The mechanical treatment of hip disease / Wm. Curtis Hugman.

THE MECHANICAL TREATMENT

OF

HIP DISEASE.

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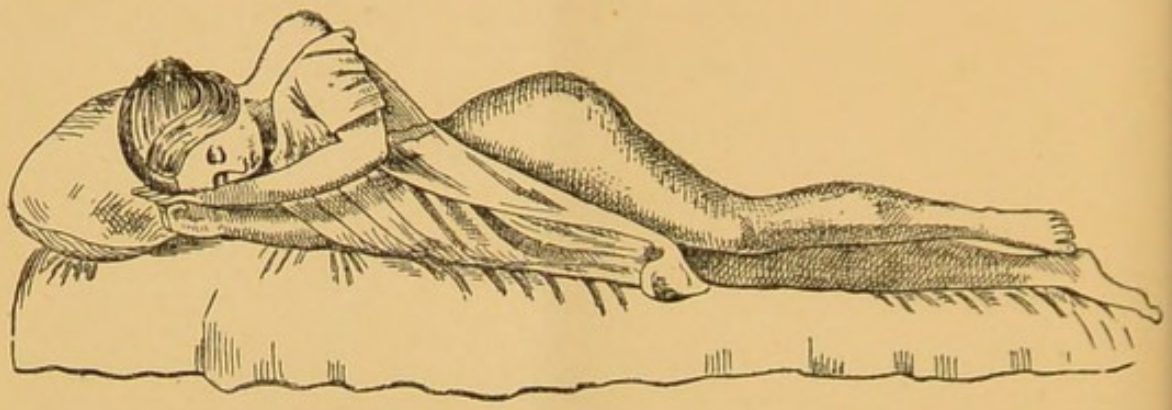

PLATE 1. (*See p.* 11.)

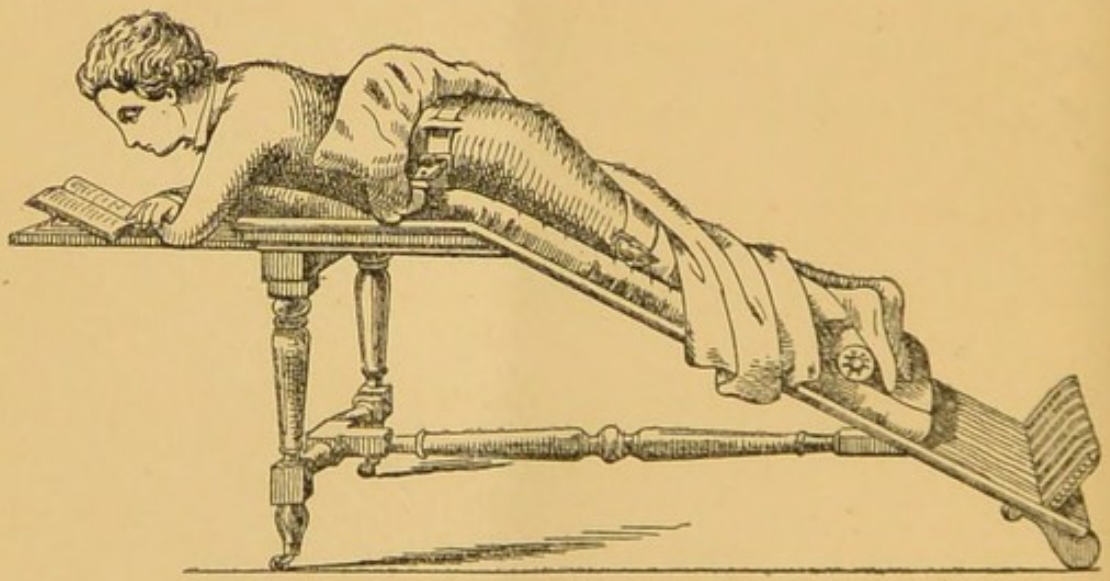

PLATE 2. (*See p.* 15.)

MECHANICAL TREATMENT

OF

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Twenty years since, when Surgeon to the Portland Road Hospital, in addition to the numerous cases of deformity arising from Spinal Disease and Curvature, Club-foot, &c., we were not unfrequently called upon to treat the well-known severe deformities consequent upon recent Hip Disease.

Seeing how great is the amount of lameness and distortion of body caused by this disease, in most instances incapacitating the patient from many of the ordinary

duties of after-life, I venture to think that any method of treatment which can be proved to be effectual, in even a fair per-centage of cases, must be looked upon as worthy of consideration.

Without entering upon the well-known symptoms, I may briefly state that few cases recover without the subsequent shortening of the affected limb, generally to the extent of from four to five inches; in addition to this the spinal column is more or less curved in the lumbar region and the pelvis tilted up on the affected side.

When the inflammation, and perhaps suppuration, have sufficiently subsided, the usual appliance resorted to is the high boot, or crutches, or both. I think I shall be able to show that in numerous instances these cases admit of a greater amount of relief than has hitherto been supposed.

Having for some years retired from the Hospital, but few means have been afforded me of following out the

mechanical treatment advocated in a little Treatise which I published in 1866. But a case recently sent to me by one of my old patients, who has recovered with the smallest amount of contraction and deformity, has forcibly recalled the subject to my mind.

When preparing my cases for publication in 1866, I searched in vain amongst the standard works on Practical Surgery for any precedent for the views which I then submitted; but latterly the subject appears to have attracted considerable attention, more especially amongst the American contributors to Surgical Pathology, and much has been written and said upon treatments based upon the same principle which I then advocated, namely, perfect rest of the affected limb, combined with mechanical extension. I allude especially to the papers by Dr. Cutter, of Woburn, Massachusets, in which he speaks of the apparatus employed by Drs. Davis and Sayere, of New York; also papers on the same subject in "The

Year Book of Medicine and Surgery," New Sydenham Society, and a Clinical Lecture by Dr. Sayere, containing drawings for producing extension and counter-extension.

It is not for the sake of claiming priority that I again bring forward my views, being only too glad to find them corroborated and confirmed by other independent and original thinkers; but, judging from my experience, I am satisfied that whatever splint or apparatus be employed, very little benefit can result, so long as the patient be allowed to rest in the ordinary positions which he naturally assumes in bed. To procure relief from pain, he invariably rests on the unaffected side, with the diseased limb drawn up towards the body, and no extension, according to my experience, is of much avail so long as this position is maintained.

Whatever be the pathological condition of the joint, whether the disease has its origin in the head of the

femur itself or in the surrounding structures, whether strumous or simply traumatic (on this subject much discrepancy of opinion prevails), the affected limb will become contracted, and hence the serious amount of subsequent deformity.

In the most severe cases, such as those depending on the worst forms of scrofula, doubtless the tendency is to cause destruction of the head of the femur as well as the margin of the acetabulum; the loss by ulceration of the round ligament allows the head of the bone to become luxated upon the broad surface of the ilium; abscesses burrow about the adjacent parts and muscular contraction completes the evil as far as deformity is concerned.

What I am anxious to point out is, that in a vast majority of instances the disease does not assume so formidable a shape, although all the well-known characteristics present themselves, namely, the shortening of the limb, the bulging rotundity of the hip on the affected

side, and as the case progresses probably abscesses, pointing either in the groin or the nates, leaving fistulous openings possibly discharging for many months. I firmly believe that the position assumed by the patient in bed has much to do with, and is the main cause of, the subsequent contraction and deformity in every case, and may to a great extent be obviated by the treatment I desire again to advocate.

He rests, or rather is obliged to support himself constantly on the sound side, between a prone and a supine position, sometimes relieving the upper part of the body by resting on the elbow, which not unfrequently becomes wrung and excoriated.

The unavoidable maintenance of this position, perhaps for many months together, induces a curve in the lumbar region of the spinal column, the convexity of which is towards the sound side; the pelvis assumes an oblique direction and becomes tilted upwards on the affected side.

In this stage of the disease the limb affected is not unfrequently found apparently as much as two or three inches shorter than the other, not from dislocation or even partial displacement of the head of the femur, but owing to the obliquity of the pelvis, and the curvature of the spinal column.

Plate 1 is a drawing taken of a patient in the condition above described, for the purpose of showing to what extent the body may become distorted, merely by remaining for any length of time in one position.

In this case the shortening of the extremity amounted to three inches and a half, and at first sight, previously to taking the measurements from the anterior superior spine of the ilium to the upper edge of the patella, I imagined that spontaneous dislocation of the head of the thigh-bone must have taken place.

Owing to the unavoidable necessity which the patient

feels of maintaining the recumbent position in the manner described, in order to relieve the affected side from pressure, if the disease should continue any length of time, and recovery take place without much destruction of the textures of the joint, it is not to be expected but that a considerable amount of lameness and distortion will remain. Under the usual methods of treatment hitherto employed, I am not aware that any available attempts have been made to obviate this tendency.

The limb which had been previously more or less *apparently* shortened, according to the duration of the disease and the position maintained by the patient, will now be *actually* shortened to the extent of perhaps three or four inches—the knee generally inclining to the sound side, or resting upon the inner part of the opposite thigh, and is sometimes so firmly fixed in that position that any attempt made to alter it causes excruciating agony to the patient—the foot is occasionally inverted, but generally

everted. Sometimes it happens that the diseased limb is completely thown over the other and locked in that manner, and if the patient be not worn out with hectic fever and long-continued suffering, he gradually recovers with permanent and most distressing lameness.

Dr. Sayere says:—"It appears the fashion now for every succeeding writer on Hip Disease to recommend a new splint, but it does not appear that one splint effects more than another; however, experience is necessary before an opinion can be formed as to the relative merits of each."

The treatment of advanced stages of the disease by section of the contracted muscles, is a matter in which his practice appears to differ chiefly from that usually adopted. There may be conditions of Hip Disease in which the muscles are the parts chiefly affected: that they become structurally altered, and incapable of elongation; that in such case their spasmodic contraction aggravates the pain

by pressing the inflamed articular surfaces together while extension applied to the limb aggravates the pain by stretching the diseased muscles.

This author appears to regard the disease in most instances as simply a local affection, not necessarily dependent on tuberculosis; rest, and the removal of irritation, he considers the principal points of treatment. With this view I entirely concur, and I am sure that cases I am about to describe will bear me out in this supposition.

The result of my past experience has led me to consider whether we are right in assuming that in almost every case of Hip Disease there need be this distressing termination. But here the great difficulty presents itself; for it will generally be found quite impossible to confine a child upon an ordinary couch or sofa for a sufficient length of time and with such precision, that there shall be no motion whatever at the hip joint. The natural activity and

restlessness of childhood make this almost an impracticable remedy in the early stages of chronic inflammation of the hip joint, on account of the absence of any considerable pain. In the acute form it may to a certain extent be practicable; but here again another evil arises, namely, the tendency which the patient has to assume a position in bed, which ultimately induces a great amount of distortion.

The principal object to be had in view in the treatment, is to obviate this tendency, and the plan I have pursued is extremely simple, and has proved efficacious. It consists in placing the patient in the prone position upon a couch or board suited to the purpose, after the manner adopted with much success at the Hospital, for lateral curvatures of the spine, and represented in Plate 2.

At first sight this posture might be thought an uncomfortable one; but I can confidently assert, that after

it has been maintained for a few hours, it is so extremely easy to the patient, that I have never in any instance felt the necessity of substituting any other, while the advantages to be gained by it I imagine are sufficiently obvious. In the first place, all pressure is removed from the affected part; the whole length of the extremity is rested upon a slightly inclined plane, and maintained in a semi-flexed direction, precisely as the patient is instinctively inclined to place the limb in order to obtain relief from pain—with this difference: that while lying in bed, he almost invariably rests the knee upon the opposite thigh. The undoubted reason for this position being so constantly assumed by the patient, is that the muscles situated around the hip-joint are thus maintained in a state intermediate between flexion and extension,—the large muscles which pass in front of the joint, and are in close apposition to it in that situation, not being called into action, exert less pressure against the capsular liga-

ment. The rectus muscle is also comparatively at rest; the small rotators are likewise in some degree relaxed in this position of the limb, and the Glutei muscles, which cover the joint posteriorly and externally, being also in a state of relaxation, cease to exert that indirect pressure which they produce when the body is erect, or when the lower limbs are extended.

Another great advantage is also gained by this position, namely the facility it affords for the application of such topical remedies as may be deemed necessary; and it will be seen by referring to Plate 2, that the free use of the arms and upper portion of the body is permitted, so that any sedentary amusement suitable to the age and inclinations of the patient may be followed, such as reading or drawing, for example—a very important consideration when the intention is to enforce quietude, particularly with children. I had a young lady some time ago under my care, who could manage to practise

the piano in this position, with tolerable facility, and who ultimately recovered with very slight lameness.

In the early stage of Hip Disease, more particularly in the less severe examples of it, I am convinced that perfect quietude for a sufficient length of time, with the joint confined in such a manner that there shall be no motion whatever, will in many cases be found sufficient to effect a cure, if aided by judicious topical and general remedial measures.

In order the more effectually to confine the joint, I have always employed my hip-shield, an efficacious kind of splint formed of gutta percha. For this purpose, a piece should be selected rather less than an eighth of an inch in thickness, and large enough to cover the nates, come round to the crest of the ilium in front, and extend downwards to the middle of the thigh. This must be cut into the proper form, and softened in hot water, allowed to cool so that it can be borne by the patient,

when it can be moulded with the greatest facility to take a perfect cast of the limb. This I have lined with chamois leather and covered with sheepskin. It can be made to fit perfectly close to the part by means of two straps, one being applied round the thigh, and the other round the hips, the buckles being made to lie upon the splint to avoid the pressure they would otherwise occasion.

Objections have been urged against the prone position upon two grounds; first, that it is not the one naturally assumed by invalids,—that the tendency of nearly all invalids, when confined to their beds by aggravated sickness, is to lie in the supine posture; second, that the play of the ribs and abdominal and thoracic muscles is restricted, and after a time the thorax itself is flattened, and the digestive, respiratory, and circulating functions are more or less impeded.

In answer to the first objection, I would only direct

the attention of any practitioner who has had opportunities of noticing the position of those who are bedridden in consequence of the disease under consideration, to the fact that in almost every case the tendency is partially to assume the prone position in bed, as represented in Plate 1, the object being to relieve the long-continued and painful pressure upon the sound side, it being impossible to rest supine in such a way as to avoid pressure upon the diseased hip; bed sores not being an uncommon consequence.

I remember attending a little girl for whom, before I saw her, a similar contrivance to the prone couch was occasionally had recourse to, by adjusting pillows under her chest and abdomen, and then propping the affected limb carefully in a semi-flexed direction; in this way she could obtain better rest and sleep. With regard to the second objection, I can only say after much experience, that I have never known such effects produced.

I here insert, by way of illustration, histories of three cases of which I have preserved notes.*

The first case—the one which so forcibly attracted my attention to the subject—occurred as long ago as 1857:

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* Should this *brochure* happen to fall into the hands of any of my surgical brethren willing to make trial of the treatment here proposed, an inexpensive couch can be seen and made by Mr. Stevens, surgical instrument maker, 159, Gower Street, London. I was much gratified to find the following remarks in the last edition of the late Sir. Wm. Fergusson's "System of Practical Surgery." "In certain instances of Disease of the Hip-joint, the surgeon may be baffled in keeping the limb in a satisfactory condition during the active state of the disease; but if he watches for an opportunity, he may possibly be enabled, by the judicious application of splints or other apparatus, so to straighten the limb, that while great and conspicuous deformity is done away, the member may be so disposed as to be of much use afterwards. I have seen many striking examples of this in my own practice, and some of those gentlemen in the profession who have devoted special attention to deformities and contractions, whether natural or the result of disease, have displayed both skill and ingenuity in restoring distorted parts to a more natural state. In regard to the hip, I may refer to an interesting treatise by Mr. W. C. Hugman, who has devoted much study to the subject."

Lucy Jelly, aged twelve years, the child of poor parents, living at Ham Common, near Richmond. The history given when admitted, was that she had been delicate from infancy. During the period of convalescence from measles, she began to complain of pain of the left hip, extending to the knee—always most severe at night. The hip became swollen and the limb drawn up. When she applied at the Hospital, the case was of about twelve months' standing. She had, during that time, been an in-patient at Guy's Hospital for three months; and, subsequently, at University College Hospital for two months. The disease had been during this time passing through its usual stages, but there had never been any appearance of matter forming about the joint When she became my patient, all the usual appearances of Hip Disease presented themselves. The affected limb being quite four inches shorter than the sound one, she could with difficulty

just touch the ground with the toe. Had it not been for the special request of a liberal subscriber to the funds of the Hospital who nominated the child, the case would probably have been refused admission, no prospect of relief being entertained by us.

The Prone Couch, as previously described, then much in use for Spinal Curvature, was resorted to for our little patient; emollient applications were used for about a month, the child resting day and night upon the Couch. By this time all pain had subsided, and extension, by means of the shot-bag, was cautiously commenced, and was increased gradually to the extent of six pounds. At the end of four mounths she was dismissed perfectly cured. I went to see the child about a year after her dismissal, and found that the cure remained perfect. My suspicion was that the appearances when she left the Hospital were deceptive, —that the length and position of the limb were only

improved by the temporary straightening of the spinal column, and lessening of the pelvic obliquity; but on making a careful examination, I found that all the movements of the joints were perfect in every respect. She told me that she frequently walked to Richmond, about two miles, when her mother was at work there, and always went the nearest way, over two stiles This surely was as good a test as I could possibly have, and I need not say I was immensely gratified at the result—never having seen or heard of a real cure in such a case without some amount of lameness and deformity.

The following case was recorded in my former treatise, and was also published in the *Lancet*:—

Miss K——, a young lady, eighteen years of age when placed under my care, presented all the usual characteristics of Hip Disease in an advanced stage, with shortening of the limb to the extent of about four inches. She dated the commencement of her illness

at three years prior to my seeing her, and told me that it began with "rheumatic" pains of the whole limb, which continued for some months, and finally became localised in the knee and hip joints. She had been obliged to maintain the recumbent position, resting on the unaffected side, for the last three years, and latterly, owing to the tendency of sores from pressure, had been provided with a water-bed. Her general health was not so much impaired as might have been expected from the long duration of the disease, and all active symptoms appeared to have subsided, although she could only get across her room with the help of her high boot and crutches. Examination of the limb showed by measurement, from the anterior spine of the ilium to the upper margin of the patella, a shortening of an inch and a-half, the nates being much flattened, and the whole limb smaller than the unaffected one. There was no indication of abscess about the joint. On attempting to

flex the thigh, the pelvis rotated with it to some extent, but there was evidently motion, although very restricted, at the hip-joint, notwithstanding the long duration of the disease.

I entertained but very slight hopes of benefiting such a case; but as she was to remain in London two or three months, I was desirous of making the attempt.

She was placed upon the Couch and soon became accustomed to the change of position, experiencing comfort from the removal of all pressure upon the affected hip. I commenced making extension by means of a strap round the ankle, to which a weight of seven pounds was attached. At the end of a week no appreciable effect was produced beyond a slight appearance of elongation owing to the removal of the pelvic obliquity. The measurement from the ilium to the patella showed no alteration The weight was increased to fifteen pounds, and afterwards to twenty

pounds. No inconvenience was experienced from the treatment beyond a slight continued pain at the joint, and stiffness of the limb caused by the traction made upon it.

While pursuing this treatment she was enabled to pass her time in reading and embroidery work, which is the great advantage the Prone Couch affords, by allowing the free use of the arms.

When I visited her on the twenty-eighth day of this treatment, I heard that shortly before my arrival the limb had suddenly elongated to the full extent, she was suffering much pain, and had of her own accord removed the weight. When she touched the ground with her toe it produced exquisite pain of the hip.

A gutta percha shield was then moulded to the part and kept constantly applied. The use of the Couch was continued for two months, after which she was allowed to walk with the support of her crutches.

She has now perfectly recovered the use of her limb, and no subsequent contraction has taken place, a slight halt in the walk is all that remains.

Master Charles A. Clifton, aged 11 years. He is very tall for his age, his figure slim and delicate, his general health much impaired by long continued suffering. The right leg is four inches shorter than the left, he cannot bear the slightest pressure anywhere over the right hip. The rotator muscles of the thigh on that side are extremely tense, and the slightest touch in the groin gives exquisite pain. The limb cannot be moved in any direction. The spinal column is considerably inclined to the left side in the lumbar region, there is a deep seated swelling behind the great trochanter and general fulness of the whole hip.

In answer to recent inquiries respecting the early symptoms of this case, I have been favoured with the following account:—

"*Clifton Wood.*

"My son had been for twelve months in delicate health previous to his accident, caused by a slip down stairs, which produced what was considered a rupture. A second similar accident occurred, when I discovered that he walked lame, and appeared to be ill and in pain. He was ordered to lie on his back, on a board, six hours daily. As he lay, I observed day by day that his leg rapidly shortened, and his knee gradually drew up. His health became worse and worse, and he was getting just that sad look deformed children usually have. * * * * * *

"I can only say with thankfulness, that our child's is a perfect and very unexpected cure, more especially as no hope was held out after consultation with two of your celebrated surgeons, and as he has now been running about more than twelve months, we have ceased to dread a return of this formidable disease."

This case, when it first came under my care, presented all the symptoms of Hip Disease in the second stage, very strongly marked; and there could be no doubt that it was rapidly advancing, as the limb had shortened four inches within two months, and although the presence of matter around the joint was doubtful, I quite expected an abscess would come forward. In this case there was neither inversion nor eversion of the foot, the contraction was therefore owing principally to the curved state of the spinal column, the obliquity of the pelvis, and probably also to some assorption of the margin of the acetabulum.

The same treatment as has been previously pointed out was pursued in this case; considerable difficulty was experienced in placing him properly on the couch in the first instance, on account of the confined state of flexion of the joint, the hip being locked nearly at a right angle with the body large linseed-meal

poultices made with decoction of poppies were constantly applied, tonic and alterative medicines were prescribed, and I had the satisfaction, after two months' steady perseverance in this plan, of allowing him to return home, much relieved in every respect. The limb had elongated fully two inches, all tenderness around the joint had subsided, his general health had improved immensely, and considering the unpromising aspect of the case, he was relieved quite beyond my expectations. He continued to progress satisfactorily until the following July, when I received intelligence that a large swelling was making its appearance on the upper part of the thigh; this proved to be an abscess, which I punctured the following month, and it discharged about a pint of pus; the depending position of the limb, as in former cases, had allowed the matter to gravitate some distance from the joint, and no ill consequences arose.

The length and direction of the limb were at this time perfectly natural. By my advice, he was then removed to the sea-side, where he continued about three months, and returned home in the very satisfactory state described in his mother's letter.

I must be allowed to add in conclusion, that so little was the irksomeness of his confinement upon the Couch felt, that his studies were pursued during the greater part of the time occupied by the treatment.

55, Guilford Street,
Russell Square.

PRINTED BY GEORGE WILSON, BROAD YARD, TURNMILL STREET, LONDON, E.C.