

## Technical Note:

# A Cervical Orthosis Modification

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Recommending or prescribing the best possible cervical orthosis for a patient whose cervical vertebrae require support is a difficult task for an orthotist or physician.

In recent years the plastazote™ (Philadelphia) cervical orthosis has become a highly prescribed device for several reasons (Figure 1). Most importantly, the orthosis limits flexion and extension of the cervical spine as well as rotation between C-3 and C-7 and patients find it reasonably comfortable and accept wearing it. This is due, to some extent, to the fact that the low temperature, and easily moldable plastazote™ conforms in time to the patient's contours. The better distribution of pressure and comfort for the patient may provide more relaxation of the para-cervical spinal muscles.

Secondly, the Philadelphia cervical orthosis is relatively inexpensive compared to more rigid appliances. Thus, it is less costly to replace when it becomes contaminated or spoiled beyond cleansing.

A third important feature is the ease of selecting and donning the device. Only two measurements, the length of the neck and the circumference of the neck are required. The orthotist is able to provide the

item to the patient readily, and it is not necessary to maintain a large, costly inventory.

In the Neurosurgery Intensive Care Unit of the University of Kansas' Bell Memorial Hospital, this cervical orthosis has become the orthosis of choice for treating head trauma patients. The posterior half of the collar can be slipped behind the patient's supported head and neck with a minimal amount of need to move the patient. The anterior half is easily put into place to complete the fitting.

Since a number of ICU patients have required a tracheotomy it became necessary to modify the Philadelphia cervical orthosis. The design modification created by staff orthotist Wallace Whitney, CO is seen in figures 2 & 3.

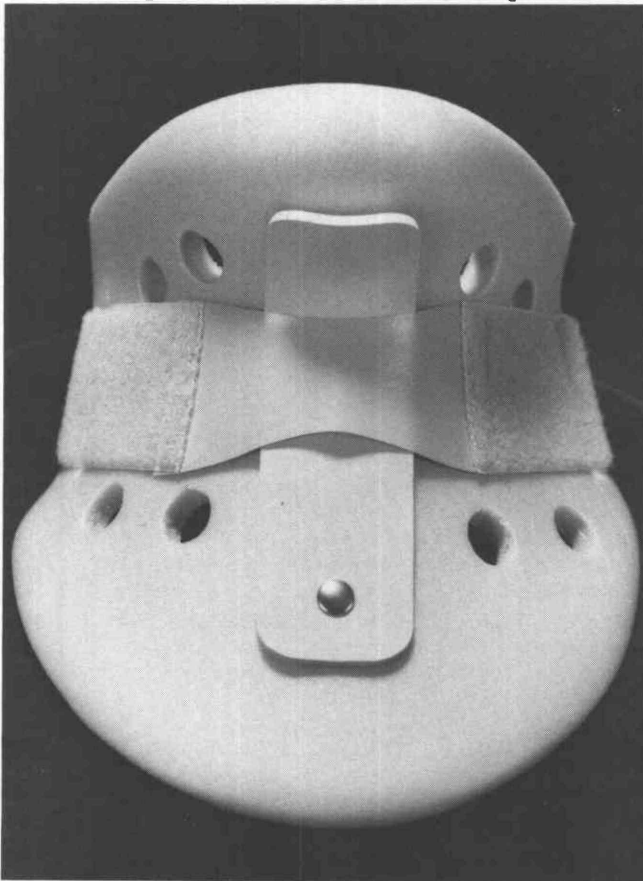


Figure 1.

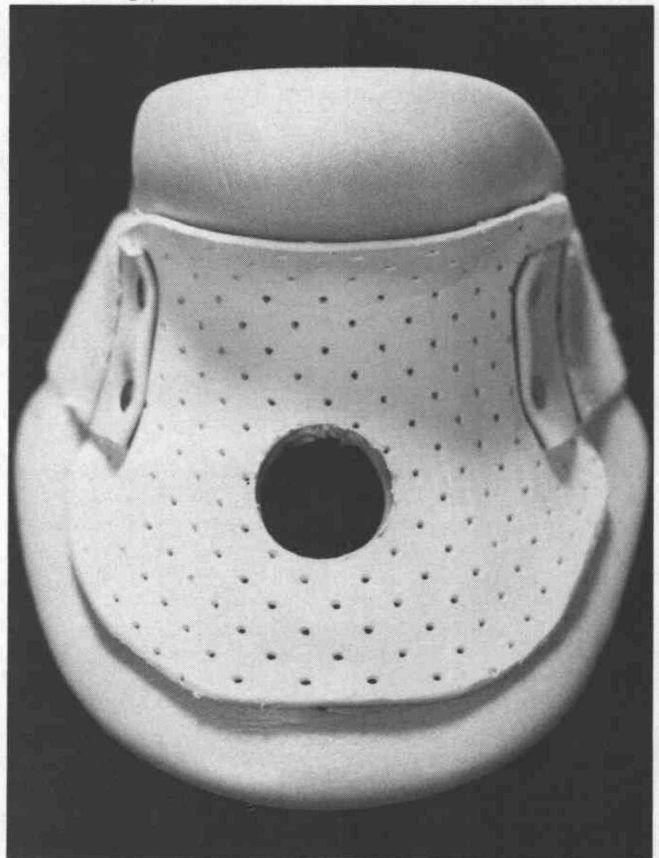


Figure 2.

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Figure 3.

Since we do this modification fairly regularly we have made a plaster cast to preform the low temperature plastic (K-splint™ or Orthoplast™) reinforcement piece. The original anterior strap is cut in the center, folded over and riveted to the plastic reinforcement piece and the collar. A hole (1¼ inch) for the tracheotomy tube is cut through the collar. A side effect is that the collar is made slightly more rigid which is often desirable for those patients.

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