

Prostheses provision approach in sub-Saharan Africa country

Akouetevi Aduayom-Ahego^{1), 3)}, Yoshihiro Ehara²⁾

- 1) Faculty of Sport Sciences, Waseda University
- 2) Department of Prosthetics and Orthotics & Assistive Technology, Niigata University of Health and Welfare
- 3) Ahelite brace, Accra Ghana

【Introduction】 In Ghana only 5% of population of disability receive care¹⁾. Without access to high-quality assistive product, people with amputation are at high risk for exclusion, dependence, isolation and, ultimately, poverty, all of which entail great social and economic costs for families, society and the country²⁾. Current study in Ghana highlighted some of the challenges the prosthetics service face mainly lack of sufficient facilities and care providers³⁾. The purpose of this report is to describe the experience of providing prostheses to patients with transtibial amputation and finger loss in Ghana by using recycled prosthesis parts and silicone material.

【Materials and Methods】

Case 1 : A 32 year-old male with below the knee amputation of the right lower limb presented at the prosthetic center for a new prosthesis. Since his amputation due to road traffic accident in 2016, he never wears a prosthesis. In order to provide an affordable device, recycled used parts obtained from some prosthetics companies in Japan were considered to be used to assemble the prosthesis for the subject.

Case 2 : A 25 year female patient visited our prosthetic office with deficiencies of both the hands due to autoimmune disease. The amputations were performed in 2015. The silicone prostheses were manufactured and was the first experience in the country.

【Results】 Figs. 1 and 2 show the transtibial prosthesis and the silicone prostheses manufactured. The patients were satisfied with the final aspect of the prostheses.

【Discussion】 Amputation of the lower limb reduces an amputee's mobility. Providing the amputee with a high-quality prosthesis is therefore highly important. Many factors have been identified, such as lack of prosthetic and orthotic rehabilitation services, lack of facilities and professionals in the country. Using a mean by acquiring

used prosthesis and introducing a new technique such as silicone for affordable prosthesis for the needy is necessary for quality of life of the users.

【Conclusion】 This prosthesis provision approach gives hope to the amputees to carry daily living activities and they are socially comfortable.



Fig. 1. Trans tibial prosthesis fitting



Fig. 2. Silicone fingers manufacturing and fitting

【References】

- 1) Tinney MJ, Chiodo A, Haig A, et al.: Medical rehabilitation in Ghana, *Disability and Rehabilitation*, 29: 921-927, 2007.
- 2) WHO standards for prosthetics and orthotics, World Health Organization, Geneva, 2017.
- 3) Akouetevi AA, Yoshihiro E: Current position and challenges in prosthetic and orthotic education in Ghana, *Niigata Journal of Health and Welfare*, 16: 26-34, 2016.