at first available, and he was treated with magnesium sulphate and potassium permanganate bowel wash-outs. Later this patient had the advantage of 32 gr. (2.13 g.) emetine in 6 courses, several courses of ipecacuanha, 2 courses of santalin (30 tablets), and various bowel wash-outs. Sulphaguanidine was also tried, and gave a transient fall in the number of motions. He resisted all treatment, finally receiving practically no benefit from emetine administration. Before operation his condition was wretched; weight 7½ st. (47.6 kg.). He had a wasted appearance, could get no rest because of pain, tenesmus, and very frequent motions, and his appetite had failed. He begged for operative treatment. Abdominal examination revealed diffuse tenderness and thickening of the colon, but no tumour formation. Proctoscopic examination showed very active ulceration of the rectum of amoebic type. Stool tests repeatedly showed *E. histolytica*, red blood cells, and pus cells.

Operation, Aug. 8, 1944.—Spinal procaine 150 mg. Morphine ¼ gr. (16 mg.). A small transverse skin-crease incision was made in the right iliac fossa and the muscles were split. The caecum was thickened, indurated, and bound down to the right iliac fossa by adhesions. The appendix was long, thickened, congested, and indurated, and was found in the ileo-caecal angle. No ulceration of the mucosa was seen. To mobilize the appendix most of the meso-appendix was clamped and tied, leaving the arterial branch at the base; the appendix was then brought out of the wound and the caecum sutured with fine silk through the peritoneum. The peritoneum was closed with catgut, the muscles with catgut, and the skin with silk-worm-gut. Fine transfusion tubing was passed into the appendix to the caecum at a point 1 in. (2.5 cm.) from the abdominal wall, to which the tube was then anchored with a stitch. Dressings of soft paraffin and tinct. benzoini co. were applied.

On the first post-operative day yatren wash-outs, 2½%, preceded by saline 1 pint (568 c.cm.); five daily wash-outs with yatren solution were given, followed for a time with copper sulphate 1/5000 daily. Emetine was available on the fourth post-operative day, and 5 gr. (0.32 g.) was followed by a course of emetine bismuth iodide 15 gr. (1 g.). The wound healed by first intention, sutures being removed on the seventh day. The stoma was excellent, with a mucocutaneous junction. There was no untoward reaction.

Progress.—By the fourth post-operative day the patient had one motion daily, firm and almost clear of blood. Appetite improved right from the start and the pain disappeared. In four months he had put on over 3 st. (19 kg.) in weight. Proctoscopy in Feb., 1945, revealed a healed rectal mucosa. Now, after twelve months, he is perfectly healthy, and has had no relapse; he has gained nearly 4 st. (25.4 kg.) in weight and works as a voluntary orderly. All stool tests have been negative—the last a series of six done in Aug., 1945. The appendicostomy stoma causes no particular inconvenience.

STREPTOCOCCAL MILIARY INFILTRATION OF THE LUNGS

WITH DESCRIPTION OF A CASE

BY

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The existence of an infiltration of lung tissue, giving rise to radiological shadows almost identical with those of pulmonary tuberculosis but not apparently connected with the tubercle bacillus, is well known (Scadding, 1937, and others). In a consideration of the aetiology of subacute pulmonary infections (Davidson and Ellman, 1941) attention was drawn to the fact that many pulmonary lesions are now brought to light which, before the days of adequate x-ray examination, passed undetected, and, while in most of these the nature of the disease is not in doubt, in many the differential diagnosis is still a matter of considerable difficulty. In other words, radiological diagnosis, no less than physical diagnosis, has its limitations; nor does it always provide a short cut to that understanding of the morbid anatomy of disease which can be reached only by a synthesis of all the available data.

Since the publication of the above-mentioned paper I have encountered a number of acute and subacute non-tuberculous pulmonary infections closely simulating, in their clinical and radiological appearances, pulmonary tuberculosis, but showing signs of healing by natural resolution within a relatively short period. In some such cases the streptococcus has undoubtedly been a causal organism. A case of an apparent acute streptococcal miliary infiltration of the lungs is now described.

History of Case

Miss A., aged 20, was admitted, almost moribund, as a case of acute leukaemia to Leatherhead Emergency Hospital on Aug. 5, 1945. She presented a picture of gross anaemia and a virulent infection. She gave a history of increasing fatigue, weakness, and pallor over the past two to three months. Her periods, previously irregular but normal, had during that time been scanty. Immediately before admission, in addition to aggravation of these symptoms, she had noticed acute dyspnoea on exertion, attacks of giddiness and palpitation, and a slight cough on the morning of admission. There was no history of any obvious loss of weight. During the spring of 1945 a slight pyrexial attack was accompanied by a sore throat and a cough with a little yellowish sputum. She also had a slight haemoptysis, after which the sputum was blood-stained. This attack lasted two weeks, and was followed by a similar attack, but without the haemoptysis, a few months later. There was otherwise no noteworthy previous history. The family history was likewise negative, and her occupation was of no significance so far as her illness was concerned. Seven weeks before the onset of this illness she had attended a mass radiography clinic, when her lung fields were reported as clear.

On admission she was grossly anaemic, too weak to cough, and very "bubbly"; her respirations were shallow and rapid (36); the

FIG. 1.—Skiagram of chest from a case of acute streptococcal miliary infiltration of the lungs.

pulse was thin, rapid (120), and irregular; temperature 101°. Examination of the lungs showed scattered crepitations throughout both lung fields and broncho-vesicular breath sounds. The heart was not enlarged clinically; the rhythm was regular; the heart sounds were very faint; there were no significant murmurs; the blood pressure was 130/60. There was no lymphadenopathy or splenomegaly. Examination of the fundi showed them to be normal, but a large haemorrhage was seen in the right retina. A blood count showed a haemoglobin of 23%; the white cells numbered 26,000, mainly polymorphonuclear in type; otherwise there was nothing significant in the differential count. X-ray examination of the chest showed diffuse miliary infiltration of all zones of both lungs, but the apices were singularly clear (Fig. 1).

The next day her pulse was more regular and the respirations not quite so shallow. The physical signs in the chest were unchanged, and the temperature was still 101°. Following half a pint (284 c.cm.) of blood, given very slowly, her haemoglobin rose to 30%; the white cells numbered 23,000 (polymorphs 90%). She was given large doses of iron and ascorbic acid, and ¾ pint (426 c.cm.) of concentrated blood again that night. On Aug. 7 the physical signs in her chest were

less marked; the respirations were still raised (34), but they were not quite so shallow. The haemoglobin was now 36%. Repeated examination of the sputum (laryngeal mirror) showed an almost pure growth of haemolytic streptococci, but no tubercle bacilli.

Penicillin, 20,000 units three-hourly, was started soon after admission, a total of 960,000 units being given in six days. Two days after beginning the penicillin (Aug. 9) her temperature had dropped to normal, the respirations were 28, and the haemoglobin had risen to 40%; the retinal haemorrhage was still visible. A day later her respirations had also dropped to normal; the physical signs in the lungs were markedly diminished and the adventitious sounds were confined to the bases. Her haemoglobin continued to rise steadily.

Serial x-ray examination of the chest showed progressive resolution, and within ten days the miliary infiltration had completely

FIG. 2.—Skiagram of same case, showing complete resolution.

resolved (Fig. 2). The retinal haemorrhage had also resolved and the blood count had become entirely normal. A gastric residuum at this time showed that the patient was achlorhydric.

Discussion

The role of the streptococcus in pulmonary infections of an acute pneumonic or bronchopneumonic character, as well as varied subacute pulmonary infiltrations of similar aetiology, is significant, although in some cases debatable, and there is an increasing literature on this subject. In the case I have recorded the sputum was collected on a laryngeal mirror and precautions were taken to avoid contamination by mouth organisms. A heavy growth of haemolytic streptococci was repeatedly found and, bearing in mind the severe toxæmia and the clinical and radiological lung findings, there was undoubtedly a haematogenous lung infection of streptococcal origin. Admittedly, many bacteriological examinations of sputum will show a mixed bacterial flora, including streptococci; but in this case the sputum, apparently uncontaminated, contained on each occasion an almost pure growth of haemolytic streptococci.

Twining (1938), among others, records that streptococcal pulmonary infections may closely simulate acute or chronic pulmonary tuberculosis. Miliary infiltrations of the lung, apart from those of a tuberculous nature, may occur as a miliary carcinomatosis, in silicosis, in bronchiolitis (particularly following influenza and measles), in Hodgkin's disease as a lymphadenomatosis, in leukaemias, in certain pulmonary mycoses, in bilharziasis, in Boeck's sarcoidosis, in miliary amyloidosis of

the lung, in miliary stasis of the lung with mitral stenosis, etc. Twining also refers to a case of bronchiolitis obliterans described even at necropsy as a miliary tuberculosis until histological sections finally disproved this. The case was reported by Assmann, and was an end-result of influenzal bronchiolitis.

I use the term "miliary" in this case because the radiological appearances of the lung simulated a miliary tuberculosis. Gloyne, in a personal communication, informs me that he has seen, at necropsy, several cases of an acute streptococcal disseminated bronchopneumonia, in some of which "silicosis" had been suspected; and in the present case some would perhaps have used the term "disseminated streptococcal bronchopneumonia." My own feeling, however, is that the miliary nature of the radiological appearance of the lungs more than justifies the description "streptococcal miliary infiltration of the lungs." It is of interest to note that in the case here reported the apices were not involved in the skiagram.

It is presumed that this patient had had a simple achlorhydric anaemia for some months and that an added streptococcal infection at this stage had rendered her a victim of streptococcal septicaemia with a pulmonary localization of a miliary nature. I have not been able to find a similar case in the literature.

Summary

A case of simple achlorhydric anaemia complicated by the sudden onset of acute streptococcal septicaemia with miliary pulmonary localization is presented. A dramatic response to penicillin therapy (aided by transfusions and iron therapy for the anaemia) resulted in complete resolution of the lung lesion.

I am indebted to Dr. D. Nabarro for the pathological investigation.

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HEREDITARY CLUBBING OF DIGITS IN TWO FAMILIES

BY

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The whole question of clubbing of the digits was reviewed in detail in 1942 by Mendlowitz, and he included a discussion of hereditary clubbing in which different fingers or toes may be involved in varying degree. Some fingers or toes may be spared, but thumbs are nearly always included. Usually the patient cannot remember ever being free from clubbing, but the condition may become more pronounced in middle life. Horsfall (1936) described three families with a total of 20 cases, the abnormality occurring in four generations in one family. In 18 of his 20 cases all the digits were clubbed in the affected members, but in the other 2 cases (belonging to one family with 10 affected members) only a minority of digits were involved.

Personal Cases

In the first family I encountered (see family tree, Fig. 1), all the affected persons had bilateral symmetrical clubbing involving the first three fingers (Fig. 2) and toes. The fourth and fifth digits were quite normal. Clubbing varied in degree from member to member, and became more pronounced with increasing age. All the affected members, and many others, had webbing of the second and third toes.

In the second family (Figs. 3 and 4) the defect was in the little finger only, and was asymmetrical. Thus in the mother the left little finger was much more affected than the right, whereas in the three affected children the right little finger was chiefly involved. Toes were normal in this family, and webbing was absent. The mother stated that neither her siblings nor her parents were affected.

Skiagrams showed shortening of the phalanges of the affected digits in both families. There was no disease associated with the clubbing in these families.