

be administered by inunction instead of the oil of wintergreen, as it is absorbed almost as readily.

Mercury by Inunction. This method of giving mercury to infants and young children in the treatment of syphilis is so fully recognized by the profession as being superior to any other method of administration that I do not feel called upon here to more than mention the fact.

Colloidal silver within the past few years has been administered hyperdermically, by the stomach, and by inunction in the treatment of various forms of localized and general septicemia. The profession, as a whole, I think, has come to recognize that this is a most valuable adjunct in our treatment of septicemia, and I for one, after a large experience extending over quite a number of years, am firmly convinced of its efficacy. In the acute enlargement of the lymphatic tissues of the neck which may follow scarlatinal, diphtheritic, and other forms of tonsillitis I believe that this remedy, in the form of unguentum Credé, properly rubbed into the surrounding lymphatic tissues, is of very great value in preventing the spread of the disease and in controlling the localized sepsis. This drug can be given more efficaciously to infants and young children by inunction than in any other manner, and its value in combating general and localized sepsis is of much more value in infants and children than it is in adults, because inunctions in general, are, for the reasons given in the early part of this paper, more efficacious in children than they are in adults.

THE TREATMENT OF IRREDUCIBLE CONGENITAL LUXATIONS OF THE HIP BY OPERATIVE MEANS.

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THE treatment of congenital luxations of the hip by the bloodless method of reduction has so occupied the attention of the profession for many years past, that it may be well to recall what can be done for the relief of those cases which have passed beyond the period when it is possible to reduce the luxation by non-operative procedures. Many such patients pass their earlier years with comparatively little pain, and, notwithstanding their deformity and more or less disability, do not apply for treatment until pain and difficulty of locomotion demand relief. The histories of several cases are briefly as follows:

CASE I.—Jessie V., aged fifteen years, was admitted to the Orthopedic Hospital, October, 1904, with double congenital luxa-

tion of the hips. While both hips were out only the left one was causing complaint. The right one seemed firmly applied to the ilium and did not appear to move in walking. The left one, however, shifted its position markedly. It was quite loose and the left limb was 3 cm. shorter than the right. There was a marked waddling gait and pain which caused her to apply for relief. She was put to bed and weights amounting to fifteen pounds applied for about six weeks. In December, 1904, she was etherized and an unsuccessful attempt was made at reduction by the ordinary circumduction method. Hyperextension over König's padded block was also tried without result. A heavy, wide, close-fitting belt of webbing with a pad and perineal straps was then applied; this afforded some relief and she left the hospital.

In February, 1906, two years later, she was re-admitted with her condition much aggravated. Pain was almost constant, walking for any distance was impossible, and she was unable to earn her living. Her charitable friends were then looking around for some place where she could be taken care of. She was again put on extension and again an unsuccessful attempt was made at reduction. This failing, in April, 1906, she was operated on. An anterior incision was made, a new socket was excavated from the ilium above the old acetabulum, the head of the femur was inserted therein, and the limb was put up in plaster-of-Paris in an abducted position. She was kept abed for eight weeks and then allowed to get up with a cast on. This was removed one month later and in another month she was walking well with the aid of a cane. She was then discharged. Since that time she has improved. While she still has a somewhat peculiar gait she can walk long distances without pain. The hip is movable in all directions, but does not slide up and down; it has evidently retained its position in its new acetabulum. She was formerly unable to take exercise and grew fat and very heavy; now she is active, working, and earning her living, and has lost the excessive fat and weight which previously encumbered her. The transition from her previous helpless condition to her present active and useful one has been very marked.

CASE II.—Minnie H., aged sixteen years, was under treatment in 1892 by another surgeon for some deformity of the feet, the exact character of which is not known. It was stated by the nurse that when an infant the child had paralysis of both lower extremities. Tenotomy of both Achilles tendons was done and later braces were applied and worn continuously thereafter.

In 1897 she came under my care. At that time there was marked paralysis of both lower extremities together with double congenital luxations of the hip. Locomotion was almost impossible. One foot was in marked paralytic valgus, while the other was more of a paralytic equino varus. The left hip was luxated anteriorly, while the right was luxated posteriorly. An arthrodesis was done

on the right foot, which improved its position somewhat. The right hip was then operated on by an incision over the trochanter; the ligamentum teres was removed and the adductors and tensor fasciæ femoris divided subcutaneously. The head was brought down to the acetabulum, but as it would not stay in place a new acetabulum was excavated. The child was markedly strumous and long-continued suppuration followed this operation. It did not involve the deep parts around the bones but rather the superficial parts, so that while very extensive scarring resulted the hip region was not at all stiffened and movements were not restricted. After two months, however, she got up with a brace and she was able to get around some, but dragged especially her left leg. Nothing was done to the left hip, which remained fairly well in its displaced position with the head just below the anterior superior spine and the trochanter posterior; evidently there was a twisting of the neck and shaft.

She again applied for treatment in 1906, nine years after the previous operation. On examination the right hip was found to have again become luxated on the dorsum of the ilium. The left hip was apparently somewhat more posterior. The right hip slid up and down from one-half to one inch. In April, 1907 (thirteen months ago), the right hip was again operated on, a new acetabulum was dug out and the head inserted and the limb put up in the abducted position in plaster-of-Paris. Healing was uneventful. To correct the dropping down and in of the anterior part of the right foot the tibialis posticus, extensor proprius hallucis, and peroneus brevis were loosened and attached to the extensor longus digitorum. The distal end of the extensor proprius hallucis was attached to the tendon of the adjoining toe. On the left foot the peroneus brevis tendon was attached to the tibialis anticus, as were also the extensor tendons of the fourth and fifth toes. The distal ends of these tendons were sutured to the tendons of the second and third toes. After about twelve weeks the patient got around. Stout shoes were ordered to hold the feet firmly and a corset to support the trunk.

At present, one year after operating, she walks without cane or crutch. She has a marked paralytic eversion of the left foot with evident twist in the bones. An apparatus might be constructed to hold this foot inward, but it would have to extend from the pelvis to the foot and this she declines to wear. The hip is firm in place and movable functionally, and gives her no trouble.

CASE III.—Miss C., aged twenty years, had a congenital luxation of the left hip. She limped, but not excessively. About five years previously while walking the joint seemed to catch; since then it has ached and the pain has become so constant as to induce her to seek relief. She was operated on in conjunction with my colleague, Dr. Taylor. An anterior incision was made as in the other cases, and a place was cleared in a depression in front of the former

location and above the acetabulum, but no bone was removed. The limb was put up in plaster in abduction. At present, over a year after the operation, she walks excellently. There is no slipping of the head of the femur, and with a half inch added to the heel she is comfortable unless she unduly exerts herself, when she experiences a feeling of weakness.

These cases represent some of the worst in the domain of surgery. When a person is young, say under ten years of age, the dislocated hip can usually be replaced without a cutting procedure, but after that age attempts at reduction are apt to fail and other means have to be resorted to. Some surgeons do not regard an unreduced congenital luxation as being very serious. My experience has been different. In almost every case a greater or less amount of disability occurs in later life, in addition to the awkward gait and limited use of the affected joint inseparable from the affection. Only recently have I seen a woman, aged fifty-five years, again disabled by pains in the affected hip.

A dislocated hip is an unreliable hip that is certain to give rise to serious trouble in some portion of the patient's life. These congenital luxations can usually be reduced by the bloodless method up to about the age of ten years. Later in most of the cases it is impossible to restore the head to its socket and one is, therefore, forced to seek a new position for the head of the femur to rest in.

The treatment of congenital hip luxations has developed on two separate lines: the non-operative and the operative. It began about 1826 when Dupuytren brought forward his pelvic band. Corsets, jackets, and braces followed. The next advance was about in 1847 when Humbert, and especially Pravaz, of Lyons, advocated traction to bring the hip down and then pushing it over into place. This method was followed in a more or less modified form by Buckminster Brown, Bradford, Mikuliez, Max Schede, and others. While these traction methods were being developed, other surgeons were doing operations for the same condition.

Guerin was one of the first to cut the muscles subcutaneously; Brodhurst and others followed. Resection of the displaced head was given quite a thorough trial until, finally on January 29, 1888, Alfonso Poggi, of Bologna, replaced the head in a new acetabulum scooped out of the side of the ilium. Two years afterward the late Prof. Hoffa brought out his well-known method of detaching the muscles about the great trochanter and making a new acetabulum. In 1892 Lorenz modified Hoffa's procedure by making an incision from the anterior superior iliac spine downward and outward along the posterior edge of the tensor fascia femoris muscle. In 1895 Hoffa, having been convinced by Trendelenburg that loosening of the muscles attached to the greater trochanter was unnecessary, made an incision along the anterior edge of the greater trochanter

from its tip down. There have been practically no further developments of the open operative method since that date. While the bloody method was occupying the attention of the surgical world, Agostino Paci, of Pisa, was publishing his work by the bloodless method from 1888 to 1893. In 1894, at the International Congress in Rome, Lorenz and Hoffa came prepared to fight for their respective cutting operations, but Paci by this time had systematized his work. He gave his results on 23 cases of congenital luxations, besides 5 of pathological and old traumatic ones; also those of 10 other surgeons who had used his method; he submitted a specimen showing a perfect antemortem reposition; and finished by performing his bloodless method on a patient before the assembled surgeons. The effect might almost be described as ludicrous. No more was heard of cutting operations. Lorenz, in the following year, modified Paci's procedure and travelled far and wide exploiting it.

The majority of congenital luxations of the hip which one now sees can be replaced by the more or less modified bloodless method of Paci, but occasionally one sees a case which it is impossible so to reduce.

A person who has only one hip luxated, as in the third case, not infrequently has such an amount of disability as to demand relief. Should such a case not receive attention before say the age of ten or twelve years (it varies considerably), then the only other alternative is an open operation or they must bear their ills as best they can. If the case happens to be a luxation of both hips one will be apt to be much worse than the other. This was the condition in Case I. The right hip though luxated was still fairly fixed in its displaced position, the left, however, was so loose and caused such pain as absolutely to disable the patient and prevent her from earning her living. In the second case there was not only a luxation of both hips, but also the results of an infantile paralysis involving both lower extremities, as well as the muscles running from them to the trunk. Of course all the muscles were not paralyzed; some escaped, and by producing an artificial ankylosis in one foot (arthrodesis) and transplanting tendons in both feet the legs were made to acquire a certain degree of stability. The effect of the paralysis of the trunk muscles was partly counteracted by means of a firm corset. The left hip at first was luxated upward and anteriorly, the head being just below the anterior superior spine; later it has assumed a somewhat more posterior position. It was not, however, loose like the hip on the right side. The deplorable condition of this child with both hips luxated, together with the extensive paralysis, can be readily appreciated.

In 1897 I had operated on the left hip of this patient by Hoffa's original operation, but several years later it was found to have relapsed. In 1899 I showed before the Philadelphia Pediatric Society a child a little over five years of age, in which one hip had

been replaced by the bloodless and the other by the open operation, with success in each case.

In each of the 3 cases reported herewith the object was to fix the head of the femur in a new acetabulum so that in walking the weight



FIG. 1.—Cougé.



FIG. 2.—Burr.



FIG. 3.—The lever for lowering the head of the femur.

of the body would be borne by the bones and not by the soft parts, and this result was accomplished. In operating for this affection the incision I prefer is an anterior one straight down from the anterior superior spine. Hoffa's incision was along the anterior edge of the

greater trochanter, while that of Lorenz ran downward and backward from the anterior spine. The reason the extreme anterior incision is preferred is because of the better access which is obtained. The lateral incisions are difficult to separate in order to work properly. In the anterior incision, if more room is necessary, we can do as advised by Codivilla—separate the structures from the crest of the ilium from the spine back as far as desired. On the completion of the operation they are to be re-attached by means of sutures of chromic catgut.

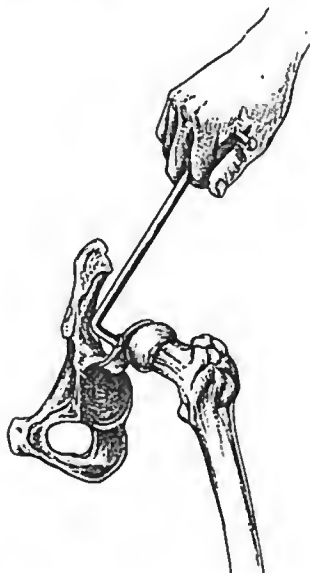


FIG. 4.—Method of replacing the head of the femur.

'To deepen the acetabulum I prefer the gouge and burr devised several years ago.¹ The gouge (Fig. 1) has a round edge and is sharply bevelled on its outer side. It cuts quickly and efficiently and with it the chips are easily removed. The burr (Fig. 2) is one inch in diameter and has ten cutting teeth around one-half of its circumference only. The cutting side is used to smooth and deepen the

¹ Trans. Amer. Orthop. Assoc., 1899, p. 331.

new acetabulum at any desired spot, while the smooth side presents toward the femoral head, the cartilage covering which thereby remains uninjured. In order to facilitate lowering the head a lever (Fig. 3) was devised, consisting of a rod bent at a right angle and having a square handle at one end and a small curved plate at the other. By loosening the screws that hold the plate on, the latter can be removed and reversed for use on the opposite hip. The smaller plate is 4.5 cm. (one and three-quarter inches) long and is intended for children; the longer is 6 cm. (two and three-eighth inches) long and is intended for adults. A firm, square handle is essential to manipulate the instrument properly. In using it one end of the plate is hooked under the edge of the acetabulum, while the other end rests on top of the femoral head. By depressing the lever the head slides along the shallow groove of the plate into the acetabulum (Fig. 4). A. Codivilla, of Bologna, used a straight lever for this purpose.² A stout steel hook is also sometimes of service in lowering the head of the bone. In order to dilate and stretch the capsule and adjacent fibrous structures, the uterine dilator of Pryor (Fig. 5) has been found of service. It is very strongly constructed.

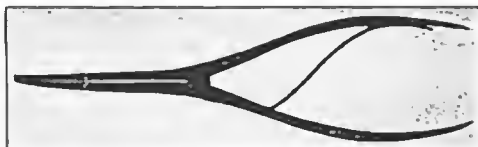


FIG. 5.—Uterine dilator of Pryor.

The incision used passes almost directly downward from the anterior superior spine of the ilium; this is between the anterior or inner edge of the tensor fasciæ femoris and sartorius muscles. I prefer this to the incision of Lorenz, which follows the posterior edge of the tensor fasciæ femoris and to that of Hoffa, who makes one along the anterior edge of the greater trochanter. One should avoid as far as possible injuring the branches of the deep circumflex artery and nerve as they cross the femur. Drainage may be used for twenty-four hours and the limb placed in a position of marked abduction in plaster-of-Paris. After eight weeks the plaster is to be removed, the limb brought down somewhat, and the patient allowed to go about on crutches.

Over two years have elapsed since the operation in the first case, and over a year in each of the other two cases, so that there is reason for hoping that the present results will be permanent. In order to avoid ankylosis it is in the highest degree desirable not to wound the cartilage on the head of the femur.

² Archives di ortopedia, 1902.

THE POSTOPERATIVE TREATMENT OF MALIGNANT DISEASE.

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THE fundamental principles upon which is based the postoperative treatment of malignant disease with the x -rays are: (1) That some of the cells of the malignant growth have been left in the tissues; and (2) that the x -rays have a selective destructive action upon such malignant cells in their location in the tissues. If the first of these two conditions be absent, no x -ray treatment is indicated, and if the second principle be not well founded, the treatment would be useless. The discussion of this subject must, of necessity, therefore, resolve itself into a discussion of these two principles. In this discussion I shall take as a type carcinoma of the mammary gland, and when no other growth is mentioned this growth is assumed to be the one referred to.

That some malignant cells are usually left in the tissues after an operation for the removal of a malignant growth is amply proved by the experience of every surgeon in the recurrences that take place. A recurrence is an evidence that some cells were left. Without the existence and the proliferation of these malignant cells a recurrent growth could not appear. So common is the recurrence that in every text-book description of malignant growths there is mentioned the classical symptom, "a tendency to recur after removal." The difficulty in removing every cell is a natural consequence of the essential character of a malignant growth. Such a tumor grows peripherally and sends out offshoots, penetrating the surrounding tissues. The invading cells find ready and easy progress along the lymphatics. The gross mass of the tumor affords no true index to the limits of the cells that are leading the advance. Since there are no means of telling the confines of the malignant cells, it is but natural that some cells should be left when the main body of the tumor is extirpated.

The tendency of the cells to advance beyond the main mass is dependent upon the richness of the surrounding tissues in lymphatics, the proliferative activity of the tumor cells, and the manipulation of the tumor, before or during the operation, which tends to dislodge cells and assist their advance in the lymphatics.

A due appreciation of the anatomy and histology of the tumor and of the surrounding parts has recently led to a great improvement in the surgeon's operative technique, increasing the chances of removing all the malignant cells. Such, for example, is the operation to remove the adjoining axillary lymph nodes, then the lymphatic channels, and finally the tumor of the breast, endeavoring to get the whole out en masse, but beginning with the lymph nodes.

When malignant cells have been carried beyond the confines of