Partial Hand Amputation

The patient is a 36-year-old male accountant who is also a home hobbyist. Two years ago, he lost his thumb in a power saw injury with the level of amputation through the distal metacarpal. The skin is now well-healed, and there are no painful neuromas (Fig. 1).

The obvious functional problem is the loss of opposition. He has been offered pollicization, but is apprehensive about the risks. Although he will continue to consider this procedure, he seeks other alternatives. What does prosthetics have to offer for such an individual?

The prosthesis is seldom called upon for partial hand prosthesis. This does not imply that partial hand amputations are rare. However, almost any residual hand which has sensation and opposition is more functional than any possible hand prosthesis.

Certain functional hand activities, usually job related, may require more stability than the residual hand elements can provide. In these situations, a prosthesis may mean the difference between employability and disability.

When trying to fulfill this goal, it is important that the prosthesis should not attempt to serve so many functions that it does none of them well. The patient should be carefully questioned as to the specific act which he desires his hand to perform. A device can be custom designed for that one basic function, and will generally be well received since it adds to the ability of the wearer.

In this case, the most acute need is for a solid post for gripping a pencil or pen. With this, he could continue his occupation as an accountant. Fig. 2 is an example of such a device which is easy to don and doff, and fulfills the functional need.

His second desire is to be able to continue his woodworking activities. Here his need is power grip rather than fine pinch. Another device can be fabricated (Fig. 3) which will provide a firm hold on his tools. This prosthesis is also easy to apply, and thus he is encouraged to do so.

It is nearly impossible to design a single prosthesis which will provide both of these functions. Therefore, single function devices must be so handy for the patient to use that the bother of changing devices is offset by the improved skills. With careful attention to detail, this can be accomplished.

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