July 30th.—Temperature 102°. Pain in chest; rub. Diagnosed by Dr. Carey Coombs as pericarditis. Abscess of left buttock opened under novocain.

August 11th.—Swinging temperature has continued. Pleuritis and pericarditis stationary. Abscess in front of right iliac bone opened; small crumbling patch of bare bone found.

September 15th.—Pus in left hip-joint, with pathological dislocation. Opened by Mr. C. F. Walters in my absence.

October 15th.—Head of femur excised; through-and-through drainage of hip-joint. Did well for a time, and temperature became normal.

November 10th.—Fever again. Tube put through hip-joint.

January 1st, 1929.—Temperature has remained up. Abscess under left iliacus muscle opened. Better for a week, then temperature 102°.

January 12th.—Pus in left knee-joint evacuated.

March 21st.—Went home, improving, temperature normal.

For a long time there was a persistent sinus over the hip-joint, but eventually this healed, and the patient is now very well.

Summary.—Boy, aged 14. Acute osteomyelitis of ilium, followed by pericarditis, pleurisy, abscess under each iliacus muscle; pus in hip-joint necessitating removal of head of femur; pus in knee-joint. Very ill six months; nine operations. Recovery.

CASE II

Hospital nurse, aged 23. Seen October 2nd, 1930. History of pain in left buttock for a week, really bad for twenty-four hours, and extending down sciatic nerve. No sleep on previous night on account of pain. Temperature 100°–101°. Vomited once. Pain now severe. On examination tenderness over the left sacro-iliac joint. No pain on "crowding" iliac crests; hip-joint moved normally. Per rectum, *nil*.

Operation, incision down to iliac bone in tender area. Outer plate of bone removed over an area one and a half inches across. Marrow looked normal, but culture showed Gram-positive staphylococci, and pus cells present in smear.

October 5th.—Pain much better. Temperature 104°–105°. Delirious at times.

October 6th.—Very ill; delirious. Pleuritic rub.

October 10th.—Purpura. Pleuritis and pneumonia in both lungs.

October 12th.—Died. No necropsy.

Summary.—Nurse, aged 23. Acute osteomyelitis of ilium; bone opened by operation. Pain relieved, but died of pyaemia and septicaemia.

DISCUSSION

In both cases there was a period of several days, three in the one and seven in the other, during which the patient had pain in the buttock, gradually getting worse. There was no known septic focus. The boy thought he had strained the back. Next came violent and persistent pain, unrelieved by opiates, with a rise of temperature, and marked deep tenderness of the dorsum ilii. If the surgeon recollects that there is such a disease as acute osteomyelitis of the ilium the diagnosis is not difficult.

The disease is apt to be severe, running a prolonged course, with numerous complications, both early and late, and considerable danger to life. Both my patients became exceedingly ill with pleuritis; one had pericarditis. The patient that recovered had abscesses in front and behind both iliac bones, and in the hip- and knee-joints. A case is, however, known to me in which a quiet abscess formed in the ilium, necessitating operation, but going on to recovery. This may correspond to the condition known as Brodie's abscess in the long bones.

TREATMENT

This presents a very difficult problem, especially on the day that the diagnosis is first made. The pain is so severe that opiates give no relief, and everybody is very anxious that something should be done to relieve tension.

Operation does certainly make the pain better, but during the next few days the patient is likely to be very ill. In my opinion the opening up of cancellous tissue by removing the outer layer of the iliac bone did indeed reduce tension and allay pain, but precipitated pyaemic symptoms by opening up the veins in the cancellous spaces to infection. There is nothing abnormal to see, so one does not know how much cortex to remove. It seems better, therefore, in an acute case, to treat it as the schoolboy was treated, by draining down to, but not into, the bone, under a local anaesthetic, in the hope (probably vain) that pus will be found under the periosteum. Mercurochrome may be given intravenously to combat septicaemia. Abscesses about the os innominatum must be expected, constantly watched for, and opened when they are found.

SUMMARY

In one published series of cases of acute osteomyelitis of various bones the ilium was involved in 5 per cent., with a mortality of 40 per cent.

Two cases are described, one fatal, one recovering after a long illness and many operations.

The diagnosis is not difficult; several days' pain in the sacro-iliac region; then violent pain, raised temperature, and deep tenderness.

The best treatment is probably to incise down to, but not into, the bone.

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THE PROPHYLAXIS OF TUBERCULOSIS OF THE LARYNX

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Tuberculosis of the larynx is so frequent and so fatal a complication of phthisis that any suggestions for preventing its occurrence, or for securing treatment in its early stages, should be given consideration even if there is no proof that they will necessarily prove effective in all cases. There is abundant proof that in its early stages this complication can be arrested, and in many cases cured, by certain definite measures. These are:

Rest in a sanatorium.

The restriction of the voice to a whisper over a period of some months.

Complete silence for a similar period.

The elimination of sepsis in the upper air passages, because it is well known that any septic process tending to produce laryngitis, whether acute or chronic, affects adversely the progress of laryngeal tuberculosis.

The prevention of cough. By this I mean unnecessary, harsh, and irritable cough producing an unnecessary strain upon the vocal cords.

As long as the pulmonary lesion is chronic it has generally been found that these measures are effective in arresting, and finally curing, a majority of cases of early chronic laryngeal tubercle. It may be necessary to supplement these conservative measures by more active treatment such as cauterization under local anaesthesia, but, generally speaking, the larynx will respond to such treatment if the condition of the lungs is not progressive or fatal. This being so it seems justifiable to draw certain conclusions which may give some indication of how to

prevent the incidence of this complication. Measures which will bring about a cure in early cases may be relied upon to prevent occurrence when applied to any patient with certain reasonable modifications according to the practical possibilities in each individual.

REST IN A SANATORIUM

Where this is indicated, on account of the condition of the lungs, there is no need to stress the point on account of the larynx, but where there are any indications that a phthisical patient has a larynx which is not quite normal he or she should go to a sanatorium if possible, even if the condition of the larynx is not definitely diagnosed as being tuberculous.

RESTRICTION OF THE VOICE

This is a matter of considerable difficulty in patients who are endeavouring to lead a normal life; nevertheless it is important that patients with pulmonary tuberculosis should restrict the use of their vocal chords. Tuberculosis

of the larynx is of somewhat frequent occurrence among clergy, street criers, and those whose occupation necessitates continual loud speech, and the occurrence of pulmonary tuberculosis among these is often first indicated by an early laryngeal lesion. Patients should be warned that excessive use of the voice is accompanied by a definite danger to themselves, and the

doctor in charge of every case of pulmonary tuberculosis should satisfy himself that no undue strain is being put upon the larynx. This may be a difficult matter where a patient is obliged to use the voice continuously in his daily occupation, but even in such cases some modifications are often possible.

ELIMINATION OF SEPSIS

I have always attributed the greatest importance to this form of treatment because I have found gross sepsis of the teeth and tonsils in a large percentage of patients. At the Mount Vernon Chest Hospital, before its conversion to a hospital for cancer, it was a matter of common experience to examine twenty new cases of tuberculous laryngitis and find that fifteen of them were affected in this way. I have seen cases where the pulmonary lesion was rapidly healing, but where the larynx, under the influence of gross dental sepsis, had become affected by a combination of tuberculous and pyogenic infection, which finally caused a fatal termination to an otherwise favourable condition. To my mind, sepsis of the upper air passages is often a deciding factor in the progress of a case, but I have heard that some observers look upon it lightly.

THE PREVENTION OF COUGH

In all cases cough is necessary for the expectoration of sputum from the lungs. But in many instances an irritable condition of the fauces, pharynx, and larynx leads to the development of a cough which has no practical usefulness, but merely damages the larynx and permits of its invasion by tubercle bacilli in the sputum. This type of cough can readily be restrained by suitable palliative measures, which are too well known to enumerate. It seems reasonable to suppose that attention to detail under the above headings may, in many cases, prevent the occurrence of this very serious and justly dreaded complication.

In addition to these measures it appears to be important that every patient with pulmonary tuberculosis should be subjected to examination of the larynx at regular intervals, which may be decided upon for each individual. Diagnosis in such cases cannot be made too early nor can treatment be applied too soon. Immediate admission to a sanatorium is indicated as soon as a diagnosis is made, because it is quite as necessary for laryngeal tuberculosis to be treated in a sanatorium as for any other kind. If

possible, the urgency in the case of the larynx is greater. It is almost impossible to persuade anyone to undergo a long period of silence which is necessary to produce a cure without the supervision, discipline, and restraint which can only be applied effectively in a properly organized institution.

The illustrations show some of the most common forms of early chronic tuberculosis of

EARLY TUBERCULOSIS OF THE LARYNX

the larynx. The treatment of this condition has already been outlined in general, but special methods may justifiably be used in special circumstances; these are as follows:

1. The galvano-cautery. The application of the galvano-cautery to a laryngeal lesion is made under deep cocaine anaesthesia. It should not be made until the lesion has been quiescent for some months. It has the effect of replacing tuberculous granulations by scar tissue. It has certain disadvantages, because tuberculous patients do not always tolerate the application of strong solutions of cocaine, nor are they always unaffected by the slight shock and mental strain in which submission to a rather difficult manipulation involves them.

2. Radium. The success which has attended the radium treatment of lupus of the upper air passages encouraged me to use it in quiescent cases of laryngeal tuberculosis. Its action is similar to that of the galvano-cautery because it stimulates the granulation tissue to form scar tissue. It is more thorough than the galvano-cautery because it is applied from the outside and leaves no part unstimulated. It is less drastic than the galvano-cautery because it produces no fierce local lesion and needs no local anaesthesia. But, like the galvano-cautery, it is a weapon which should be used only by a specialist who has watched the progress of the case and feels certain in his own mind that the condition is quiescent and that the time has come to take an active step in treatment.