

USEFUL APPLIANCES IN SPASTIC PATIENTS

FOLLOWING SPINAL CORD INJURY

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It is common knowledge today that it is essential to avoid such complications as decubiti of the elbows, knees, heels, etc., lest the rehabilitation of patients with spasticity following spinal cord injury is jeopardised. These complications cause not only deterioration of the general physical condition, but also psychic discouragement with which to cope is still more difficult. To prevent pressure from bony prominences the well-known rubber doughnuts, pads, cushions, pillows and sheepskins have been frequently used, especially to protect the sacrum, trochanters and heels. Of course, other measures are equally important: frequent turning, maintenance of general nutrition and the prevention or correction of anaemia, hypoproteinaemia, genito-urinary infections and gastro-intestinal conditions (Guttmann, 1945, 1946, 1947, 1953, 1954, 1955, 1957; Munro, 1945, 1946, 1947, 1948, 1950, 1956).

The following few useful protective devices are presented for treatment as well as prevention:

1. When one of the rare ulcers has formed at the elbow of a tetraplegic, a splint is useful as illustrated in Figure 1. It allows exposure of the ulcer to air and local treatment as desired. Cautious tightening of the fastening straps prevents interference with the circulation in the arm or forearm. Additional padding around the forearm and arm may be necessary in individual cases. Figures 2 and 3 show the ulcer before and after treatment.

2. A small type of sponge rubber doughnut for protection of the knee is illustrated in Figure 4. This appliance does not pretend to replace or to substitute proper treatment of ulcers of the lower extremities. It is merely a preventive appliance.

3. Special protective gloves, 'wheelchair pushing gloves', for tetraplegic patients not only protect the anaesthetic portions of the patient's hands, but they are, in addition, a kinetic aid in pushing the hand-rims of the wheelchair.

4. A sheepskin placed over the bed sheet under the lower portion of the trunk provides good preventive padding against ulcers in the area of the sacrum and greater trochanters (Ebel, 1961).

5. Various cushions are used in the wheelchair for prevention of ischial ulcers. Most popular at this and other Veterans Administration centres in the United States is a four-inch thick sponge rubber cushion. Sponge rubber padding is also used in the back upholstery of the wheelchair. By placing two strips of sponge rubber about four or five inches wide and leaving a space about two inches wide

down the centre of the back upholstery, pressure is reduced over the lumbar spine and sacral area (Nyquist & Bors, 1960).

6. Wheelchair pedals are hard, and the metal can become quite cold. For patients with ulcerations of the feet or heels, or for patients with impaired circulation in the feet, a piece of firm sponge rubber, about 1 cm. thick, is glued to the top surface of the pedal for insulation and protection. The black sponge rubber is best suited for that purpose as used for padding between carpets and floors. This sponge rubber is attached to the metal pedal by means of a synthetic glue 'Barge' used in the shoe industry and obtainable from Barge Cement Manufacturing Company, 100 Jacksonville Road, Towaco, New Jersey.

7. Sheepskin booties (fig. 5) have been found to be exceptionally effective for the prevention of ulcers at the ankles and heels which can easily occur from sheet burns caused by spasticity.

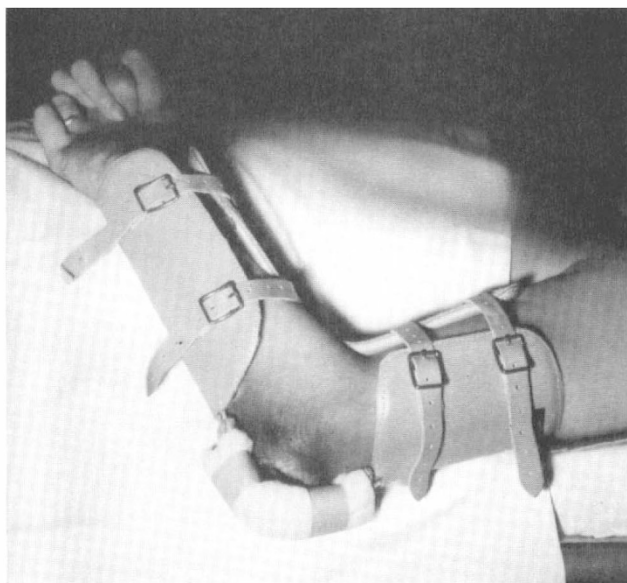


FIG. 1

This splint immobilises the elbow joint sufficiently to promote healing and to permit exposure to air and local treatment. The posterior portion of the brace at the elbow is curved allowing about 2 cm. between the ulcer and the bar. The forearm and arm cuffs vary in length and size according to the size of forearm and arm. The solid piece which is fitted to the medial aspect of the elbow is about 15 cm. in length above and below the joint. All inside surfaces are padded with sponge rubber 2 cm. thick and covered with Vibretta, a synthetic horsehide, which stretches neatly over the sponge rubber and permits easy cleansing. The outside surfaces are covered with elk or horsehide leather. Two straps with buckles above and below the elbow permit proper fastening.



FIG. 2

Ulcer of elbow, 1 October 1963. Figure 2 shows the ulcer at start of treatment on 1 October 1963 and Figure 3 shows the result of treatment on 13 December 1963. At the time of this writing, 15 January 1964, the area is completely healed. It goes without saying that preventive care must be instituted to avoid recurrence.

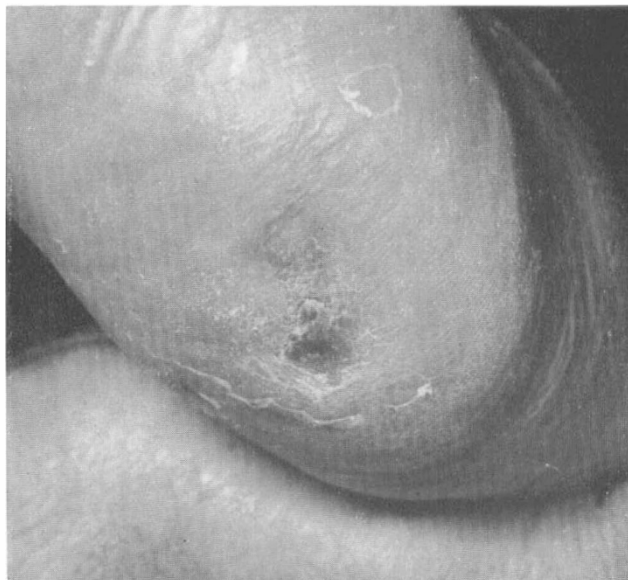


FIG. 3

Same elbow ulcer on 13 December 1963.

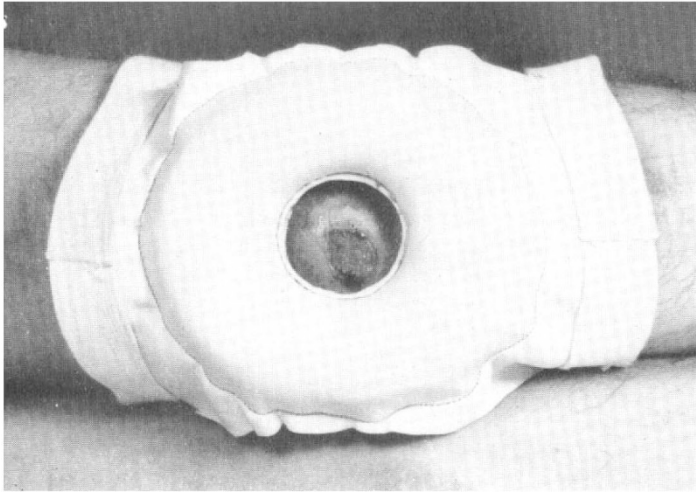


FIG. 4

A sponge rubber doughnut is covered and lined with synthetic horsehide, Vibretta, which can be easily cleansed with detergents, soap, water, alcohol or phenol solution. Elastic tape with 'Velcro' fasteners permits variable tension on thigh and leg.

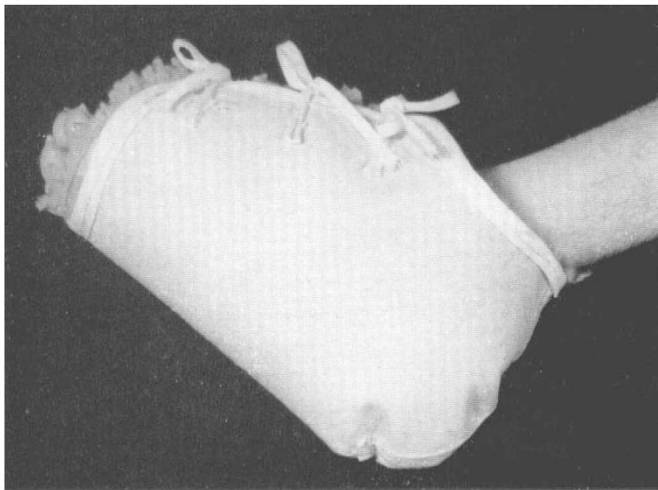


FIG. 5

The sheepskin bootie may be placed next to the skin or over a stocking. It is held in place by a light canvas covering which has three tie strings. The canvas may extend up the leg and a fourth tie string holds it in place in patients with more severe spasticity.

SUMMARY

Seven remedial measures for prophylaxis and treatment of decubiti in patients with spasticity have been presented:

1. An elbow splint.
2. A protective knee doughnut.
3. 'Wheelchair pushing gloves' for quadriplegics.
4. Use of a sheepskin on the bed under the lower portion of the trunk.
5. Wheelchair cushions.
6. Leg and foot protection in wheelchairs.
7. Sheepskin booties.

RÉSUMÉ

Sept façons d'effectuer la prévention et le traitement des escarres chez les sujets atteints spasticité sont présentés: un appareillage pour le coude, une capsule pour le genou, des gants spéciaux pour les tétraplégiques, l'utilisation d'une peau de mouton sur le lit au niveau de la partie inférieure du tronc, des coussins pour les fauteuils roulants, des appareillages pour la protection des pieds et jambes sur les chaises roulantes, et enfin des bottillons en peau de mouton.

ZUSAMMENFASSUNG

Sieben Massnahmen für die Prophylaxe und Behandlung von Druckgeschwüren bei Patienten mit Spastizität werden beschrieben:

- (1) Eine Ellenbogenschiene.
- (2) Eine Kneeschutzkapsel.
- (3) Handschuhe für Tetraplegiker zur Fortbewegung des Rollstuhls.
- (4) Gebrauch von Schafshaut im Bett für den unteren Rumpfabschnitt.
- (5) Rollstuhlkissen.
- (6) Bein- und Fussprotektion im Rollstuhl.
- (7) Schafshautschuhe.

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