

Follow-up Experience with an Orthosis Combining the Supracondylar Knee Orthosis and the Spiral Orthosis

by Thomas A. Martin, CPO*

A seventy-one year old woman, post polio of long duration, presented herself to our facility with a Supracondylar Knee Orthosis¹ that had a spiral type AFO² attached to it over ten years ago. She had fractured the AFO component just proximal to the malleolus, about one year ago. Another facility had attempted to replace the Nyloplex[®] spiral AFO with polypropylene material. Her ankle was fixed at 120 degrees plantar flexion. Our investigation indicated that her knee went into genu recurvatum despite the SKO, hence the problem—how to attach the spiral unit to the SKO and duplicate the same alignment that she had been comfortable with after all these years. It is noteworthy that the SKO was held in position by a waist strap.

It was our opinion that the SKO no longer fit due to laxity within the knee cavity itself. She was quite adamant, however, that her brace system had been working well and it was our job to fix it. She declared that the waist belt was no problem and further stated, in no uncertain terms, that she wanted what she had because it had been of good service for over a decade.

Possibly being more persistent than intelligent, we proceeded. We were unsuccessful in our attempts on three separate occasions in reapplying the spiral type AFO. We finally tried #4134-30 percent and #4110-70 percent polyester resin, laminated with four layers of fiberglass and two layers of glass, and used 1/16" polypropylene welding rods that ran the entire length, one inch apart.

Using the old holes of the SKO, we were unsuccessful in obtaining satisfactory alignment when attaching the spiral unit. Therefore we were forced to tape the two units together until we had a compatible arrangement. Once the two components were riveted together, she had some problems in gait, especially between heel strike and foot flat, clearly indicating that the SKO was affecting the knee by not allowing it to go into recurvatum.

In summary, we feel that in using the resin as opposed to the Nyloplex[®] (we used the same plaster mold) we may have compromised some



Side and posterior views of orthoses similar to that described by Mr. Martin in his article. (The photographs supplied by Mr. Martin proved to be unusable.) These are supplied courtesy of H. Richard Lehneis, Ph.D., CPO.

flexibility, but gained, through rigidity, a successful duplication of past gait patterns.

Presently this woman is walking better than formerly and is quite satisfied with our results.

REFERENCES

¹Dr. H. Richard Lehneis, CPO, "Bio engineering Design and Development of LE Devices," Institute of Rehabilitation of Medicine, New York University Medical Center, p. 55, October, 1972.

²ibid., p. 60.

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