

Technical Note:

Wrist Flexion Unit Modification

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Several years back we learned that a wrist flexion unit, be it the Homser FM 500, 300, 200, or the Pope Easy Flexion Wrist PW 4-6, has little value for bilateral above elbow or bilateral shoulder disarticulation amputees. The patient involved, a right true shoulder disarticulation and left humeral neck amputee, had been successfully fitted with bilateral prostheses. The term "successful" can only be used in terms that the patient felt comfortable, was able to flex his elbows to 90 degrees and 135 degrees, and able to open the terminal device with extended elbow 100 percent of full opening elbow flexion of 90 degrees, 80 percent, and at elbow flexion of 135 degrees, 50 percent. Both prostheses were harnessed with leg loops and the usual elbow lock controls. Wrist units were prescribed and incorporated into both forearms, but proved to be quite useless due to the fact that the patient was unable to activate the wrist units.

To rectify the situation, the following modification was constructed. The trigger bar that activates the wrist flexion units is located medially on either wrist unit; therefore, an activating lever was designed and incorporated into the forearm (Figure 1), so that the patient can trigger wrist flexion by pushing against a chair, his leg, or any other object (Figure 2). Extension of the wrist unit is achieved using the legs (Figure 3). The trigger lever (Figure 4) is made of $\frac{1}{8}$ " aluminum and pivots on a $\frac{3}{16}$ " half-threaded rod, mounted in the sides (ant. and post.) of the forearm wall. The patient no longer uses his right SD prosthesis and has been converted to a special chest harness. The wrist flexion trigger mechanism has proven to be very successful, and the patient would not be able to accomplish many tasks of daily care without it.

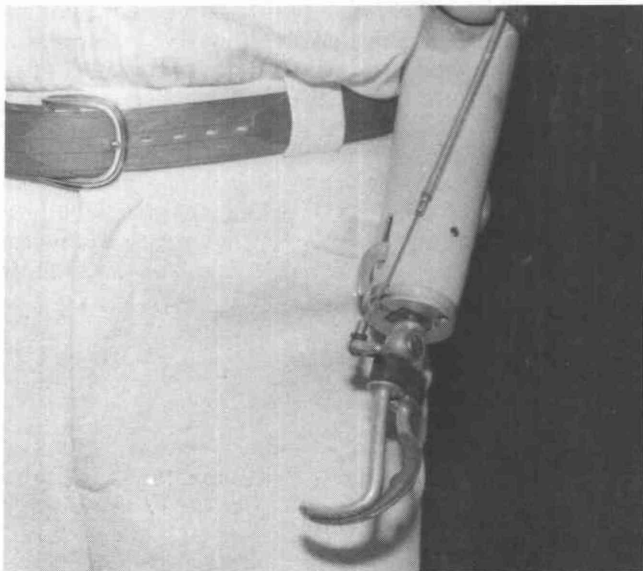


Figure 1.

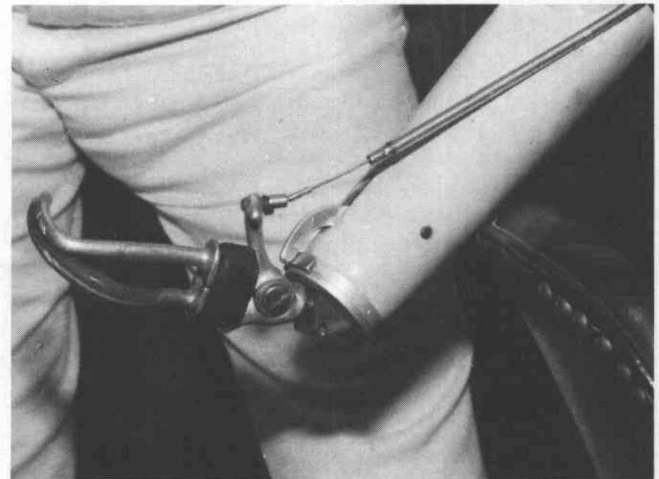


Figure 2.

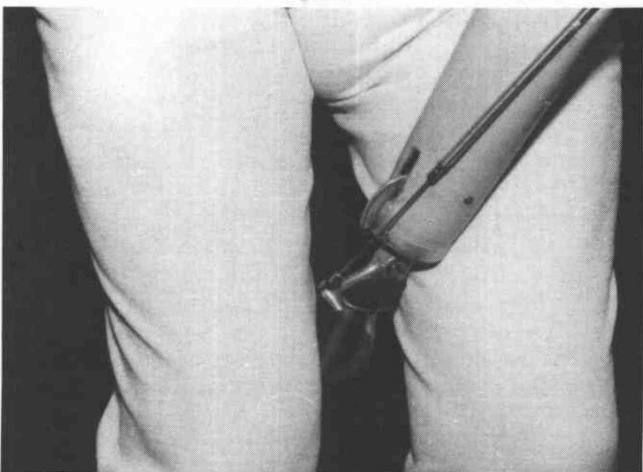


Figure 3.

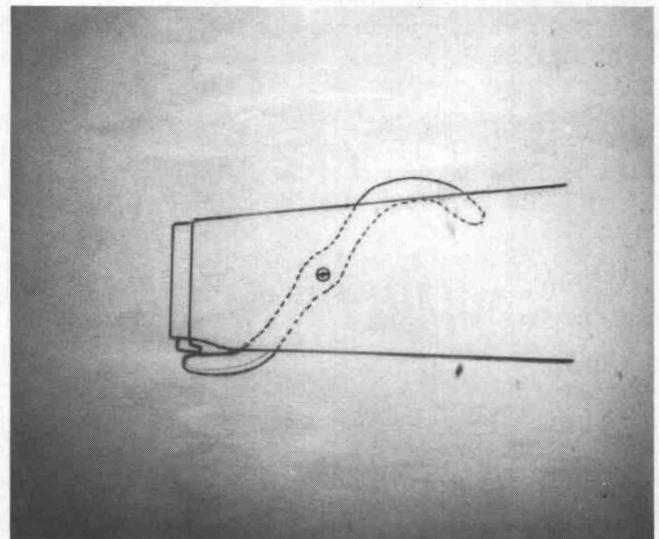


Figure 4.

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