regarded as liability to addiction. The same could be said of insulin or cough mixtures." In my patient there was little sign of "craving" when suddenly deprived of benzedrine in hospital in March, 1944. He says he did not miss it, and for five days in hospital before I put him on to continuous narcosis he took no benzedrine and showed no change in symptoms apart from some restlessness and sleeplessness. He was able to carry on in the N.F.S. for some years with large doses of benzedrine, and would almost certainly have broken down without it. Like a diabetic, he was efficient with his drug and inefficient without it. There were no serious physical changes as a result of its long use. Some cases of idiosyncrasy and collapse after the use of even small doses of benzedrine have been described in the literature, but they are rare. Bloomberg (1940), on the other hand, recorded his studies of three patients with narcolepsy who had been taking at least 70 mg. of amphetamine every day—for two years and eight months in two cases and for one year and eight months in another. In spite of the massive doses over a long period no significant abnormality was found in exhaustive regular tests: there was no rise in the basal metabolic rate, no rise in blood pressure, no evidence of organic damage to organs or blood, etc., and no evidence of addiction or habit-formation was found. We must conclude, therefore, that there is no evidence of physiological damage from benzedrine even in prolonged and massive dosage.

Summary

A case is reported of a patient taking large doses of benzedrine (amphetamine) sulphate for over four years, the daily consumption being from twenty-five to thirty 5-mg. tablets for many months periodically.

The only apparent withdrawal symptoms were increased restlessness and sleeplessness: There were no apparent physical ill effects. The blood count was normal. After stopping the benzedrine the patient had a marked hunger, which confirms the fact that benzedrine reduces the appetite.

Although the use of benzedrine was abruptly stopped when the patient entered hospital, he made no request for it.

Sleeplessness induced by benzedrine was well compensated by barbitone.

This paper discusses the question of "benzedrine addiction" and notes the clinical experience that certain types of psychopath can well tolerate and benefit by large doses of benzedrine.

I wish to thank Dr. L. Minski, medical superintendent of Sutton Emergency Hospital, for permission to publish this case, and to Drs. Slater, Sargent, and Hill for their help and advice.

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A circular from the Ministry of Health states that a substantial extension of mass radiography will not be practicable until normal production of the highly specialized apparatus required becomes possible and reduced demands on medical man-power release the skilled staff essential to the proper use of the apparatus. In view, however, of the general desire for an extension of mass radiography as soon as conditions permit, the Minister reminds tuberculosis authorities (other than the few who already have mass radiography units in operation) that the M.R.C. Committee on Tuberculosis in Wartime in its report issued in September, 1942, advised that a high standard of quality of miniature radiography is necessary for correct interpretation and that the use of compromise apparatus is to be condemned. Experience has since confirmed the soundness of this advice. The Minister suggests, therefore, that, when the present difficulties begin to relax, authorities wishing to undertake mass radiography should first seek the advice of his expert consultants, who will give every help and guidance.

ERYTHEMA NODOSUM AND TUBERCULOSIS

BY

WILLIAM D. GRAY, M.B., Ch.B.

Temporary Assistant Tuberculosis Officer, Durham County Council

Recent articles in the medical press have stressed the common association between erythema nodosum and tuberculosis. The rheumatic theory of its origin, however, is still too prevalent among general practitioners, and often blinds them to the necessity for referring these cases to the tuberculosis officer for investigation. Perry (1944) states that in 72% of cases among school-children erythema nodosum marks the onset of primary tuberculosis. Daniels (1944) records 5 cases out of 284 tuberculin-negative nurses who became tuberculin-positive after an attack of erythema nodosum. The Norwegian authority Ustvedt claims that the condition is practically always a tuberculous one. The following cases have been seen at a tuberculosis dispensary in the past 18 months.

Case 1.—Boy, 13 years; referred to dispensary with erythema nodosum in June, 1943. Fading nodules on both shins, but nothing heard in chest. Failed to return to dispensary for two months. Cough then present, with pain in the chest. Temperature 99.6° F. Pleural effusion found at left base. No heart murmur. Patient admitted to sanatorium, and Mantoux test found positive to 1 in 10,000 dilution. Effusion cleared normally, and chest film a year later showed calcified hilar glands. Attack of acute nephritis while in sanatorium. Now well, and working. Family history: mother's uncle had tuberculosis and brother has tuberculous cervical glands.

Case 2.—Boy, 12 years. Developed erythema nodosum in Aug., 1944, and was treated in bed by the family doctor. When allowed up, started a cold and complained of periodic attacks of pain in the right side of chest. On Oct. 12 examination revealed right pleural effusion. Tuberculin patch test gave a slightly positive human reaction and a strongly positive bovine one. Treated in bed for a further eight weeks. A chest film on Dec. 9 showed absorption of fluid and a large right root shadow, suggesting a primary complex. He now feels well and is gaining weight. Family history: nothing of tuberculosis. Mother had a cough, but chest film was negative.

Case 3.—Youth, 16 years. Developed some pain in the right side in June, 1944, followed by erythema nodosum on the left leg. Referred to dispensary; a chest film showed opacity in and above the right horizontal fissure. Developed a slight cough, and admitted to sanatorium on Jan. 2, 1945. Film then showed a large root shadow with some infiltration in the right lower zone. There were two calcified shadows in the left root. No family history of tuberculosis.

Case 4.—Girl, 10 years. Referred with a history of erythema nodosum two months before, in June, 1943, and as a contact of her elder sister with active pulmonary tuberculosis and a positive sputum. A chest film showed some shadowing in the right mid-zone. Has been kept under observation for the past 18 months; complained of pleurisy pain in June, 1944. A chest film in August suggests that bronchiectasis may be developing at the right base. Her weight and appetite are good.

Case 5.—Girl, 16 years; referred with pain in the left shoulder-blade, cough, and sputum. Was just recovering from an attack of erythema nodosum. A chest film showed a fan-shaped shadow contiguous with the left root shadow. A few crepitations were heard in the left subclavicular region. Sputum was negative for T.B. Admitted to a sanatorium for treatment. Her father has a chronic cough, but refuses to be examined.

Case 6.—Girl, 6 years; referred with erythema nodosum and history of frequent colds and "styes" on eyelids. Bluish nodules on both shins. Tuberculin patch test gave a slightly positive human reaction and a strongly positive bovine one. Left tonsillar gland slightly enlarged. A chest film showed large left root shadow, suggesting a primary complex. Two or three weeks later she developed phlyctenular conjunctivitis and corneal ulcers, followed by a recurrence of erythema nodosum. As her general condition was poor, sanatorium treatment was advised. Family history: aunt attends dispensary with old mainly calcified disease and a negative sputum. Mother's chest film negative. Father has had chest trouble for years, but refuses examination.

Case 7.—Boy, 9 years; referred on account of a cervical abscess. Swollen glands first appeared after an attack of erythema nodosum in Jan., 1944, which had been described as surface rheumatism by the family doctor. The glands subsided after rest in bed, but re-occurred in October with abscess formation. The abscess was opened by the doctor and discharged intermittently. He was admitted to a sanatorium for treatment, and the Mantoux test was found positive in 1 in 25,000 dilution. A chest film was normal. There was no

definite family history; but the child frequently visited a house where somebody had a bad cough and swollen glands in the neck.

Case 8.—Boy, 6 years; referred because a lodger in the house had been found suffering from pulmonary tuberculosis with a positive sputum. The left tonsillar gland was enlarged, and a tuberculin patch test was found positive for human and bovine tests. A chest film showed a primary complex on the left side. He had had an attack of erythema nodosum in Jan., 1944, diagnosed as rheumatism.

Case 9.—Boy, 7 years; referred with erythema nodosum, corneal ulcers, and phlyctenular conjunctivitis. Tuberculin patch test positive for both human and bovine tests. A chest film showed an enlarged right hilar gland, suggesting a primary complex. Rhonchi were heard in the right lung, and there has been loss of weight. He visits a house where one of the family died of tuberculosis.

Summary and Conclusions

Nine cases of erythema nodosum are described. Seven were of school age; two were young adults. Six are males, three are females. Three are contacts of known cases of pulmonary tuberculosis, and another has a family history of tuberculosis. Two have been visitors to a tuberculous household, and two more have relatives suffering from chronic cough who refuse to be examined. Only two gave no history of suspicious contact. All the children gave a positive tuberculin reaction. The tuberculous lesions met with were pleural effusion, pulmonary tuberculosis, phlyctenular conjunctivitis with corneal ulcers, tuberculous cervical glands, enlarged or calcified hilar glands, and a simple primary complex. No history of rheumatism was given by any of the patients.

Erythema nodosum is often associated with tuberculous lesions, and is a manifestation of tuberculous infection. All cases should be referred to the tuberculosis officer for investigation and follow-up. Every case of erythema nodosum should be regarded as a newly infected case of tuberculosis, and therefore search should be made among family and friends for the unknown source of infection. While the cases may develop nothing serious, the occurrence of ill-health and minor tuberculous lesions is frequent enough to warrant attendance at a tuberculosis dispensary in every case.

My thanks are due to Dr. D. F. Macrae, chief clinical tuberculosis officer to Durham County Council, for permission to publish these records, and to Dr. J. W. Gray, medical superintendent, Holywood Hall Sanatorium, for allowing me to see Case 3, a patient in the sanatorium.

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Medical Memoranda

A Freakish Occurrence

A patient suffering from pulmonary tuberculosis with an apical cavity was found to need the division of certain adhesions which were preventing the establishment of a satisfactory pneumothorax. Through the thoracoscope (a single-instrument pattern) multiple adhesions suitable for division were displayed. They were cut with the electrocautery in the usual way until one only remained. This was a rather fleshy posterior adhesion which it was judged would require novocain infiltration of its parietal attachment over a rib. For the uninitiated it may be explained that such injections are made through a long metal tube to the end of which a small needle, about $\frac{1}{4}$ in. long, of the Schimmelbusch type is screwed, the whole being introduced to the site of injection through the thoracoscope. While this injection was being made a sudden movement of the instrument caused the little needle to snap off. It was subsequently found that the needles of this batch were unduly brittle owing to a slight defect in the tempering. A search of all parts of the pleural cavity visible in the field of the telescope was made, but the small portion of needle, about $\frac{1}{4}$ in. long and the thickness of a hypodermic needle, could not be seen. It was believed that it had fallen into the posterior sulcus and, as the patient was in a semi-upright position, probably lay just above the diaphragm. It seemed unlikely that a small portion of sterile needle in this position would cause any trouble and, in any case, radiographic location was essential before further steps, if any, were taken. The patient was therefore returned to the ward.

The instrument was now taken to pieces, cleaned, and re-sterilized by boiling. The next case also had multiple adhesions, which were divided. Before withdrawing the instrument a final look round revealed a thin straight reddish object lying on the upper surface of the lower pulmonary lobe. It was about the size and shape of the missing part of needle, but as this line of thought seemed too fantastic to be seriously pursued the

suggestion was made that the object was possibly a blood-cast expelled from an artificial pneumothorax needle used at one of the previous refills. Satisfied with this explanation I withdrew the instrument.

The x-ray photographs taken on the following day, however, showed beyond doubt that the small piece of needle broken off in Case 1 was now in the chest of Case 2, and that it was the blood-stained portion of needle which had been viewed through the thoracoscope. How the transference occurred is not known with certainty, but it was found just possible to insert a portion of a small needle between the telescope and the outer sheath where a slight groove is produced by the electrical lead to the lamp.

The needle after breaking off must have passed directly backwards into the instrument and there become attached by a little blood clot, the fixation being aided probably by the heating effect of a cautery both upon the blood and the film of lubricant (K-Y jelly) employed. In this position it withstood the ordinary method of cleaning followed by boiling for several minutes, but was pushed out by the insertion of the telescope when the sheath of the thoracoscope was already in the thorax of the second case.

The chances of such a series of events occurring must be very small; my non-mathematical friends all speak in terms of millions.

NORMAN C. LAKE, M.S., F.R.C.S.

Congenital Discoid Internal Cartilage

Congenital abnormalities of the external cartilage in the form of either a complete or a partial disk are relatively common, and are most often encountered in adolescence, when they first cause trouble. We have been unable to find any reference to a similar condition affecting the internal cartilage, and so great an authority as Prof. McMurray remarks that he has never encountered a complete disk on the inner side. A fairly careful perusal of the literature makes us feel that the following case merits recording.

Photograph of the specimen. The black glass rod is in the tear on the superior surface of the cartilage.

This patient, a soldier aged 29, passed A1 for the Army 4½ years ago, and was admitted to Alder Hey Emergency Hospital on Oct. 20, 1944. His knee-joint had never troubled him until five weeks before admission. He was walking out of the Naafi when his left knee gave way with a loud crack, causing him to stumble. This happened several times on the way back to his billet, and finally the knee-joint became fixed in a semi-flexed position. His M.O. applied a back splint, which was kept in place for four weeks, and after its removal he was allowed up, but still found walking very painful and difficult.

On admission to Alder Hey there was a definite effusion in the knee-joint, and extension was limited by a few degrees. A bucket-handle tear of the internal cartilage was diagnosed. At the operation it was found that the upper articular surface of the tibia was completely covered by a somewhat irregular fibro-cartilaginous disk. With some difficulty this disk was completely removed. Post-operative examination of the specimen revealed that it was a complete disk with a split extending from the back end to the front of the cartilage, and in addition on its deep surface a horizontal split was discovered.

Progress was uneventful, and on discharge 10 weeks later he had a full painless range of movement with no effusion, and had reached the "heavy" class in physical training.

This case is published with the kind permission of the medical superintendent, Dr. W. E. Crosbie.

Orthopaedic Centre,
Alder Hey Hospital,
Liverpool.

F. C. DWYER, M.Ch. Orth., F.R.C.S.
C. TAYLOR, M.B., Ch.B.