On the evidence available it seems that neither arterial nor venous spasm is responsible (Haimovici and Suffness, 1948; De Bakey and Ochsner, 1949). In most of the reported cases factors well known to predispose to venous thrombosis, such as polycythaemia vera, dehydration, cardiac failure, and prolonged recumbency, have been absent.

It is well known that phlegmasia alba dolens occurs commonly during the puerperium, and this also applies to the severe variety of thrombosis which leads to gangrene. Cases of phlegmasia cerulea dolens, however, do not seem to be specially associated with the puerperium, and none of the reported cases have occurred during that period.

Treatment

This can conveniently be considered from the aspect of the peripheral circulatory failure, of the thrombosis, and of the swollen limb. As regards the peripheral circulatory failure, it is important to recognize that this demands urgent treatment with intravenous fluids which remain within the cardiovascular system. Compatible blood, small pool plasma, or dextran may be used, the amount necessary depending on the degree of the collapse. Treatment of the thrombosis demands the usual combination of heparin and ethyl biscoumacetate, and anticoagulant therapy should be continued until the patient is ambulant. As neither venous nor arterial spasm seems to play an important part, sympathetic blocks, papaverine injections, etc., can reasonably be omitted.

Treatment of the swollen limb entails its elevation above the heart level until the swelling has subsided, followed by external support to the limb in the form of an elastic stocking or of crêpe bandages when the patient becomes ambulant. Persistent swelling of the limb despite these measures is no different from that following phlegmasia alba dolens, and the treatment of this is beyond the scope of this paper.

Summary

A case of phlegmasia cerulea dolens is described. Points of interest from the literature are discussed. Active treatment of the phase of collapse and peripheral circulatory failure is advocated. At the same time full doses of anticoagulants should be given. The further course is not dissimilar from that of the better-known phlegmasia alba dolens.

I wish to thank Mr. M. Silverstone for permission to publish this case and for his helpful criticism.

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One of the difficulties confronting medical officers of health is alluded to by Dr. W. R. Perry, M.O.H. of Basford R.D.C., in his *Annual Report* for 1951. He refers to the elderly person who lives alone and, though not bedfast, is infirm and mainly dependent upon others. This type of person is often unwilling to leave home, but relatives and other interested people may bring considerable pressure to bear on the M.O.H. in an attempt to have their aged relative removed from home. Dr. Perry points out that compulsory removal from home can be undertaken only in certain restricted circumstances. Except under the Lunacy Acts, the person must be infirm or suffering from chronic illness, be living in insanitary conditions, be unable to devote to himself the necessary care and attention, and not be receiving such care from other persons. He also points out that, quite apart from the reluctance of most elderly people to leave home, it would be economically impossible for the nation to care for the majority of its aged persons in hospitals and institutions.

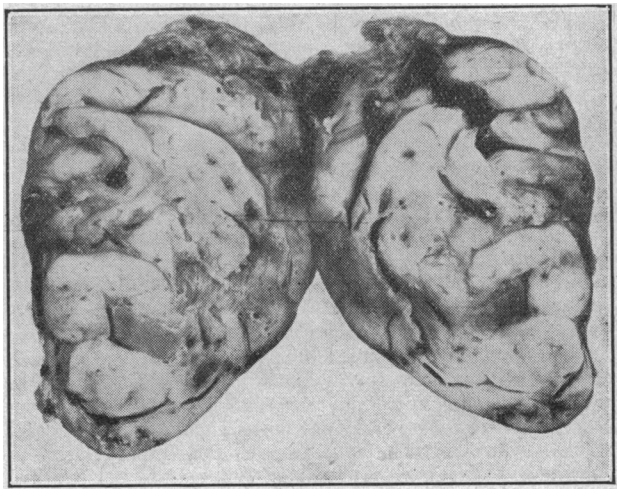
Medical Memoranda

A Case of Palpable Parathyroid Tumour

The following is a case in which adenoma of the parathyroid gland presented with simultaneous fractures of the necks of both femora.

Case Report

A man aged 26 gave the following history. Four months before admission he complained of a painful swelling of the right knee following a minor degree of trauma. The effusion gradually subsided. Three months before admission he complained of increasing anorexia, nausea, and occasional vomiting; loss of weight, lassitude, constipation, and polyuria also occurred. During the two weeks before admission he complained of severe cramp-like pains in the muscles of the legs and trunk, but rarely affecting the arms. Suddenly while walking he collapsed with severe pain in both hips and was admitted to hospital.



Examination showed him to be a pale, wasted, ill-looking young man, obviously in great pain. Both hips were kept in the position of flexion. There was a well-defined swelling about 1 in. (2.5 cm.) in diameter in the neck just to the left of the midline and below the level of the cricoid cartilage. This swelling felt very much like a thyroid adenoma on palpation. His blood pressure was 115/80.

X-ray examination showed fractures of the necks of both femora. The general trabeculation of the upper ends of the femora was obviously coarse and abnormal, and there was marked thinning of the cortex. Further radiographs of other bones, especially the humerus and the small bones of the hand, showed similar evidence of decalcification. The characteristic cystic appearance of hyperparathyroidism was poorly shown. No renal calculi were seen in a straight radiograph of the abdomen.

Biochemical investigations yielded the following relevant results: serum calcium, 18.8 mg. per 100 ml.; serum phosphorus, 3.4 mg. per 100 ml.; blood urea, 74 mg. per 100 ml.; serum alkaline phosphatase, 43.5 K.A. units per 100 ml.; serum albumin, 3.8 g.%; serum globulin, 3.4 g.%; haemoglobin, 74%. The urine contained a trace of albumin, but no Bence Jones proteose was detected.

The fractures were treated by extension. In view of the clinical, radiological, and biochemical findings it was decided to make a surgical exploration of the neck. As the general condition of the patient was poor and the pain was severe and difficult to control, the operation was performed as soon as the above investigations were completed.

Operation.—On January 3, 1951, exploration of the neck was performed (W. D. P.) under general anaesthesia. Through a collar incision the palpable tumour was easily

exposed. The tumour, which lay in the same plane as the thyroid, was pear-shaped and approximately 5 by 3 by 1.5 cm. in size. It was at first thought to be a thyroid adenoma, and in fact it was felt that it might be the only thyroid tissue present, as the gland itself was not immediately obvious. This was due to the small size of the thyroid, which, however, on careful exploration was quite normal. The tumour lay immediately below the left lobe of the thyroid. Further exploration revealed no other tumour, and no obvious parathyroid tissue was seen. It was therefore decided that the tumour was probably the offending parathyroid, and removal was carried out.

Post-operative Course.—Immediately after operation 10 units of parathormone was given intramuscularly, being repeated every 12 hours. Vitamin D_2, 100,000 units, and calcium lactate, 3 g., were also given, and were continued daily. In view of the difficulties of moving the patient about the bed penicillin was given to reduce the risk of post-operative pneumonia. During the first 24 hours the serum calcium fell to 13.6 mg. per 100 ml., and then gradually to 7.9 during the following 12 days.

Two days after the operation the patient developed acute suppression of urine, only 2 oz. (57 ml.) being passed in 24 hours, the blood urea at this time being 284 mg. per 100 ml. At the end of the fourth day the blood urea had risen to 400 mg. The urinary output then increased gradually and the blood urea began to fall, eventually reaching normal four weeks after the operation. After 21 days the urine became free from albumin. Four days after the operation, following several hours of increasing irritability, the patient developed frank tetany. Calcium gluconate, 20 ml., was given intravenously, this relieving the spasms in about half an hour. The dose of parathyroid hormone was then increased to 20 units twice daily. Tetany occurred on five subsequent occasions during the next three days, and each time was controlled by intravenous calcium gluconate.

One week after the operation the patient had become much more comfortable and was free from pain. He was given a high carbohydrate diet, with iron and vitamin C added, and made an uninterrupted recovery. The most prominent features of the convalescence were the rapid relief of pain after operation and the improvement in physique, the patient gaining over 3 stone (19 kg.) in three months. Radiographs of bones taken 10 months later showed complete restoration of the normal pattern.

Morbid Anatomy.—The tumour was a well-encapsulated oval mass 5 by 3 by 1.5 cm., weighing 17.6 g. The histological appearances were those of a simple adenoma of the parathyroid.

Comment

The following features of this case appear to be of interest. In the first place a parathyroid tumour is rarely palpable before operation, and as a result of this it was at first thought that the tumour was thyroid tissue. It is obvious that the common reasons for this are that the adenomata are rarely as large as this and that they normally lie in situations where they are well covered by the surrounding tissues. In this case, however, it was placed more superficially than one would expect to find either normal or abnormal parathyroid tissue. Crotti (1938) states that he has noted only one case palpable before operation; and Lievre (1932), after reviewing all the literature, could find only seven cases in which the tumour was felt.

The occurrence of acute suppression of urine and uraemia following removal of a parathyroid adenoma has been noted before. Usually, however, there is radiological evidence of calcium deposition in the renal tract, a feature which was absent in this case. The pathological process is apparently a reversible one, as the urine eventually became normal and the renal-function tests performed later were well within normal limits. The rapid rise in blood urea and the subsequent fall suggested that the renal lesion was probably a lower nephron nephrosis. There was no significant change in the blood pressure.

Severe muscular pains were a very prominent symptom, and it is interesting to note that these cleared up extremely rapidly after operation. In fact, the presence of these severe pains, which were very difficult to control by any drug, was the main reason for expediting the operation.

Finally, it was noted that the control of tetany was best accomplished by the slow administration of calcium gluconate intravenously. Parathormone was given in small doses repeated fairly often, but, even so, its efficacy seemed to diminish rapidly after the first two or three injections.

We would like to thank Dr. L. Phillips for the histological report, Dr. W. S. M. Grieve for the biochemical estimations, and Mr. R. A. King, the orthopaedic surgeon to the hospital, into whose ward the patient was admitted.

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Terramycin in Pertussis

Haemophilus pertussis is sensitive *in vitro* to terramycin (Hobby *et al.*, 1950), its sensitivity being approximately of the same extent as to chloramphenicol (Wells *et al.*, 1950). It has been shown that pertussis can be modified by chloramphenicol given early in the pre-paroxysmal stage (Bogdan, 1951a, 1951b), and it was decided to investigate the effect of terramycin along the same lines. This paper reports the results obtained in a small preliminary series of swab-positive cases treated with terramycin in both the pre-paroxysmal and the paroxysmal stages of the disease.

This trial was carried out on out-patients attending the Pertussis Contact Clinic of the Westminster Children's Hospital. No special selection of cases was made apart from the exclusion of all those who had at any time been immunized against pertussis or whose cough had been paroxysmal for more than two weeks and were too advanced in their illness for assessment of treatment. The cases were divided into three groups for assessment of results. In the course of this trial, which extended over ten months, a few further cases were excluded from all three groups through failure to attend for follow-up or complete treatment.

Crystalline terramycin hydrochloride was given in an elixir or as oral drops to the younger children, and in 250-mg. capsules to the older children. The daily dosage was the same in all cases—30 mg. per lb. (66 mg. per kg.) body weight, usually divided into four doses and given for five or seven days. The seven-day course was used at the start of this trial, but a five-day course was later found to be adequate. Symptomatic treatment consisted of nasal drops of ephedrine hydrochloride (¼%) in normal saline, and a simple non-opiate linctus, and was given to the children in all three groups.

Results

All the cases treated with terramycin were swab-negative at the completion of their course of treatment. Evaluation of treatment was based on cough. The paroxysmal stage covered the period of spasmodic cough, regardless of the presence or absence of whooping. The length of illness was assessed by the total duration of cough, however slight or intermittent.

Group I consisted of 10 children who were given treatment in the pre-paroxysmal stage. Seven of these, who were started on terramycin by the fifth day of symptoms, did not develop a paroxysmal stage, their total duration of cough ranging from 4 to 16 days. The three remaining cases, in which terramycin was started after the fifth day of the pre-paroxysmal stage, developed a paroxysmal stage lasting 2, 21, and 27 days. Their total duration of cough was 11, 35, and 36 days respectively. Two of the children, whose illness had been arrested, started to cough and became swab-positive again after re-exposure to infection. They had been symptom-free for three weeks with negative swab-cultures in the interval. A further course of terramycin once more successfully arrested their illness and there was no further recurrence. A third child whose illness had also