AMBULATORY APPARATUS

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Mrs. La Du, Superintendents of the Institutions, Ladies and Gentlemen: The patient in infantile paralysis has now passed through the stages of treatment explained by Drs. Chatterton and Williamson, and we come to the time when the patient has made either a complete recovery, a partial recovery, or shown no improvement at all. At this period, after he has had all treatment that you have just heard about, the patient should be gotten up out of bed; he should be up and about.

The first thing required is a complete muscle test, to see just where we stand with regard to absent or weak muscles. Weak muscles would tend to cause more deformity; such as, curvature of the spine, hyperextension of the knee, valgus deformities of the foot. To get a patient up out of bed, and have him walking about without support, would be adding insult to injury. In case he had weak muscles or muscles lacking all power, so we have supports and braces for the lower extremities, spinal braces and leather corsets for the back.

These braces are used to prevent malposition, to correct deformity, to enable patients to walk who cannot walk without support, and to enable patients who can walk somewhat to walk better. There are very few cases of infantile paralysis that cannot be made to walk. They may have complete paralysis, as long as they have arms with which they can control crutches, we are able to get them about.

Braces need constant readjustment and repair; otherwise they do no good. This little fellow is wearing a brace which supports the foot and keeps it from dropping down. It is an outside type of brace, by which we mean a brace attached to the shoe with an inside "T" strap. The muscles on the inside of this boy's foot are much weaker than those on the outside and the ankle turns in.

As soon as this boy is old enough, probably two or three years from now, he will have arrived at the age of operation. What we will do at that time we do not know at present, because some of the muscles which are absent now may return to the support of the foot.

Case 1. We have a little fellow here, six years old. He has a paralysis of the muscles of the foot. If this boy were allowed to go without any support, he would probably go home, and the chances are the foot would become deformed. For this reason these little fellows wear braces.

Braces are used with the younger children to prevent deformities which cannot be treated by surgery while the patient is too young to be operated upon.

Case 2. The next patient is a boy nine years of age. He had infantile paralysis in 1930. There is involvement of the spine and of the lower extremities. See what he can do without his apparatus. His arms are exceptionally weak; his back may be considered flail; but we know he has a little power with which to bring the hips forward. He cannot stand alone. He has a dangling left arm. His right arm is good. The nurses will put on his braces and we will see how he gets along with them.

Sometime in the future this boy will probably have some surgical work done. At present we do not know exactly what it will be. We may be able to do something to his back, as his back muscles are extremely weak. By holding the spine rigid, he is able to walk nicely with crutches and is able to walk some without them.

(This boy demonstrated how he walks with crutches without braces. He will return later to show how he walks with braces.)

Case 3. Here is a little one who had infantile paralysis in 1930. She had involvement of both lower extremities. Both legs were paralyzed.

At the present time we find that the left leg is very good, but we feel that she should wear a brace on this leg also, in order to prevent deformity, such as back-bending of the knee.

With these young patients we very seldom use the so-called lock joint brace, which has a self-locking spring catch which allows the patient to bend his knee when sitting down. The little ones get along better with no joint at the knee. They cannot work it very well.

This child is wearing a right-angle stop joint brace. This is the type of ankle where the power in the front part of the foot is absent or extremely weak.

Case 4. This boy is twenty-three years old. He had infantile paralysis in 1935. I do not know whether he will demonstrate for us or not.

This patient has practically no power in his left leg. His right arm is paralyzed. He has not much power in his right foot.

We will try to have him walk with his crutches. He was walking quite well about two months ago, but at that time an operation was performed in order to stabilize the right foot. For this reason he has not been practicing very much lately. He does have some power in the right foot, although very little. He has practically a complete paralysis of his lower extremities.

This boy will demonstrate as well as he can what we call the tripod method of walking. With the tripod method the crutches are placed apart, slanting well forward, their lower ends forming the two anterior...
points of the tripod. The upper part of the patient’s body forms the third point of the tripod. Where a patient has severe or complete leg paralysis, he should begin to walk in this tripod fashion after he has sufficiently acquired his sense of balance. (Roy demonstrates.) You will note how he does this. He bounces one crutch forward a few inches, then the other, then he jerks his feet forward a few inches by a body movement. He bears down with his hands on the crutch bars. This tripod manner of walking gives the patient a shuffling type of gait.

In about a month or six weeks, this boy will be able to walk up and down the hall and to the physiotherapy room unassisted.

For the older patients we have the lock joint at the knee. It is much more convenient for them in sitting down. To be able to sit down and get their feet out of the way the lock joint is absolutely essential. Otherwise, when they set down the leg would stick out straight. If this joint did not lock, the leg would drop forward and the patient would invariably fall.

Case 5. Here is a boy who had infantile paralysis in 1925. He has a spinal involvement; his back is extremely weak. He has practically no muscles in the abdomen. There is involvement of the left leg. The rectus femoris of the quadriceps extensor muscle, one in front of the thigh which holds the leg out straight, is extremely weak.

In the house, by being extremely careful, this boy gets along nicely. Outdoors, if at any time he does not get the knee joint locked, if it comes forward beyond a straight line, he will fall. He is wearing a long leg brace with a lock joint. He can lock the joint without much trouble.

The abdomen is supported here by an abdominal support and he is wearing a back brace. In cases where the spine is about normal, the abdominal support can be applied nicely without the back brace. When this boy’s brace is off, his back will sag over to the left side and his abdomen will push out to the left.

Case 6. This boy is not an anterior poliomyelitis case, but we have this type of brace in such cases.

We find that this type of brace, the Taylor brace, with two steel uprights, can be adjusted nicely and holds the patient in good position. This boy at one time was bent forward. By adjustment of the Taylor brace we got him up in a very nice, satisfactory position.

The braces are practically all made over plaster-of-Paris models. A brace, in order to be satisfactory and not uncomfortable, as relatively as a brace can be comfortable, requires perhaps a week or ten days for the making.

(Here is that little fellow with his leather corset and his leg braces on. You will see he does very well.)

Making braces over plaster-of-Paris models gives you the exact size and shape desired. It is easy to make any desired change in the plaster cast. In that way you can correct the deformity very nicely.