CASE STUDY: REGAINING INDEPENDENCE, A PATIENT WITH BILATERAL UPPER EXTREMITY LIMB LOSS

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As advances in prosthetics are accelerating in the laboratory, research, and clinical settings, it is critical for the developers and medical providers to understand the setting in which the client with upper limb loss actually lives and functions. The perspective that we gain from observing the client in their unique environments should drive all that happens in our research and development labs and patient care clinics. A client’s ability to function when assessed outside of their environment is falsely impacted by challenges that they may not have to deal with in their environment or there may be modifications in our clinics to ease function that are not available to them at home.

This case study presents a client with bilateral upper extremity limb loss. The focus will be on the rehabilitation that occurred in his home. The client is a 43 year old male who moved to the United States from Mexico 23 years ago. While Spanish is his primary language he does speak functional English. He is married and has four daughters under the age of 13. He has worked for Anderson Hay for 22 years. His job there was to operate a machine that takes normal sized hay bales and compresses them to 1/3 of normal size for shipping overseas. On June 2, 2006 he lost both upper extremities, the right at the transradial level and the left at the transhumeral level in this machine. He was hospitalized for three weeks and discharged home with home health nursing for wound care, occupational therapy, and a home health aide. Within one month he began to attend outpatient occupational therapy for UE rehabilitation and pre-prosthetic training. He was first fit with a preparatory myoelectric prosthesis on the right side on 9-28-06. He began basic prosthetic training with an electric hand and wrist rotator. He switched modes using 4 channel processing and was able to successfully do this immediately with fitting due to pre-prosthetic training with the MyoBoy system and his inherent motor abilities. He required wrist flexion to perform ADL’s at midline, however he did not want to use a non-anthropomorphic terminal device, and therefore an electric hand with wrist flexion was provided. Self-feeding was the first ADL that the patient wanted to focus on and he quickly achieved independence with fork foods. Meanwhile, care in the home was not going well due to trust and cultural issues between the client and his family and the care providers. At that point this therapist began to provide therapy in the home.

The initial home visit opened our eyes to the true challenges for this patient. The patient had just purchased his first home in the United States and was very proud of the home. He wanted to provide his family with a residence that was “theirs” and some land to have a garden and some chickens. Due to financial limitations, they purchased a “fixer-upper” and the patient’s relatives were going to help with restoration in their free time. The house did not...
have running water or a refrigerator for 2 months. The main room floor and sub floor was removed for a number of weeks, requiring one to walk across 2”x 4”s while viewing the crawl space below. There was a 6 week delay in getting the foot operated bidet installed in the one bathroom that was shared by 6 people. The challenges were too many to list and required a very individualized, goal oriented approach with success measured in small increments. The goals were based on the patient’s desires regarding self-feeding and toileting at the top of the list, followed by home access and garden activities, and bathing and dressing subsequently. Everyday items, adaptive equipment, and custom modifications were made to enable this patient to be independent in his ADL’s and IADL’s. The process is ongoing as he expands his abilities, interests, and requirements.

This patient’s rehabilitation was significantly impacted by his home environment and by his cultural belief system. It is critical to the success of our patients that we fully understand their physical, emotional, and cultural world and base our interventions on this understanding. The opportunity to provide care for this patient in his home resulted in observation of his interactions with his family, friends, and community. This knowledge impacted his care by providing us with information about what type of terminal device he would use based on cultural values and assisted us in prioritizing goals. Often times the medical provider’s bias about the importance of certain goals can impact the actual success of the patient and the perceived success of rehabilitation by the team. For this patient, independent bathing and dressing were not as important as some IADL’s. The patient’s decreased motivation for independence in bathing and dressing was concerning to the team, however this is the reality of his life and culture and does not decrease success of his rehabilitation.

In this current market of third party payers basing payment on achievement of goals and independence in activities valued by American society, there is concern for the person who has a different value system or lifestyle. By describing some of these unique situations we may assist the rehabilitation process by increasing understanding of the client’s individual goals. Working with a client in his or her personal environment opens our eyes to the true ways that he or she uses prosthetic devices. This experience is invaluable for the medical provider and for the client. Communication from those of us who provide treatment in the client’s environments to researchers and manufacturers will result in the continuum of improvement in care of the client with upper limb loss.