

environment, mainly in carpentry. His main functional goal was the ability to grasp objects such as tools and materials such as lumber to perform his daily tasks at work, continue working on cars as a hobby, and perform ADLs at home.



Figure 7: (Left) Patient's presentation. (Right) Patient using Point Thumb to hold a spray bottle

Treatment

The patient was initially fit with a custom silicone restoration and a passively positional thumb, the TITAN Thumb, attached to a dynamic muscle contoured interface. An externally powered thumb was contraindicated due to the patient's bulbous distal presentation as well as a dirty and possibly wet working environment.

The patient found that the cosmetic restoration did not allow him to grasp heavy objects. While the TITAN Thumb gave the patient increased ability to grasp heavy objects, the patient found the need to use his contralateral hand to unlock it unacceptable. The Point Thumb was then fit as a replacement to the TITAN Thumb and found to correct this issue by allowing unilateral use.

The patient was ultimately fit with a partial hand custom HTV silicone socket and carbon fiber frame. The Point Thumb was integrated into a carbon fiber thumb cap that was glued to the HTV silicone underneath and allowed for grasp of both large and small objects.

Outcome

The patient reported increased satisfaction with the Point Thumb due to the novel spring back mechanism. This trial fitting was very recent and thus the collection of standardized outcome measures data is ongoing. Further results will be reported after the patient has used the new device for an extended period.

CONCLUSION

Thumb amputations present a variety of complicated functional, psychological, and occupational challenges. Most people with thumb amputations work in heavy manual labor occupations and the lack of robust prosthetic options up to

this point prevents many of them from returning to work. The Point Thumb is a new robust passively positionable ratcheting prosthetic thumb with flexion at the MP and IP joints designed for use in heavy-duty work environments. The three case studies presented here illustrate the complexity of thumb amputation cases and demonstrate the viability of the Point Thumb as a robust prosthetic thumb for heavy manual labor occupations. In all cases, use of the Point Thumb allowed patients to achieve their functional goals, ranging from using a chainsaw to carrying lumber. These positive early trial fittings indicate that the Point Thumb has strong potential and warrants further study.

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