Support for the Drooping Head

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Degenerative disease of the central nervous system occasionally gives rise to flacid paralysis of the extensor muscles of the neck. This paper describes a device for supporting the head that was developed for a 73-year-old man with cervical muscle weakness, a result of amyotrophic lateral sclerosis.

The weakness became apparent 14 months after the onset of the disease and was noted to be fatigue related. It became progressively more severe in the latter part of the day. As his ability to hold his head erect declined, choking and difficulty in swallowing developed. Talking with friends and table activities were also adversely affected because of a loss of eye contact.

A soft cervical collar was tried with some success. However, the tightness necessary to hold the head erect interfered with speaking and swallowing. Subsequently, a head gear of muslin straps and Velcro fasteners with attached weight was developed by the family physician, the patient’s son, and friends.

The following materials were used: one 3-foot wooden ski tip; two U-shaped metal clamps; one headband; one 2-inch nylon lacing loop; one stationary pulley, 3 inches in diameter; one swivel-mounted pulley, 1 inch in diameter; one nylon cord, 36 inches; 1 plastic bottle, 1 pint; 1 hook screwed into the top of a plastic bottle; 3 pounds of buckshot.

The basic structural piece of this device is the wooden ski. A suitable slot is cut in the tip and the stationary pulley mounted. The ski is installed vertically in the midline of the back of the wheelchair by use of U-shaped metal clamps with wing nuts, which fasten the ski to the fabric of the back of the chair. The smaller swivel pulley is attached to the midline of the ski approximately 6 inches below the larger pulley. This distance will vary with each patient since it should be in line with the largest dimension of the head.

The headband is made of muslin straps. The major strap is circumferential, and supporting straps cross the top of the head in transverse and anterior-posterior directions. The circumferential strap fastens with a 4-inch strip of Velcro, and the rest of the strap is lined with art foam for comfort and to prevent slipping. A 2-inch nylon lacing loop is sewn into the headband where it fastens over the occiput to provide an attachment for the weight.

A 36-inch traction line of nylon cord is attached to the nylon loop of the headband, threaded through the smaller swivel pulley, up over the larger pulley, which then hangs down in back where it is attached to a weight. A pint plastic bottle with a small hook screwed into the top was used. Lead shot is a convenient weight. The amount necessary will vary. In this case, approximately 909 grams (2 pounds) were used. This weight can be easily increased or decreased as required by the changing status of the patient’s muscular strength throughout the day.

The apparatus allowed the patient to sit upright for several hours at a time and permitted full range of motion. The most important result was marked improvement in his ability to swallow and in maintaining his ability to participate in conversation and in table activities. This apparatus contributed significantly to his comfort and participation in activities for six months.