The pendent limb in the treatment of joint diseases of the lower extremity / by A.B. Judson.

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THE PENDENT LIMB IN THE TREATMENT OF JOINT DISEASES OF THE LOWER EXTREMITY.

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The following figures, drawn from the last annual reports of two orthopedic institutions,[1] illustrate an interesting fact, contain an important pathological doctrine, and enforce a practical lesson:

Cases of Articular Osteitis.

Hip,	558;	Knee,	207;	Ankle,	64 = 829.
Shoulder,	7;	Elbow,	16;	Wrist,	3 = 26.

It appears that in a single year 829 cases of disease occurred in the large joints of the lower extremity, while 26 cases occurred in corresponding joints of the upper extremity.

That this disproportion exists is a most interesting fact, one that has been under our eyes year after year and only lately properly recognized and emphasized. The pathological doctrine embodied is, that inflammation of the bony structures of a joint is readily and spontaneously resolved when favorably situated, as in the upper extremity, where the part affected is absolutely exempt from the violence which falls on the structures of the lower limbs in standing and in locomotion. The practical lesson is the precept that in the very earliest incipiency of disease of any of the joints of the lower extremity the weight of the body should be taken off from the affected limb until the inflammation is resolved, though it may take months and years. By the arts of mechanical surgery the affected member should be made constantly pendent and as little liable to strike the ground or receive the corporal weight as the arm, which swings free in locomotion and has never known the burden of the weight of the body.

What application of mechanical or orthopedic surgery can be

[1] The New York Hospital for the Ruptured and Crippled, and the New York Orthopedic Dispensary and Hospital.

best made for this purpose? Crutches and a high sole on the well foot are a ready solution of the problem; but consider the difficulties, the chief of which is found in the fact that the patient, usually a child, will lay crutches aside, and no amount of persuasion or discipline can keep them in use during the long periods in which the general health and freedom from pain obscure the serious nature of the affection.

This difficulty disappears with the use of the simple device known as the perineal or ischiatic crutch, which retains its place without the aid of the hands and under the clothing. That its use leaves the hands and arms free and that it is inconspicuous give it a great advantage over a pair of crutches, but its chief superiority lies in the fact that by its use the weight of the body falls on the ischiatic tuberosity, a part of the anatomy which is accustomed to bearing the weight in the ordinary sitting posture. The anatomical features of the axilla are but little adapted for sustaining such a weight. The loose joint which the shoulder makes with the trunk, and the pressure, in just the wrong place of the brachial and axillary vessels and nerves, make the use of a pair of crutches sometimes painful and generally awkward.

When we consider, on the other hand, the solidity of the union between the os innominatum and the vertebral column, the basic position of the os innominatum in the skeleton of the trunk, and the fact that it is designed to bear, and most of the time does bear, the weight of the greater part of the body in sitting, standing, walking, and running, it becomes clear that here, if anywhere, should be applied an artificial support for the relief of the disabled lower extremity.

The ischiatic crutch, described[1] and exhibited on previous occasions, with its perineal strap applied to the tuberosity and ramus of the ischium, is absolutely simple in its construction and fully insures a pendent limb, whether the joint to be protected is the hip, knee, or ankle.

It does not interfere with the ordinary activities and avocations of childhood, and it is practically easy with this instrument to obey the precept above referred to in regard to making the limb pendent from the beginning to the resolution of articular osteitis.

Two or three practical points should be attended to. The upright should be strong and light, and these qualities may be secured by

[1] The Medical Record, July 2, 1881, June 25, 1887.

a *single* perineal strap, which brings the weight of the body more directly over the supporting column which is the upright portion of the apparatus. The pelvic band should be worn at a level below the anterior iliac spine and above the trochanter, a position which may be maintained if a short perineal strap be used.

At the lower end of the apparatus it will be noticed that there is a wide departure from the ordinary arrangement of feet and shoes.

On the affected side the splint and not the foot reaches the ground. I have found the method of shoeing the splint which is shown in the cut both convenient and economical. If sole leather of the very best quality is used it lasts a long time and the expense is small. On the well side the necessity of a high sole has been the cause of vexation and expense, both of which I have partially avoided by the use of a wooden sole, or *sabot*, constructed and fastened on with screws in the manner shown in the cut.