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Original article

Contribution of patient–advisors during rehabilitation for replantation of digits improves patient-reported functional outcomes: A presentation of concept[☆]

L'implication des patients-ressources lors de la rééducation après une réimplantation de doigt améliore les résultats fonctionnels tels que rapportés par le patient : une présentation du concept

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ABSTRACT

Clinical approach to surgical patients has evolved to include previous patients as part of the treating team in the role of “patient–advisors”. Knowing that compliance to rehabilitation protocols is significant for a successful functional hand replantation, we set out to quantify functional patient–reported outcomes in individuals enrolled in a Patient–Advisor Program (PAP). We performed a prospective cohort pilot study of all patients admitted for a finger replantation between July 2015 to January 2016. All patients were offered to partake in the PAP, or else they would constitute the control group. Primary endpoints were functional outcomes as reported by patients at 6–8 weeks and 4–6 months of follow-up. Secondary endpoints were patient-reported pain and quality of life questionnaires. In total, 62 patients were admitted for finger replantation in the studied period, in which 50 agreed to participate in the study, including 7 in the patient–advisors group and 43 in the control group. Patients from the patient–advisors group fared better on mean scores of the Disabilities of the Arm, Shoulder and Hand than controls (29.6 vs 34.8 respectively at 4–6 months). Improvements in the McGill Pain Questionnaire were also greater in the studied group (19.9 vs 33.3 at 4–6 months). Replantation patients benefiting from the PAP demonstrated superior functional outcomes on self-reported questionnaires, which could be explained by a better understanding of rehabilitation protocols and compliance when previous patients are active members of the treating team.

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R É S U M É

L'approche clinique des patients chirurgicaux a évolué en incluant des patients antérieurs au sein de l'équipe traitante en tant que « patients–ressources ». Étant donné que la compliance aux protocoles de rééducation représente un aspect essentiel pour la réussite fonctionnelle d'une réimplantation de la main, nous avons pour objectif de quantifier les résultats fonctionnels tels que rapportés par les patients lorsque ceux-ci étaient inscrits dans un Programme de Patients–Ressources (PPR). Nous avons effectué une étude pilote prospective sur des patients admis pour la réimplantation d'un doigt entre juillet 2015 et janvier 2016. Tous les patients avaient l'option de participer au PPR ou de constituer le groupe contrôle. La principale donnée collectée était les résultats fonctionnels tels que rapportés par les patients

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à 6–8 semaines et 4–6 mois de suivi. Les données secondaires collectées étaient la douleur rapportée par les patients et les questionnaires de qualité de vie. Au total, 62 patients ont été admis pour une réimplantation digitale dans la période à l'étude, dont 50 patients ont accepté de participer dans l'étude, en incluant 7 dans le groupe Patients-Ressources et 43 dans le groupe contrôle. Le groupe Patients-Ressources a démontré de meilleurs résultats sur le questionnaire fonctionnel *Disabilities of the Arm, Shoulder and Hand* en comparaison avec le groupe contrôle (29,6 vs 34,8 respectivement à 4–6 mois). L'amélioration de la douleur rapportée dans le *McGill Pain Questionnaire* était plus significative dans le groupe à l'étude que dans le groupe contrôle (19,9 vs 33,3 à 4–6 mois). Les patients réimplantés bénéficiant du PPR ont démontré de meilleurs résultats fonctionnels tels que rapportés par le patient, ce qui pourrait être expliqué par une meilleure compréhension des protocoles de rééducation et une meilleure compliance lorsque des patients antérieurs jouent un rôle actif au sein de l'équipe traitante.

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1. Introduction

Following upper extremity amputations, postoperative adherence to rehabilitation protocols represents one of the main determinants of a functionally successful replantation [1,2]. Functional long-term outcomes demonstrate that compliant and motivated patients seem to fare better than their counterparts. However, all patients cope differently with the traumatic burden, with a wide range of factors ultimately affecting their adherence to treatment plans after discharge from hospital. Such factors include social support environment, socioeconomic background, level of education and psychosocial health at the time of injury. As such, emphasizing the arduous postoperative rehabilitation course during the informed consent at the time of surgery is necessary, a process that is unfortunately performed during a race against the ischemia damages. This is a period in which surgeons might find it difficult to predict which patients will be compliant or not.

Moreover, recent evidence supports that centralization of replantation procedures in high-volume hospitals with microsurgical expertise translates into superior survival outcomes at hospital discharge [3,4]. Therefore, some patients originating from distant regions are transferred back into healthcare centers possessing limited experience with postoperative rehabilitation for upper extremity replantation. In 2013, our team has demonstrated that the rate of adherence to postoperative rehabilitation protocols, which lasts for one year on average, was significantly lessened in patients transferred to external institutions when compared with those followed in specialized centers where they were operated (35% vs 85% respectively) [5,6]. When considering the physical, psychological and social handicaps associated with replantation procedures, this long-term process can take a toll on unprepared patients treated in centers with limited resources and expertise.

To palliate to what can be perceived as isolation by these patients, we developed a “patient–advisors” program with the purpose to provide more support to individuals after a replantation procedure in the postoperative period. Patient–advisors are former patients that have undergone a successful replantation and that are carefully selected in order to interact with current patients hospitalized after an amputation and to discuss rehabilitation aspects from a peer’s perspective rather than that of a healthcare professional. Previously published data focusing on qualitative aspects of care reported promising results in terms of appreciation by patients, better understanding of treatment plans and increased hope with functional outcome [7].

On the other hand, it is pertinent to argue that qualitative improvements in patient satisfaction are not necessarily the endpoint when labeling replantation procedures as successes or failures. A different way of evaluating the efficacy of patient–advisors programs (PAPs) is to investigate the long-term functional outcomes using quantitative data. In this pilot study, we aimed to

quantify functional results after replantation procedures in patients benefiting from the PAP compared to those receiving regular care.

2. Patients and methods

Patient–advisors are patients treated in our center for an upper extremity revascularisation or replantation who have completed their rehabilitation process. Funded by the Canadian Foundation for Healthcare Improvement (CFHI) since 2014, our experience emphasized the crucial elements of patient–advisors recruitment and training. Selection criteria of patient–advisors enrolled in the program included superior competence in communication skills, ability to put others at ease, willingness to share experiences and dedicate time to help others, significant control over one’s emotions and empathy, and ability to work in teams.

After careful recruitment, volunteer patient–advisors enroll into a comprehensive training program done by the health promotion department in collaboration with former patients which comprises three aims:

- providing general information on the mandate of the centralized replantation care unit (CEVARMU [8]);
- refining their knowledge about the theoretical foundations of patient partnerships;
- clarifying their role within the healthcare team. Formal teaching is also provided by senior advisors with testimonials from their previous experiences while recruitment and training is an ongoing process.

After certification is completed, patient–advisors can intervene with new patients admitted for replantation procedures. If the patient consents, the treating surgeons initiate the first contact between patient and patient–advisor during the first postoperative day. The patient–advisor then visits the hospitalized patient where the first interaction occurs. Tailored on the patient’s needs, the patient–advisors can then intervene during the rehabilitation process in person, by telephone or by videoconference.

Interactions pertaining to physical, psychological and social aspects are shared during those sessions, in order to provide patients with the experience of other individuals who experienced similar injuries and rehabilitation. Patient–advisors testimony and the capacity to demonstrate the visual and functional results of their hands after one year of treatment allow patients to project themselves in the future and gain hope with regards to the benefits of adhering to a comprehensive rehabilitation plan [5]. There are several other aspects that can be addressed, such as feelings of guilt, fears, frustrations, anger, as well as implications in social, personal and work environments.

In order to quantify the long-term functional outcome of patients enrolled in the PAP, we conducted a pilot study from July

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