

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 Immerman (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 Immerman (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.

#### REFERENCES

- Dehne, E., and Immermann, E. W. (1951). *J. Bone Jt Surg.*, 33A, 731.  
Ingram, A. J., and Turner, T. C. (1954). *Ibid.*, 36A, 1249.  
Watson-Jones, R. (1955). *Fractures and Joint Injuries*, 4th ed., 2, 680. Livingstone, Edinburgh.

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

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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

fect ed eczema, and 1 case of sycosis barbae (Table I). The average time of cure in these cases was six days; some were cured in three days, the longest took 14 days.

2. *Streptococcus haemolyticus* only was found in six cases of impetigo (Table I). The average time of cure in these cases was 11 days. The shortest time of cure was seven days and the longest 21 days.

3. *Staph. aureus haemolyticus* and *Str. haemolyticus* were found in 3 cases of impetigo, 4 cases of infective dermatitis, and 1 case of secondarily infected eczema (Table I). The average time of cure in these cases was 11 days; the shortest time of cure was six days, and one case was not clear after three weeks' treatment.

4. *Staph. aureus haemolyticus*, *Staph. aureus*, and *Str. haemolyticus* were found in 4 cases of impetigo and 1 case of infective dermatitis. The average time of cure in these cases was eight and a half days; the shortest time of cure was four days; and the longest 15 days.

The other cases were made up as follows: Impetigo—*Staph. aureus haemolyticus* and *Str. viridans* (1 case); Infective dermatitis—*Staph. aureus haemolyticus* and *Staph. albus* (1 case); infective dermatitis—*Staph. albus* (1 case). No organisms were isolated in six cases of clinical impetigo. Table II shows the sensitivities of the organisms isolated.

TABLE II.—Sensitivities of All *Staph. aureus haemolyticus* and *Str. haemolyticus* Organisms

	<i>Staph. aureus Haemolyticus</i>		<i>Str. Haemolyticus</i>	
	Resistant	Sensitive	Resistant	Sensitive
Penicillin .. .. .	27	11	1	18
Chlortetracycline .. .. .	4	34	0	19
Framycetin .. .. .	0	38	14	5

No undesirable reaction to the antibiotic was noted in the series, though this was carefully sought. The ointment has been used in over 100 patients without ill effect; many cases were statistically valueless because the patients failed to return for re-examination.

### Discussion

The cure rate of 69% of cases of impetigo cleared within one week indicates that framycetin sulphate is an effective cutaneous antibiotic and compares favourably with neomycin; Church (1954) reported 60% cure in one week. It also compares favourably with chlortetracycline (Solomons, 1951), bacitracin (Miller *et al.*, 1949), and chloramphenicol (Newman and Feldman, 1951). However, general statements about its effectiveness must be guarded, because 65% of the streptococci isolated in this series were resistant, and it may be that its apparent effectiveness in this small series was due to the high proportion of cases from which the very sensitive *Staph. aureus haemolyticus* only was isolated. A 0.1% solution was used for *in vitro* testing, and a 1.5% concentration of antibiotic in water-soluble ointment is hardly ever likely to exceed 0.1% concentration in the tissues.

The *in vitro* findings appeared to be confirmed in three ways. (1) The two cases which framycetin sulphate failed to cure were both due to the haemolyticus type of streptococcus. (2) In one case of these—a case of clinical impetigo—a sensitive *Staph. aureus haemolyticus* was grown originally. As there was no response to treatment after one week, a further swab was taken, and this produced a pure growth of resistant haemolytic streptococcus. (3) The average time of cure of cases in which a haemolytic streptococcus was isolated, either in pure or in mixed growth, was twice that of those cases from which only *Staph. haemolyticus* was grown.

### Summary

The results of treatment of 50 cases of skin infection with a new antibiotic—framycetin sulphate (soframycin) have been investigated.

Only two cases failed to respond to this antibiotic. Of the 32 cases of impetigo, 22 (69%) were cured within one week.

In 38 cases, all of which responded to the antibiotic, a *Staph. aureus haemolyticus* was isolated. In 19 cases *Str. haemolyticus* was isolated, and only five were sensitive to the antibiotic. The latter finding may reduce its effectiveness in general use, and clinical evidence is given to support this.

No example of contact sensitivity or irritation was noted in this series.

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### REFERENCES

- Church, R. (1954). *Brit. med. J.*, 1, 314.  
 Decaris, L. J. (1953). *Ann. pharm. franc.*, 11, 44.  
 Gould, J. C., and Cruikshank, J. D. (1957). *Lancet*, 2, 1157.  
 Hall, R., and Burrows, D. (1957). *Brit. J. Derm.*, 69, 400.  
 Janot, M. M., Pénaud, H., Stolk, D. van, Hagemann, G., and Pénasse, L. (1954). *Bull. Soc. chim. Fr.*, p. 1458.  
 Miller, J. L., Slatkin, M. H., and Johnson, B. A. (1949). *Arch. Derm. Syph. (Chicago)*, 60, 106.  
 Newman, B. A., and Feldman, F. F. (1951). *Ibid.*, 64, 212.  
 Solomons, B. (1951). *Brit. med. J.*, 2, 525.

## Medical Memoranda

### Management of Tetanus, using Chlorpromazine and Mephenesin

A 13-year-old boy was admitted to the Royal Victoria Infirmary on May 1, 1956, with moderately severe tetanus. Four days earlier he had developed a stiff neck. The next day trismus appeared, and during the 48 hours preceding admission he had increasing spasms of his back muscles and backache. There was no history of recent injury. He was a well-developed boy with severe trismus. Even when first seen he was having strong tetanic spasms at three- to four-minute intervals, but without cyanosis. There were dry superficial abrasions on his knee and wrist, but *Clostridium tetani* was not recovered from them.

### MANAGEMENT

Sedation began with 50 mg. of chlorpromazine intramuscularly. There was a striking response, and within 20 minutes he was able to open his mouth. Mephenesin, 1 g., was then given orally. For the first 24 hours his spasms were well controlled with 50 mg. of chlorpromazine four-hourly and 1 g. of mephenesin three-hourly. During the second 24 hours he required larger doses of mephenesin, up to 1 g. hourly, with 25 mg. of chlorpromazine intramuscularly every four hours. On the third day the mephenesin was increased still further, and for the next nine days he was given a daily total of 36 g. of mephenesin by intragastric tube and 150 mg. of chlorpromazine intramuscularly (see Table). In addition 100,000 units of tetanus antitoxin

### Amounts of Intramuscular Chlorpromazine and Oral or Intragastric Mephenesin Administered Daily

Day:	1	2	3	4	5	6	7	8	9	10	11	12
Chlorpromazine (mg.) .. .	100	250	300	225	300	225	175	150	150	150	150	150
Mephenesin (g.) .. .	3	16	20	32	33	34	32	33	36	36	36	—

had been given intravenously just before admission, and 120,000 units were given intramuscularly over the next two days. He was also given penicillin, but after five days this was changed to chlortetracycline because of developing consolidation in the left lung.

The pharynx and upper air passages were first kept clear by posture and aspiration, but on the third day, after a severe cyanotic attack, tracheotomy was carried out. (It