

Progress.—After curettage the femoral lesion healed. The skull deposits increased in size and number despite X-ray therapy (Fig. 3). New deposits appeared in the mandible, right scapula, right humerus, left clavicle and right ilium. There was exophthalmos on the left.

January 1953: When she had failed to respond to X-ray therapy and her condition was deteriorating she was given intramuscular cortisone 50 mg. daily, later reducing to 37½ and now 25 mg. daily.

Her general condition has improved greatly. The exophthalmos has slowly increased. The skull deposits have increased in size but the centres show calcification (Fig. 4). No new deposits have been discovered since cortisone therapy was commenced.

Biopsies

(1) Of original femoral lesion: "Large numbers of mononuclear cells and eosinophils." "Small numbers of foreign body type giant cells are present."

(2) Of skull lesion prior to cortisone: "A fair proportion of the tissue is fibrous in type. Lying in the fibrous stroma are varying sized collections of mononuclear cells. The cytoplasm of the cells appears a little foamy. Numerous eosinophils are scattered among these mononuclear cells."

(3) Of skull lesion after cortisone: "This section is composed mainly of large well-formed foamy cells." "There is a little thin fibrous tissue at one edge." "Eosinophils are completely absent."

COMMENT

This case showed the histological features of an eosinophil granuloma in the first biopsy with those of Hand-Schüller-Christian disease in the later ones. It supports the theory of Farber (1941) that these conditions are pathologically akin.

A future biopsy may decide whether the central calcification of the skull lesions is evidence of healing or possibly calcification of central necrotic tissue. Whether the clinical improvement with changed radiological features in this case of Hand-Schüller-Christian disease is spontaneous or due to cortisone must, at present, remain uncertain.

I wish to thank Dr. B. Gans for his co-operation in the treatment of this case, and Dr. G. Thomas who reported on the biopsies. Mr. J. Andrews of the Park Hospital, Lewisham, kindly prepared the illustrations.

REFERENCE

FARBER, S. (1941) *Amer. J. Path.*, 17, 625.

Mr. H. E. Harding said that he could report 3 cases of this condition from his own experience. The first was typical in all the main features, with very marked exophthalmos. There were localized lesions in all cases in the membrane bones. Biopsies showed the characteristic lipo-granulomatous appearance. Radiation treatment had been tried, and during this period—three or four years—only minor changes occurred, whether spontaneously or caused by the radiation he did not know. Irradiation certainly appeared to affect the local lesions.

Acrylic Replacement of Painful Osteomyelitic Femoral Amputation Stump.—A. C. BINGOLD, F.R.C.S.

Seddon and Scales (1949) were the first surgeons to report the construction of a femoral amputation stump in which the femur was replaced by an internal plastic prosthesis. Their patient was suffering from fibrous dysplasia of a femur.

To the author's knowledge the patient reported here is the first to be relieved of pain arising in a mid-thigh amputation stump by a similar operation.

CASE REPORT

History.—A man aged 38 was admitted on 3.11.52 complaining of agonizing pain in his left femoral amputation stump. An attack of osteomyelitis in his left femur at the age of 12 had necessitated many periods of prolonged hospitalization and many operations including drainage of abscesses and sequestrectomies. A resection of 8 in. of femoral shaft followed by an attempted repair of the defect with a fibular graft had eventually led to amputation through the mid-thigh when he was 26 years old. The stump had never been healthy and abscesses had been drained on two occasions. At the age of 28 an artificial limb was fitted, but he discarded it a few months before his admission on account of severe pain which had two elements: (1) phantom-limb pain of two to three years' duration; (2) pain on the inner side of the stump present for the last six or seven months.

On examination.—The patient was greatly distressed and in severe pain. He had a 7 in. left femoral amputation stump with a deeply sulcated terminal and several lateral scars. There were extreme tenderness and hyperæsthesia over the tip and the medial portion of the stump. No neuromata could be felt. Movements were full but with jactitation. There was no fixed deformity.

A radiograph showed a markedly irregular femoral stump containing a piece of metal (Fig. 1).

On the assumption that it was the diseased bone that was causing the pain, treatment, including lumbar sympathectomy, was at first directed to interrupting the sensory and sympathetic pathways but without success. It was therefore decided to replace the bone by an acrylic prosthesis (Fig. 2),



FIG. 1.—Pre-operative radiograph of the stump showing the irregular distal portion, the two spicules below the tip and the piece of metal near the lesser trochanter.

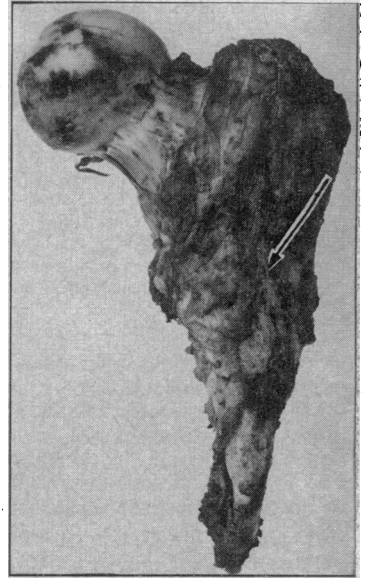


FIG. 3.—The resected bony stump. The arrow points to a small abscess cavity.



FIG. 2.—The prosthesis.

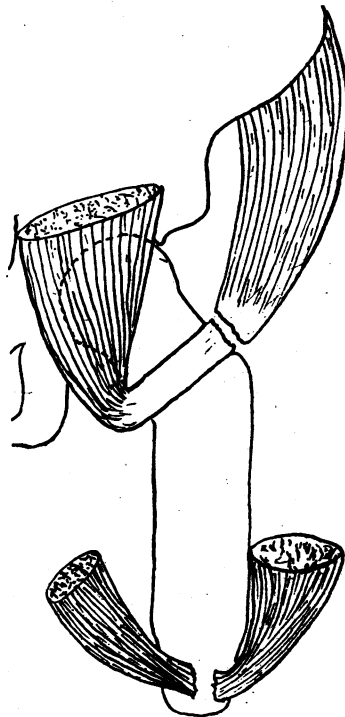


FIG. 4.—Diagram of the muscle attachments to the prosthesis.

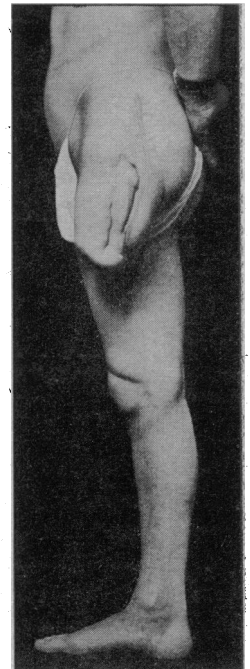


FIG. 5.—Stump ten months after the operation.

the dimensions of which were determined by slit radiography. It was fashioned with no trochanters; a channel was provided at the neck-shaft junction and a wide coronal groove at the distal end.

Operation (30.12.52).—A strip of fascia lata was first obtained from the right thigh. Through a lateral incision the left femur was exposed through fibrosed vastus lateralis and filleted out with a diathermy electrode and a few touches of the scalpel. Special care was taken to secure the psoas tendon. The capsule of the hip-joint was opened and the head of the femur was delivered by gentle traction and the whole piece of bone was lifted out of the wound (Fig. 3).

The abnormal findings were: (1) dense scar tissue at the lower end of the stump which spread upwards on the medial side and contained a number of bony spicules, (2) a large neuroma on the sciatic nerve and (3) intense fasciculations of the quadratus femoris and the upper part of the adductor magnus present throughout the operation. The scar tissue and the neuroma were resected. The prosthesis was inserted. The psoas tendon was passed through the tunnel and stitched to the glutei and the tensor fasciæ femoris with strips of fascia lata. The muscles were secured round the shaft of the prosthesis with two circumferential fascial sutures. Distally the ends of the adductors and vastus lateralis were stitched to each other in the groove at the tip of the prosthesis (Fig. 4). The vastus lateralis was closed over the artificial femur. Two glove drains were inserted.

Progress.—The patient's convalescence was marred by bouts of severe pain in the stump, which pain disappeared within one month, and by slow healing of the distal end of the wound. After three months the stump was healed and painless so that the patient was sent to a limb-fitting centre. He wore a pylon at four months and an artificial limb with a double swivel hip-joint six and a half months after his operation.

Ten months after his operation he stated that he had no pain but occasionally felt "pins-and-needles" in the foot of his phantom. On examination his stump was not tender and had a full range of strong active movements (Fig. 5). There was no deformity of the hip-joint. He was walking well on his artificial limb.

DISCUSSION

Consideration of the three abnormal findings in this patient's stump leads us to the following conclusions:

(1) The intense fasciculations of the quadratus femoris and upper part of the adductor magnus were in all probability produced by operative trauma and were of no significance.

(2) The sciatic neuroma was also unimportant: the pain in the stump was felt in the distribution of the obturator nerve, and phantom-limb pain is not usually relieved by resection of a neuroma.

(3) The osteomyelitic femoral stump and the scar tissue round it must be regarded as the cause of this patient's pain, since after their removal the pain disappeared. This conclusion cannot lightly be dismissed, although no previous writers, not even Riddoch (1941) and Falconer (1953), have considered diseased bone and scar tissue a source of pain in stump or phantom.

In spite of the satisfactory short-term result it would be wrong to claim a cure in this case since Lewin and Phillips (1952) have reported a patient whose pain started twenty-seven years after amputation. It is felt that the method is worth further trial.

REFERENCES

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 SEDDON, H. J., and SCALES, J. T. (1949) *Lancet*, ii, 795.

Fracture Separation of Upper Humeral Epiphysis.—DAVID L. EVANS, F.R.C.S.

D. S., a boy aged 5, was transferred to Westminster Hospital on 30.10.51. One month earlier he had fallen some 14 feet, sustaining a fracture separation of the right upper humeral epiphysis (Fig. 1). Two attempts at closed reduction had been made elsewhere, without improving the position.

Examination revealed the upper end of the humeral shaft projecting under the skin at the point of the shoulder. Movements of this joint were minimal and caused pain. X-ray showed no change in the deformity but much callus formation. No surgical intervention was indicated. He was encouraged to begin moving his shoulder.

Over the past two years movements of this joint have steadily increased, and the clinical and radiological deformity has become less marked.

Examination two years after injury reveals bowing of the upper end of the humerus, with some consequent shortening of the arm. Limitation of movement at the shoulder is only noticeable in abduction.