the chest was as at the time of admission. In general she was quite well-developed, moderately well-nourished and not in any marked pain.

No cyanosis was evident at this time. RBC , 4.5 million, Hgb. 41, WBC 8,900 with 55 segs, 2 stabs, 35 lymphs and 8 eos.

Chest film revealed a small hemo or hydro-pneumothorax on the left lung. The lung fields were entirely normal otherwise, but the left diaphragmatic leaf was poorly visualized on account of fluid. The heart was normal in shape and size and the mediastinal structures were in normal midline position. Special films for rib detail revealed no fractures and there was no metallic density visible in the left mid or lower chest.

A chest tap produced 250 ml. of sero-sanguineous fluid which did not clot. Sp.Gr. 1018; protein not available, 1.2 million RBC, 2,000 WBC., with a differential of 65 eosinophiles and 35 lymphs. Three stools were ordered and reported as negative for ova and parasites. All other examination and study for disease associated with eosinophiles were entirely negative.

Five days later the peripheral eosinophilia had disappeared, the lung was fully expanded and the remaining fluid had absorbed. She was discharged as recovered.

CASE 2

A white female of 54 with metastatic carcinoma arising from the breast had bilateral sero-sanguineous pleural effusion. Eosinophiles constituted 40% of the white cells present.

CASE 3

A 33 year old white male had what seemed to be a succession of pulmonary emboli with shadows indicating infarction or pseudo-infarction. Sero-sanguineous fluid from one side contained 25% eosinophiles.

CASE 4

A 22 year old white male had a large pleural effusion marked by abrupt onset and high fever. Tuberculin test produced a 30 mm. reaction and he was known to have had intimate contact with various family members with established tuberculosis. A sero-sanguineous effusion containing considerable fibrin revealed 50 eosinophiles, the remaining cells being lymphs.

CASE 5

A 40 year old white male had repeated spontaneous pneumothorax. The onset of the present had occurred 3-4 days before a tap which produced lightly blood-stained fluid containing 90% eosinophiles.

Exhaustive study in all of these additional cases failed to produce evidence of other disease which might account for eosinophilia. None subsequently gave evidence of collagen disease or developed any manifestation of allergy. In no case could parasites be demonstrated in the stools.