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TECHNICAL NOTE

SPLINTAGE FOR THE SPINAL CORD INJURY PATIENT

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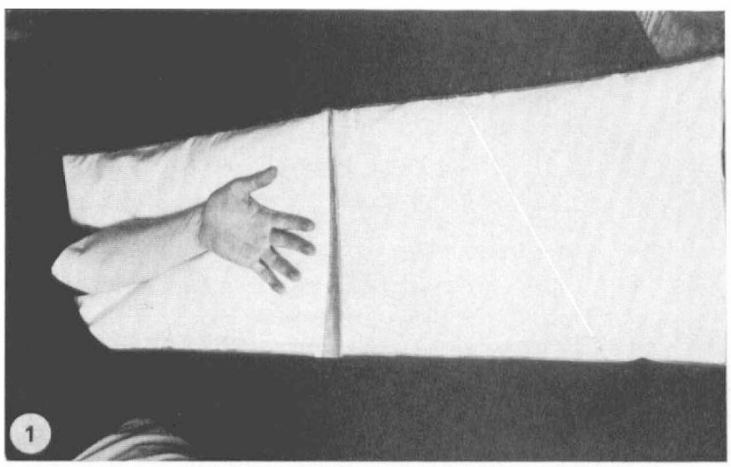
Key words: Spinal cord injury; Limb splintage.

Two vacuum splint designs are described for clinical application for spinal cord injured patients.



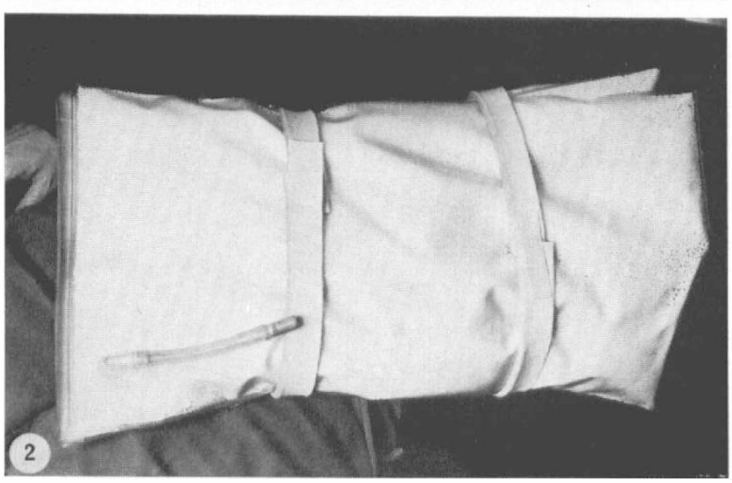


FIG. 1
Arm vacuum splint laid open to reveal the two segments.

FIG. 2
Arm splint fastened and evacuated in use; note the valves at the distal upper end.

The first application involves the prevention of contracture of the upper limb by keeping the arm and hand in extension, particularly during sleep. Small polystyrene beads of 2 mm diameter are encapsulated in a polyvinylchloride (PVC) envelope which when evacuated becomes rigid, providing support along the whole of its skin-contacting surface and splintage along its length. The splint, which is in two segments joined at the middle (Fig. 1), is laid underneath the inner aspect of the arm, then reflected at the join over the outside of the arm, and fastened with foam straps. The air is evacuated through non-return screw valves near the join, on both segments, until the splint becomes rigid (Fig. 2).

The second application of the vacuum splintage is to prevent the heel contacting the bed and causing a pressure sore underneath the heel. This splint is in three sections. Two sections are of similar construction to the arm splint, that is PVC envelopes containing small polystyrene beads of the same diameter. The two beaded sections are joined by a third section, approximately 12 cm wide, which does not contain the beads and is not evacuated (Fig. 3). With the leg supported laterally and underneath by the evacuated sections (and the foot held in the upright position by the third section), the heel is raised above the bed (Fig 4).

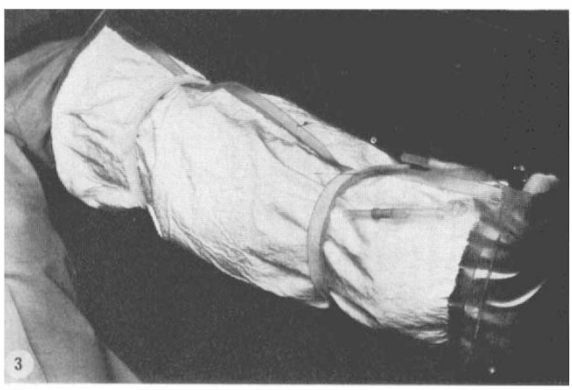


FIG. 3

FIG. 4

Leg vacuum splint laid open to show the two valves and the central foot support section. The ruler laid on the central section is 12 inches long.