

An Adaptable Orthopedic Cervical Brace

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Member of the American Board for Certification, 1952-1955

The cervical brace seems to be one appliance which should always be available for instant application.

This new adaptable Cervical Brace resembles in appearance and function a brace which we made popular in 1934. At that time we distributed 5000 copies of an article by Dr. Stephen T. Ragan, describing a 4-Post Cervical Brace. That article, printed in *California and Western Medicine*, April, 1934, read as follows:

AN IMPROVED BRACE

"The hazard of automobile traffic, the frequency of aeroplane crashes, the showmanship in wrestling matches, and the spectacular in football contests, have greatly increased the incidence of cervical fractures during the last decade. Many of these patients die early from accompanying cord damage, but a great number sustain fractures of the body, the processes, the laminae, or the pedicles, without showing evidence of paralysis below the area of trauma. After preliminary hospitalization, during which period a suitable brace is fitted, such patients do well upon ambulatory treatment.

In the manufacture of our cervical brace, a plaster cast of the cervical and upper dorsal region is made. This extends from the lower lip anteriorly, and the mastoids posteriorly, down the torso to the eighth rib.

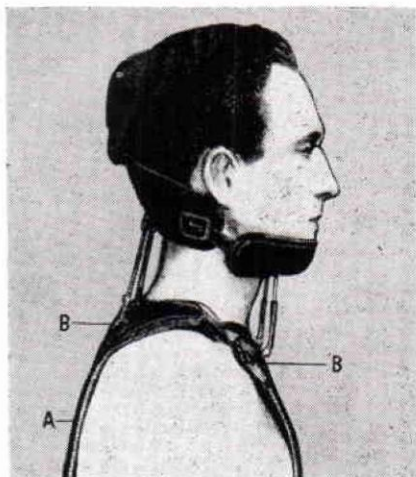
From this model, plates of twenty gauge duralumin are made to fit the chin, occiput, chest, and shoulders. Metal tubing is extended downward from each side of the chin and occiput plates, to slip over three-sixteenths-inch springalumin rods, ex-

tending upward from the chest and shoulder plates. The rods are threaded, and carry lock nuts for height adjustment. Contact sides are padded with quarter-inch felt, covered with light horse hide, and an outside trim of light sole leather is sewed in place. One-half-inch straps and buckles connect chin to occipital plate, and breast to shoulder plate. At the inferior border of the apparatus, a one-inch webbed strap encircles the thorax to prevent slipping. The total weight is twenty-nine ounces.

Because of fit and easy adjustment, absolute immobility is assured. Ventilation is adequate. The weight of the apparatus and sustained anatomical parts rest comfortably upon the broad surfaces of the pectorals and trapezii, and not upon the thin superior borders of these muscles, nor upon the clavicles. There are no pressure points, and discomfort about the cervical plexus is minimized. A strip of gauze may be placed in the chin and occipital recesses, and this is changed frequently to insure cleanliness. Either half of the brace may be removed for convenience in shaving, hair cutting, or bathing.

Pain in any of the nerve units making up the cervical or brachial plexus may be a distressing early symptom, but this is usually transient in character. A persistence would indicate a compression of nerve root by bony fragments, and a gradual increase in intensity would suggest the impingement of a nerve root by callus.

The cervical brace here described is made by M. J. Benjamin, to whom I am indebted for assistance in mechanical details."



(From *California and Western Medicine*, June 1934)

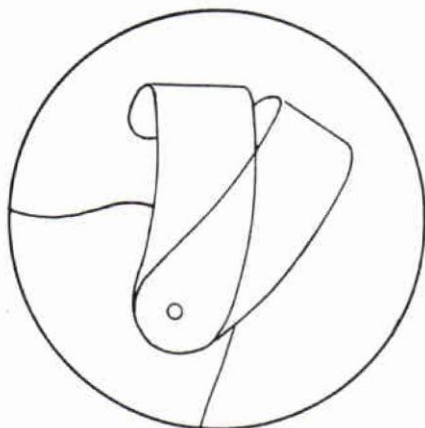
The pattern of the original brace provided for the metal to be shaped over the shoulders, to provide stability. This required different patterns for varying slopes of the shoulder.

The advantage of being able to extend the posts was seized upon by neurologists, as an ideal means of extending the neck, and the brace was recommended for migraine headaches, etc.

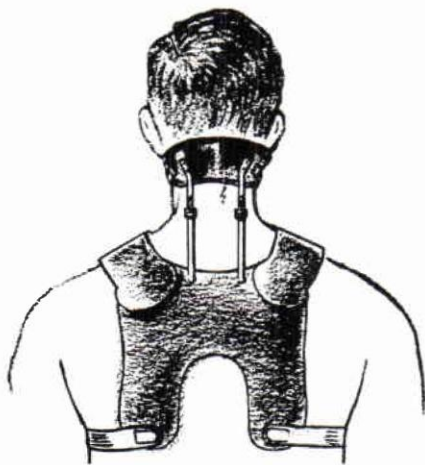
A demand was created for the stretching feature without a need for the immobilizing feature of the brace. The pattern was simplified to permit mass production by eliminating the extension of the metal in the back piece over the shoulders. The abbreviated back piece and chest piece, which float on straps over the shoulders, have become so common that the better-immobilizing model of 20 years ago has almost been forgotten. This is understandable because an orthopedic surgeon is interested in immediate application of the appliance. Many orthotists have fallen into the habit of supplying the pre-fabricated article, to avoid delay.

When Dr. G. Mosser Taylor addressed the Society of Orthotists and

Prosthetists, in February of 1952, he stressed the need for an orthopedic cervical brace which would afford better immobilization than the ones on the market. This reminded me of our earlier pattern. Hence the following improvement.



As shown in the above illustration, we use a friction joint for each shoulder piece. The metal is 6062-0 Aluminum alloy in .072 inch thickness. It can be hand shaped after lining with 3/16 inch wool felt stitched to 2 oz. strap leather covering.



When we got into production with our friction joint shoulder piece, our certified orthotist, A. H. Pressnall,

came up with a design for the back plate to avoid peening the metal to a round back.

We have applied for patent on this new adaptable Cervical Brace, because we hope to control its wholesale distribution. It is not our intention to restrain Certified Facilities from pre-

fabricating for their own application to the patient.

The author wishes to express his thanks to George Boyer for the preparation of the illustrations. He also wishes to thank his daughter, Mrs. Cy Munro Davis, for her aid in preparation of the manuscript.

DECEMBER, 1955

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