MECHANICAL TREATMENT OF COMPOUND AND SUPPURATING FRACTURES.

Mr. Robert Jones, Ch.M., F.R.C.S. Ed. and I., contributes to the *British Medical Journal* some interesting remarks on the mechanical treatment of compound and suppurating fractures occurring at the seat of war. He writes in part:—

"I have been asked to offer some suggestions as to a suitable way of treating certain fractures of the upper and lower limbs as they occur at the seat of war. We realize that wounds as met with during the Boer and Russo-Japanese campaigns were very different in character from those occurring on the richly manured fields in Flanders, where suppuration so commonly follows. The point, therefore, is to decide upon the best way of immobilizing compound fractures in the presence of pus.

The method employed must be both efficient and simple; it must allow easy and painless access to the wound, and protect the limb from harm during transport.

Plaster-of-Paris, so often used in the treatment of simple fractures, becomes a filthy method where suppuration has occurred. Despite every precaution for the exposure of the wound, the plaster mops up discharges like blotting-paper, and becomes horribly offensive, adding to the infection of the wound.

Fractures of the Lower Limb.

Hip and Upper Thigh.

Fractures through the hip-joint and those just below the trochanter are best treated by a modification of the Thomas splint, which I have described as an "abduction frame." It is a splint upon which the patient lies and can be carried. Extension is easily maintained and applied, and need not be relaxed for any purpose. The patient is placed upon this splint, and any displacement should be overcome by immediate extension in the abducted plane. Both limbs are controlled and extension is secured by strapping on the injured limb with counter extension by means of a smooth leather groin strap on the opposite side of the pelvis. This groin strap should not be slackened by the nurse under any pretext, but in order to avoid pressure sores she should be instructed to alter the area of skin over the adductors, which is subjected to pressure, by moving it to and fro. This method of "fixed extension" in abduction secures the lower limb in relation to the pelvis in a manner which can never be satisfactorily achieved by weight and pulley, where reliance is placed on the weight of the body for counter extension. It is by reflex nervous impulses, induced by changes of tension in the muscle, that muscular spasm is produced. A patient lying in bed with a fractured femur—high up or lower in the shaft—cannot avoid constantly changing the state of tension of the muscles of his thigh if a weight and pulley are attached to his limb. The counterpoise is the weight of his body. Every time he tries to shift the position of his shoulders by digging his elbows into the bed he alters the tension of his muscles, calling forth a reflex spasm. When he falls asleep and his muscles relax, when he moves in his sleep, when he is lifted upon a bedpan or moved slightly by the nurses to have his bed put straight, there is apt to recur this reflex contraction due to sudden change in tension.

The patient who lies on an "abduction frame" can be lifted and moved without pain, without disturbing the fracture or relaxing the extension, and the dressing can be changed without interfering with the mechanism of fixation. If the wound is through the buttock and the discharge takes place there, the splint can be modified. The abduction frame can be applied in a few minutes.

Upper Middle and Lower Thigh.

For all other fractures of the thigh, the Thomas knee splint is incomparably the simplest and best. I am in the habit of using this splint for the treatment of all fractures of the middle and lower third of the thigh, fractures through the knee-joint, and fractures through the upper and upper middle portion of the leg.

The application of the Thomas bed splint is quite easy. Strapping of adhesive plaster is applied in the usual way to the sides of the limb. At the lower end of the extension strapping there is a loop of webbing, to which is attached a length of strong bandage. The ring of the splint is passed over the foot and up to the groin till it is firmly against the tuber ischii. The extensions are then pulled tight, the ends turned round each side bar, and tied together over the bottom end of the splint, which should project 6 or 8 in. beyond the foot. Local splints can then be employed, and are made of block tin or sheet iron. They can be moulded by the hand to fit the limb, and yet, being gutter-shaped, they are rigid longitudinally. They can be disinfected by fire or water. A couple of transverse bandage slings suspend the limb from the side bars of the knee splint.

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