On admission to Guy's Hospital the temperature was 102°, and the urine contained much pus, *B. coli* and streptococci being recovered. The blood urea was 110 mg. per cent., but the patient was passing fair quantities of urine and the vomiting was no longer severe. He was given large quantities of fluid with full doses of potassium citrate. On physical examination he was still well covered, though he stated that he had lost 6 st. in weight. His systolic blood pressure was 105 mm. Hg, but pulmonary emphysema made it impossible to discover the size of the heart. On rectal examination the prostate was found to be moderately enlarged; it felt as hard as a stone.

After a few days in hospital he had recovered sufficiently to enable an x-ray examination of the urinary tract to be undertaken. The films revealed the remarkable condition shown in Figs. 1 and 2. Practically the whole of the left loin was filled

FIG. 1.

by an enormous shadow, which roughly conformed to the shape of the kidney. The outline of the left ureter could also be seen as an opaque line extending down to the bladder. In the x-ray plate of the pelvis (Fig. 2) the prostate appeared as a dense opacity. Several mobile opacities were seen near the hilum of the left kidney, but these were shown to be calcified mesenteric glands and not stones.

A few days later the patient was cystoscoped. The bladder was small, but there was no difficulty in the passage of the instrument in spite of the calcified prostate. The left ureteric orifice could not be seen, but there was much cystitis, and the right ureteric orifice was ulcerated. After intravenous injection of methyl violet the dye did not appear from the right ureter for fourteen minutes.

The patient remained in hospital for about three weeks and made a steady recovery. The blood urea dropped from 110 mg. on admission to 50 mg. on discharge. Good amounts of urine were passed throughout, and the urine became practically clear.

This case is of interest as an example of abortive attempts at healing by a tuberculous kidney. The whole of the organ appears to have become replaced by a tuberculous pyonephrosis of enormous dimensions, and the tuberculous caseous material has become so infiltrated with lime salts as to produce a dense shadow to x rays. The ureter of the affected kidney has never been permanently occluded, as evidenced by the shadows in the x-ray film. Inquiries from the patient elicited the fact that from time to time he experienced a sensation "as if a tap had been turned off in the bladder." This was followed by the passage from the urethra of cretaceous material, which the patient described as like tooth-paste in colour and consistency. It would appear, therefore, that from time to time some of the caseous material from the kidney was passed in the urine. No tubercle bacilli

could be found, and probably the tuberculous process is completely arrested. The acute symptoms with which the patient started his recent illness were presumably due to an exacerbation of his chronic urinary infection preventing satisfactory functioning of his right kidney.

The case tends to show that, even when there is high resistance to tuberculous infection, involvement of the kidney may lead to serious consequences as the result of secondary urinary infection; it emphasizes the importance of nephrectomy whenever the condition of the other kidney warrants this step being taken. Undoubtedly a tuberculous kidney may be completely transformed into an innocuous calcareous mass, but such spontaneous cure is probably

FIG. 2.

very rare. The only example I have met of such a condition was in a woman, nearly 80 years old, who was killed in an accident. One kidney was a hard calcareous mass about two inches in length; the other kidney showed much hypertrophy.

HAEMORRHAGIC DRY BRONCHIECTASIS.

BY

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THE importance of the pathological condition here described lies in the tendency that arises, on account of the haemoptysis (which is the main symptom) to group all these cases as tuberculous. To diagnose a case as tuberculous which is not, is to do the patient a great disservice; it may completely alter his prospects in life. There is no doubt that the diagnosis of tuberculosis has generally become more accurate during the past twenty years; it has ceased to be the lumber-heap of unclassified conditions it was wont to be. In order that this improvement may continue it is opportune to lay stress on this not infrequent pitfall in diagnosis.

Haemoptysis, when no primary disease can be found outside the lungs which might have caused it, very frequently leads to the suspicion of tuberculosis; even the absence of physical signs in the lungs does not negative this. Quite large cavities are sometimes revealed by the x rays, although no definite evidence can be found clinically. We

CASE I.—After lipiodol.

do not propose to discuss the differential diagnosis of haemoptysis, but wish to point out the reality of the difficulty in this condition of dry bronchiectasis; during the last two years we have seen fifteen cases of this disease, and in most of them the presence of tuberculosis has been either diagnosed or suspected.

The general features of bronchiectasis in its ordinary form are well recognized. Textbooks lay particular stress on the typical "bronchiectatic sputum," which separates into three layers in a cylindrical vessel. The sputum is abundant, and often offensive; it is usually evacuated on change of position, especially on rising and going to bed. There are often periodic attacks of fever, and nearly always clubbing; an exception to all these points is found in apical bronchiectasis, in which condition, owing to the position of the lesions, there are no accumulated secretions, often no cough, and usually no clubbing—an indication, when considered with the dry basal type, that clubbing in this disease is certainly due to toxic absorption.

It is possible that the apical type corresponds with the dry basal type to be described, the satisfactory drainage preventing secondary infection. It is also possible that most cases of bronchiectasis, commencing after pneumonia or empyema, start as the dry type and become infected at varying periods; only rarely do necropsies reveal the dry type, for the patient with bronchiectasis dies from toxæmia after the cavities have become infected. The mere fact that there is no clubbing of the fingers is always a point in favour of the diagnosis of tuberculosis as against bronchiectasis, the apical type and the dry basal type being exceptions to this rule. Since the introduction of lipiodol injection as a means of visualizing the bronchial tree, it has been possible to demonstrate the presence of bronchiectasis in cases in which the amount of sputum is negligible, and it has been our custom to carry out this investigation in any doubtful case, the cases recorded below proving the evidence of its value.

The condition of dilatation of the bronchi without secretion was described by Reinberg¹ under the name of dry bronchiectasis; the following case is a typical example.

CASE I.

A girl, aged 20, had had pneumonia when 8 years old; since then she had been troubled by a cough, with occasional slight expectoration, and for twelve years she had been under observation at a tuberculosis dispensary.

On examination she was found to be a well-developed, healthy-looking girl. No clubbing was present. The physical signs consisted of an impaired note, and diminished breath sounds at the left base behind. The heart was not displaced, but a skiagram showed some increase of shadows in the left basal region. After lipiodol injection well-marked cylindrical and sacculated bronchiectasis was revealed.

The occurrence of haemoptysis in bronchiectasis was pointed out by Goumbault² as long ago as 1859, but in these cases the diagnosis was made on the presence of typical physical signs and sputum. After the introduction of intratracheal lipiodol injection it was established that "haemoptysis" might occur in cases of bronchiectasis which gave none of the typical signs or symptoms of the condition.

CASE II.

A woman, aged 28, had had "influenza" eight years before; since then she had been quite well for six years, when she had a haemoptysis. She continued at work during the last two months. She had had repeated haemoptyses, 15 oz. in all.

Her general condition was found to be quite good, and the physical signs in the chest were very indefinite. She was examined by three highly competent clinicians, who were unable to find definite signs which would suggest the origin of the bleeding. No clubbing was present, and the skiagram showed no abnormality. After lipiodol injection an extensive glove-finger type of bronchiectasis was demonstrated.

CASE III.

A girl, aged 14, had had pneumonia two years previously, since when there had been a cough, with occasional expectoration. Six months before the examination took place she had had a haemoptysis (3 oz.).

On admission she was found to be a well-developed healthy-looking child, with no clubbing. At the right base there was an impaired percussion note and diminished breath sounds, but no added sounds. While in hospital the patient produced no sputum. The skiagram showed no abnormality, but lipiodol injection demonstrated a well-marked bronchiectasis.

CASE IV.

A man, aged 51, six years previously had had a left empyema, for which he was treated by open drainage. Since then there had been a slight cough, with occasional sputum. No medical advice was sought until two months before admission, when he had a haemoptysis of 10 oz. When seen as an out-patient he was having another haemoptysis, which amounted to 10 oz.

CASE IV.—After lipiodol. Lateral view.

He was a short, robust man, with emphysema; the scar of an empyema drainage wound was visible at the right base behind. Around this region there was bronchial breathing, with a few added sounds. The skiagram showed no abnormality except the resected rib. After lipiodol injection the antero-posterior view showed no definite bronchiectasis, but a lateral view revealed a well-marked saccular bronchiectasis behind.

CASE V.

A man, aged 50, twenty years previously had had a subphrenic abscess and an empyema, which was drained. Since then he had worked as a stevedore. Two years ago there was a haemoptysis of 10 oz., and eighteen months later one of 5 oz. When seen in the out-patient department he was having a haemoptysis of 10 oz.

CASE V.—After lipiodol.

The patient was a robust, healthy man, with no physical signs except for a few added sounds round the empyema scar. A skiagram before lipiodol injection showed no abnormality, but after the lipiodol injection a cavity $1\frac{1}{2}$ in. by 3 in. was demonstrated behind the cardiac shadow.

CASE VI.

A girl, aged 17, had had pertussis when 4 years old, and since then bronchitis. During the last four years there had been repeated haemoptysis, and she had twice been in a sanatorium.

Her general condition was fair, but there was dullness, with added sounds at the left base. A skiagram showed the triangular shadow behind the heart, and lipiodol injection demonstrated bronchiectasis within this shadow.

CASE VII.

A woman, aged 31, had had pneumonia fourteen years previously, with an empyema which had been treated by open drainage. She had never been ill since, until one year ago there was a haemoptysis of 1 oz. Since then she had occasionally coughed up half an ounce of sputum in the day.

She was found in very good condition on examination, and had just gone through her third pregnancy. There were physical signs of fibrosis at the left base, but no clubbing. The skiagram was suggestive of fibrosis at the left base, and lipiodol demonstrated cylindrical bronchiectasis.

CASE VIII.

A woman, aged 40, had been quite well until one month before attending the out-patient department, when she had a haemoptysis of 10 oz., since when occasional expectoration had occurred.

She was a stoutish woman, with no clubbing, but there were definite signs suggesting bronchiectasis at the right base. Lipiodol injection showed a well-marked bronchiectasis.

CASE IX.

A woman, aged 28, had had influenza one year previously. During the three months before she was seen in the out-patient department there had been repeated small haemoptyses. There was a small amount of sputum.

The general condition was fair, but there was an impaired note and diminished breath sounds at the right upper lobe. The sputum examination had been repeatedly negative for tubercle bacilli. The skiagram suggested that there was a small cavity in the region affected, and lipiodol demonstrated dilated bronchi. Six months later the patient had another haemoptysis of 10 oz., but the general condition remained unaltered.

In all the above cases the sputum had been examined for tubercle bacilli, and found negative.

In 1924 Bezançon, Weil, Azanlay, and Bernard³ recorded two such cases under the heading of "Sèche hémoptorique de la dilatation des bronchies." In 1927 Reinberg reported six more cases. In 1929 Burrell and Trail⁴ briefly described

one case. The patient of Burrell and Trail and two of Reinberg's patients had been in sanatoriums, and one of ours had been similarly treated. Two others had been suspected of being tuberculous; one had attended a tuberculosis dispensary for twelve years.

The haemoptysis is usually copious, from 3 to 15 oz. Such a large haemoptysis is not commonly seen in an initial haemoptysis in pulmonary tuberculosis; in association with this there is an absence of constitutional signs. The haemorrhages are usually recurrent, and one of our own patients has worked as a domestic servant for the previous seven years, having large haemorrhages every few months, and, except for a day or two's rest on each occasion, continuing her duties. Cases ii, iv, v, vii, viii, and ix were treated in the out-patient department during the period they were having haemorrhages. The physical signs are indefinite, and it is often impossible to detect anything more than a slight degree of fibrosis, the interpretation of the signs being rendered more difficult by the fact that often there has been an empyema or pneumonia in the past on that side.

The majority of patients give a history of a previous inflammatory condition of the lung—7 of the cases we record here (3 empyemata), and 5 out of 6 of Reinberg's cases. The history of a previous acute inflammatory condition of the lung is in keeping with the usual etiology of bronchiectasis, and one might reasonably assume the progression of the disease, through a symptomless dry bronchiectasis to the later stage when the bronchiectatic dilations become infected and begin to secrete, as being the usual evolution of the disease in cases arising after pneumonia and such conditions. One of the Bezançon cases was watched from the dry to the moist stage, and doubtless now that the condition is recognized a follow-up of cases in the future will show this to be a common sequel.

The interval between the acute illness and the haemorrhage which brought the patient for medical advice is instructive, twenty, fourteen, eight, two (6 cases), and one year elapsing in some of our cases; in Reinberg's cases the longest period was twenty-eight years and the shortest five years. We feel confident that many practitioners will remember one or more cases which probably came in this category, and that the condition must be by no means uncommon.

Treatment.

In none of the cases reported in the literature, nor in our cases reported here, has any radical measure been undertaken to deal with the disease, because all the patients have been in good condition, and one has hesitated to suggest artificial pneumothorax, phrenic avulsion, or thoracoplasty, these methods being the only available ones for dealing with the disease.

One of us had a phrenic avulsion performed on a case (not in the series) in which an artificial pneumothorax could not be induced, on account of severe haemoptysis, with an apparently good result; if the haemoptysis threatens life (Devic and Berthier⁵ reported four fatal cases) one of these measures would have to be undertaken. It is, however, a point for consideration whether one should conduct some treatment to avoid infection of the cavities; this question can only be solved by watching the course of the cases now that we have recognized the condition, since it is seen that many of them escape infection for years.

The x-ray appearances of all such cases are of interest; often the condition is not distinguishable at all without the use of lipiodol. Space prevents us giving more than nine examples.

Conclusion.

Cases presenting the symptom of haemoptysis, when the physical signs are inconclusive, and where skiagrams show no definite evidence of pulmonary tuberculosis, should be subjected to the investigation of a lipiodol injection of the bronchial tree, and subsequent radiology.

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