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METHOD OF REDUCING FRACTURE-DISLOCATION OF HIP-JOINT WITH FRACTURED FEMUR ON SAME SIDE

BY

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A fracture of the shaft of the femur complicating a dislocation of the hip on the same side makes the task of reducing the dislocation extremely difficult. Two such cases are described of severe multiple injuries to a lower limb each complicated by a posterior dislocation of the hip in which the dislocation was reduced by a method based on that described by Ingram and Turner (1954).

The method consists in transfixing the greater trochanter of the femur percutaneously in an antero-posterior direction with a stout Steinmann pin. On to each projecting end of the pin is clamped a Mole self-grip wrench of the type used by mechanics and commonly known as the "third hand." This wrench grips the pin more efficiently than any surgical instrument, and, once clamped tight, it does not slip or rotate. With one assistant controlling the fractured femur and another steadying the pelvis, the operator holds the wrench in either hand and exerts traction on the proximal fragments of the femur in a position of flexion and abduction until reduction is accomplished. Strong traction may have to be sustained for a few minutes. After reduction has been performed the pin is withdrawn.

In the first case described here the method was employed after exposing the hip-joint, while in the second case a closed reduction was used successfully.

Case 1

A man of 25 sustained severe multiple injuries to his left leg in a motor-cycle accident. The foot and ankle were so badly damaged that a below-knee amputation was carried out after initial resuscitation with blood transfusions. Radiographs showed a comminuted supracondylar fracture of the left femur. The hip region was not radiographed initially. When attempts to reduce the supracondylar fracture failed to align the fragments a posterior dislocation of the hip-joint was suspected. The proximal fragment of the femur was fixed in flexion, abduction, and internal rotation. The dislocation defied all attempts at reduction and manipulation. The patient's condition at this stage did not warrant an open reduction being performed, and he was returned to bed with the

limb on a Thomas splint with skeletal traction through the tibial tubercle. Radiographs taken next day showed a posterior dislocation of the left hip.

For the next few days his condition gave rise to anxiety in spite of further blood transfusions, but at the end of a week he had recovered sufficiently for an open reduction of the dislocation to be attempted.

Operation.—The left hip was exposed by a posterolateral incision, and the head of the femur was found lying on the back of the ilium with no sign of an investing capsule. The posterior margin of the acetabulum had been split off into two separate fragments. Attempts were made to reduce the dislocation, but in spite of using all the available instruments the head could not be made to budge. A pair of self-grip wrenches were borrowed from the hospital engineer, cleansed, and sterilized. The greater trochanter was transfixed with a Steinmann pin and the wrenches were clamped on to the pin on each side of the bone. By grasping the wrenches the femur could then be lifted up and forward until the dislocation was reduced with surprising ease. The posterior acetabular margin was replaced and held in position with two screws. The fractured femur was then realigned and placed on the Thomas splint.

Twelve weeks after this operation the fractured femur had united and the patient was discharged from hospital, walking with crutches. He had regained an excellent range of movement of both hip- and knee-joints. Three months later he was walking about with his artificial limb.

Photograph of model showing the application of the self-grip wrenches.

Case 2

A youth of 18 was admitted to hospital in a shocked state with severe multiple injuries to his left lower limb. There was a compound fracture of the big toe, a double fracture of the tibia, and a supracondylar fracture of the femur. In addition to these injuries there was a posterior dislocation of the hip-joint which on this occasion was recognized initially when attempts made to straighten the femur had failed to correct the angulation. Closed manipulation of the dislocation was unsuccessful and a Steinmann pin was then inserted through the skin, transfixing the greater trochanter. The self-grip wrenches were again borrowed and brought into use as previously described. With this method the dislocation was reduced with an audible snap. The pin was withdrawn and the other injuries to the left leg were then treated. Two Steinmann pins were driven across the upper and lower ends of the

tibia, the tibial fractures were manipulated, and a below-knee padded plaster cast was applied, incorporating the pins. The limb was then laid on a Thomas splint, the femoral fragments were aligned, and skeletal traction was applied through the pin in the upper tibia.

The patient's subsequent progress was very satisfactory. All his fractures united, and six months later he returned to work as a sanitary inspector. His only complaint was some slight stiffness around the ankle-joint at the start of the day. He walked unaided without a limp.

Discussion

Closed manipulative reduction of a posterior dislocation of the hip is as a rule unsuccessful when there is a fracture of the same femur. Where the femur is fractured in its proximal half it has been advised to perform an intramedullary fixation of the femur and then to reduce the dislocation in the usual manner once the long lever of the shaft has been restored. Watson-Jones (1955) quotes a case thus treated. In the two cases reported above the fractured femur was in the supracondylar area and therefore unsuitable for internal fixation. One is then left with the alternative of trying to reduce the dislocation by closed skeletal traction on the proximal femoral fragment or to perform an open reduction.

Open reduction in these cases may be more difficult than it would appear to be. Dehne and Immermann (1951) report an unsuccessful attempt in which lion-jawed forceps were applied to the exposed proximal fragment of the femur for traction and manipulation. In Case 1 it was only after the trochanter was transfixed with a Steinmann pin that the head was manoeuvred into the acetabulum, using the tremendously strong grip of the two wrenches on the pin. These instruments brought into emergency use certainly saved that situation.

If the dislocation is diagnosed early in treatment it is an easy matter to transfix the greater trochanter through the skin with a stout pin; the reduction of the dislocation should then give rise to no great difficulty using these clamps. However, in severe multiple injuries the hip dislocation is often overlooked at first. Dehne and Immermann (1951) have found a total of 42 cases in the literature of a dislocation of the hip with a fracture of the femur on the same side. In exactly half of these cases the dislocation was overlooked at the first examination, and indeed in several cases was not discovered until days or even weeks later. The dislocation must be suspected when the fractured femur fails to align with manual traction. Once the dislocation is recognized it should be reduced without delay. Open operation should not be necessary in the great majority of cases and would have been avoided in Case 1 if the diagnosis had been made earlier and also if the comparative ease of the closed traction method used in Case 2 had been appreciated at the time.

Summary

Two cases are described of multiple injuries to one lower limb complicated by a posterior dislocation of the hip-joint.

A method of skeletal traction is described whereby the dislocations were reduced.

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The World Health Organization is supplying 25,000 doses of cholera vaccine to help immunize the population of Nepal. A large epidemic of cholera has broken out in Khatmandu, the first to be reported from Nepal since the beginning of the century. W.H.O. emphasizes that the cholera situation is serious in Asia. Cases and deaths are twice as numerous as last year in India and Pakistan, and an epidemic has struck Thailand for the first time for many years.

FRAMYCETIN SULPHATE: A CUTANEOUS ANTIBIOTIC

BY

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Although inquiry from general practitioners confirms that pyogenic skin infections are still prevalent in the population as a whole, the number of such cases coming to hospital for treatment has shown a steady decline within the past few years (Hall and Burrows, 1957). This is largely due to the satisfactory response to the surface application of antibiotics. As Church (1954) has pointed out, a satisfactory antibiotic for this purpose is one which is not used systemically, which causes little cutaneous reaction, and which has a low incidence of bacterial resistance. It was therefore thought worthwhile to study the properties of framycetin sulphate ("soframycin") in relation to these criteria.

This drug was first described by Decaris (1953). It has toxic properties when administered systemically, and therefore is reserved exclusively for local use. Published reports in the French literature indicate that it satisfies the other requirements, but as no investigation appears to have been carried out in this country it was decided to test its efficiency in suitable cases.

Framycetin sulphate is produced by a strain of *Streptomyces decaris*. It is a white odourless powder, soluble in water, and the free base is alkaline (Janot *et al.*, 1954).

Investigation

Framycetin sulphate (kindly supplied by Roussel Laboratories Ltd.) was made up in 1.5% in a water-soluble ointment base. Patients were told to apply the ointment three or four times a day, removing crusts with a 1% solution of cetrimide, and where necessary, as with infections of the beard and impetigo of the face, applying the ointment into the nostril (Gould and Cruikshank, 1957).

Fifty cases were treated, and bacterial examination was carried out on material from each case. The organisms were tested *in vitro* on blood-agar for sensitivity to penicillin, chlortetracycline, and framycetin sulphate (Table I). The concentrations of antibiotics used were: penicillin 5 units/ml., chlortetracycline 0.1%, framycetin sulphate 0.1%.

The 50 cases were made up as follows: impetigo, 32; infective dermatitis, 9; secondarily infected eczema, 4; infected papular urticaria, 2; folliculitis, 2; and sycosis barbae, 1. Only two cases—one of impetigo and one of infective dermatitis—failed to respond. Twenty-two (69%) of the cases of impetigo were cured within one week.

Organisms

1. *Staphylococcus aureus haemolyticus* only was found in 14 cases of impetigo, 2 cases each of folliculitis, infected papular urticaria, infective dermatitis, and secondarily in-

TABLE I.—Sensitivity of *Staph. aureus haemolyticus* and *Str. haemolyticus*

	Penicillin		Chlortetra.		Framycetin	
	Res.	Sen.	Res.	Sen.	Res.	Sen.
1. <i>Staph. aureus haemolyticus</i> only ..	19	4	2	21	0	23
2. <i>Str. haemolyticus</i> only ..	0	6	0	6	5	1
3. Mixed Infection:						
{ <i>Staph. aureus haemolyticus</i>	5	3	2	6	0	8
{ <i>Str. haemolyticus</i> ..	1	7	0	8	5	3
4. Mixed Infection:						
{ <i>Staph. aureus haemolyticus</i>	1	4	0	5	0	5
{ <i>Str. haemolyticus</i> ..	0	5	0	5	4	1