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Taping for Positioning and Stabilizing the Ankle of Patients with Hemiparesis

Suggestion from the Field

RICHARD W. BOHANNON

Patients with hemiparesis frequently demonstrate substantial gait impairments. These impairments are sometimes the result of a lack of normal control of the affected ankle. This compromised control is frequently dealt with by applying an ankle-foot orthosis (AFO); the plastic type is most often prescribed. During gait, these AFOs can provide the involved lower extremities with both increased clearance during the swing phase and increased stability during the stance phase.

PROBLEM

Although the standard AFO is beneficial, an alternative is sometimes needed; for example, when an appropriate AFO is not available or when the anticipated duration of need or cost of a standard AFO make it impractical. An alternative is also of value when a patient walks without shoes, because most AFOs work only in conjunction with shoes.

SOLUTION

Ankle taping, as an alternative to the standard AFO, can be used in such cases as mentioned above. Adhesive tape has long been used to provide external support for the ankles of athletes. A number of different taping procedures have been advocated, depending on the type of support required. Though patients with hemiparesis may not have the soft tissue injuries so commonly associated with the need for taping, they can gain ankle stability and a more advantageous ankle position through the adaptation of some of the methods of athletic taping. Although some clinicians may already be using adhesive tape for positioning and stabilizing the ankles of patients with hemiparesis, there is a lack of published information about the procedure. For this reason and because of the effectiveness of the procedure with my patients, I offer the following description, which is illustrated in Figure 1. Ankle taping requires about 40 cents worth of 1.5- or 2-in adhesive tape. The “temporary brace” constructed with the tape can be worn inside the shoe or without the shoe.

Initially, a tape anchor is placed above the malleoli of the affected lower extremity. This anchor is applied securely but not tightly around the extremity. Five or six tape straps are started from the anchor in the area of the medial ankle. They are applied around the bottom and up the lateral side of the foot. The ends of the first of these straps are attached to the lateral ankle. Subsequent straps are applied across the bottom of the foot progressively more distally and are attached progressively more anteriorly and medially on the ankle. If preventing inversion is the primary goal of taping, the straps need not be applied forward.

Fig. 1. Procedure for taping the ankle of a patient with hemiparesis. The larger drawing of each pair is of the lateral side of the foot. The smaller drawing is the mirror image of the medial side.

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beyond the base of the fifth metatarsal. If maintaining dorsiflexion is the major goal of taping, applying tape distal to the metatarsal heads provides suitable leverage for that purpose.

At times, the basic strapping does not provide for a “balanced” dorsiflexion. To alleviate dorsiflexion in eversion, a single strap of tape can be applied to the lateral surface of the foot at about the fifth metatarsal head and drawn across the plantar surface of the foot, up the medial foot, and diagonally over the dorsal surface. It is then attached to the lateral side of the ankle.

Figure 2 shows a subject performing maximal ankle plantar flexion and inversion and illustrates the capacity of the procedure to limit these movements.

DISCUSSION

I have used adhesive tape successfully and without complication on more than 50 patients with hemiparesis over the past four years. The temporary bracing afforded by the tape has been particularly advantageous in a home health setting where other methods of bracing have not been available. Taping is preferable to elastic wraps, which may give or slip, and to other taping procedures that may require more time to apply.

Care must be taken when using the procedure, however. Adequate circulation must be maintained in the taped foot. Even though adequate arterial and venous flow was evident in the feet of my patients that were taped as described, I never left the adhesive tape on for more than 30 minutes at a time. Also, effects of adhesive tape on the skin of patients should be monitored. Adhesive tape should be used after appropriate skin preparation and should not be applied to individuals with a history of sensitivity to adhesive tape. If the patient has decreased sensation in his foot that is to be taped, the skin should be monitored carefully, particularly over bony prominences and areas of greatest tape pressure.

When the proper precautions are exercised, taping with adhesive tape can serve as a practical, temporary method of dealing with decreased ankle control in patients with hemiparesis.

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