

level indicating the pressure in the artery before the section. The dilatation of the arteries must have been the only cause of this increase of pressure.

The effect of heated blood upon the heart is termed *paralysis* rather than exhaustion, because heat has been shown to have the power of directly paralyzing its muscular tissue, and because in sunstroke the first stage, or that of frequent and forcible contraction of the heart, is not an essential part of the disease. But whatever may be the value of my theory, the facts of experiment are such as I have recorded them.

A CASE OF FRACTURE OF THE THIGH IN AN INFANT SEVEN MONTHS OLD.

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CHAS. HENRY MYERS, between six and seven months of age, a puny child, but one neither scrofulous nor rickety, fell from his sister's arms to the floor, April 23d, 1864, and sustained a fracture of the right thigh. This was on Friday noon. On the following Monday he was brought to the Surgical Department of the Dispensary for treatment. It was now three days after the receipt of the injury, during most of which time he had cried and worried constantly. The right thigh was tilted up, forming a prominent angle at its middle, upwards and outwards. The femur was broken in the middle of its shaft. The limb was swollen to double the size of the other. The groin and perinæum were excoriated, on the injured side. Crepitation and tenderness on pressure were found over the prominent centre of the femur; and, as an additional sign, the greater trochanter did not describe its usual arc of a circle on rotating the femur from the knee. Following the position of flexion and abduction natural in the young infant, the thigh was more tilted up and outwards than is usual in the same injury in the adult; and the tendency to displacement arose mainly from the spasmodic action of the psoas and iliacus muscles. In this respect it resembled the adult fracture of the upper third of the femur, where the two intra-pelvic muscles just mentioned raise the upper fragment, and also rotate it outwards, from their insertion into the trochanter minor, which lies behind rather than inside the femur.

The indications for mechanical treatment were plain enough, but the difficulty of carrying them out was very great, on account of the infant's tender age. Treatment by a weight, by the double-inclined plane, or by counter-extension from the perinæum, were all obviously impracticable. In the applications which were made the first few days we had to pay regard to the swelling, the tenderness

and the excoriation. Accordingly we were not surprised to find, on the fourth day after treatment was begun, or one week after the accident, that no attempt at union had taken place, although the swelling and soreness were much reduced.

Under these circumstances the following apparatus was applied; which, as it succeeded very well, we think it worth while to describe, although it is but a modification of the old appliance of Scultetus. A double flannel binder was carried around the waist and hips, and secured by pins, because this fastening admitted of the readiest readjustment, either to tighten or loosen it. Between its folds were made two pockets; one over the hip and side of the ilium, the other in front of the anterior superior spine of the latter bone. The bony prominences of the hip, knee and ankle were carefully cushioned with cotton-batting. A long outside splint, made from a shingle, extended from the outer pocket down to, and an inch below the foot. An inside splint, of gutta percha moulded on, reached from the upper third of the thigh to below the foot, and was then turned at a right angle, beneath the foot, to meet the long splint. Both the lateral splints were rolled in sheet lint, several thicknesses, before they were applied. Next, an anterior splint, of gutta percha, with the upper end curved upward over the abdomen, extended from the anterior pocket of the binder, down to just above the patella. This splint was meant to meet three indications:—1st, to press upon the projecting ends of the fracture, and compress the muscles of the anterior aspect of the thigh; 2d, to strengthen the apparatus at the upper third, where the inside splint was obliged to stop short on account of the perinæum and the excretions; 3d, to prevent the child from bending the pelvis on the thigh in trying to sit up, which it did quite forcibly until the abdomen brought up against the end of the anterior splint.* This splint was well padded over the fracture, and all the space in the groin was well filled in with cotton-batting, so that when the splint was bound down, very considerable pressure was exercised over the tendons of the psoas and iliacus, although, of course, their fleshy bellies were inaccessible within the pelvis.

The limb being now gently extended, the three splints were secured pretty firmly with a dry roller. Next a wet bandage was put on, and plaster of Paris rubbed in until it was quite thick and stiff. For obvious reasons, the perinæum and upper third of the inside of the thigh were left uncovered. After the stucco bandage had set and dried, the whole was varnished over with common shellac, or coach-maker's varnish, several thicknesses, to prevent the urine from soaking through the bandage.†

* "Coulon" uses the simple "*appareil de Scultete*," and applies a bandage across the chest, under the arms, to keep the child supine. But none of his cases were as young as this one.—*Des Fractures chez les Enfants*," par Cou'on et Marjolin.

† This excellent hint we owe to the history of a fracture of the thigh in a child of 23 months, admirably treated by Dr. John Green, and reported in this JOURNAL.

Finally, a strong and broad strip of cotton cloth extended from the flannel binder in front down to the anterior part of the thigh bandage, and was fastened by sewing. This secured the waistband from slipping up, or turning around, when the child twisted the trunk. Thus done up, the infant was left with the nates, perinæum and urinary apparatus free to be cleansed. As soon as the dressing was finished, crying ceased, and the child did not have another fit of worrying with its fracture during the duration of treatment. Meanwhile it underwent the cutting of two incisors, and a sore arm from vaccination, and yet gained in flesh and brightness. The mother had a good supply of milk, and the babe also received small quantities of iron. Occasionally a fresh coat of varnish was applied; but the urine did not pass through the bandages, and they were not changed until two weeks had passed.

One fortnight after its application, the apparatus was removed. The limb came out dry, clean and fresh, without an abrasion in any part. Union was good, the limb straight, and there seemed absolutely to be no shortening. Although we might expect firm union in fourteen days,* yet the child flexed and extended the leg so forcibly, that it was thought prudent to re-apply the apparatus. At the end of two weeks more it was finally removed, and the result was as perfect as could be desired.

The peculiar difficulties in treating a fracture of the thigh in so young an infant as seven months old, seem to be to secure immobility in so flexible and restless a subject; and to get moderate extension and pressure, without excoriation, either from this cause, or from the constant dribbling and infiltration of urine, and of the excretions of the bowels.

The apparatus above described allowed the child to be moved about, and even brought to the Dispensary occasionally on a pillow; thus relieving the tediousness—to a baby almost insupportable—of being confined in bed in one position.

As regards the youth of the subject, so far as we can find, the case is an unique one; and the result obtained seems to have justified the treatment pursued.

ON LIPOROCELE: ITS ANALOGY TO FATTY SERUM OF THE BLOOD AND TO CHYLOUS URINE.

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SOME time ago Mr. Fergusson operated upon a case of hydrocele, and withdrew a white, milk-like fluid. This fluid was brought under the notice of the Medical Society of London by Mr. Mason. At the request of the Society I undertook to further examine and report

* Coulon gives the average of treatment at from twelve days to three weeks, in children's fractures.