

## The Potential of Video in Patient Education Post Skin Biopsies

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### ABSTRACT

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Plastic surgeons perform excisional skin biopsies that may be in aesthetically sensitive areas. Excisional biopsies are performed on an outpatient basis and therefore patients are expected to perform wound care at home. The current standard of patient education for post-procedural care is verbal information along with a written set of instructions to take home. However, a patient's comprehension of verbal directions and literacy level can greatly affect the transmission of knowledge, and verbal instructions are not standardized across each patient encounter. The importance of patient education in self-care with the use of video has great potential in promoting improved outcomes.

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### RÉSUMÉ

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Les chirurgiens-plasticiens peuvent effectuer des biopsies-exérèse de la peau dans des zones sensibles du point de vue esthétique. Les biopsies-exérèses sont pratiquées sur une base ambulatoire et les patients sont donc tenus de traiter les plaies à la maison. Des explications verbales et un document de directives à apporter constituent la norme actuelle pour l'éducation du patient sur les soins postinterventions. Cependant, la compréhension de consignes verbales et le niveau d'alphabétisation d'un patient peuvent grandement influencer sur la transmission des connaissances. De plus, les directives verbales ne sont pas normalisées dans chaque rencontre avec des patients. L'utilisation de la vidéo pour améliorer l'éducation des patients qui s'occupent de leurs propres soins offre un grand potentiel pour améliorer les résultats pour le patient.

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### INTRODUCTION

Skin biopsies form a substantial portion of a plastic surgeon's practice. Plastic surgeons perform excisional skin biopsies that may be in aesthetically sensitive areas. Skin biopsies are generally classified as "clean procedures" (primary closure of a wound that does not enter the respiratory, gastrointestinal, or reproductive tract), and are expected to have an infection rate of <2% [1]. Excisional biopsies are performed on an outpatient basis and therefore patients are expected to perform wound care at home. The current standard of patient education for post-procedural care is verbal information from either the staff or resident, along with a written set of instructions to take home. However, a patient's comprehension of verbal directions and literacy level can greatly affect the transmission of knowledge. Furthermore, verbal instructions are not standardized across each patient encounter. Therefore, a different means of providing more accessible and standardized patient education on wound care and infection recognition needs to be considered.

### POST-PROCEDURAL INFORMATION NEEDS OF PATIENTS

Patients who have procedures performed on an outpatient basis are expected to perform self-care. A literature review by Peiper et al. examined what information was felt by patients to be the most important for discharge [2]. Within ambulatory

surgeries, the topic of pain management and analgesic use was found to be a common concern that was often missed.

A further study by Peiper et al. addressed the knowledge and concerns of patients discharged home with wounds [3]. They found that pain management, wound complications, and recognizing infection were at the top of patients' concerns. Furthermore, a knowledge gap was revealed in that 38.2% of patients did not know the type of dressing used on their wound (wet vs. dry gauze), and 58.7% did not know the cleaning solution (saline, soap, tap water or peroxide) to use on the wound. As well, many of them incorrectly believed that drying out wounds was appropriate management.

Holland et al. examined the problems and unmet needs of patients discharged home for self-care through a prospective cohort study [4]. They administered a questionnaire 1 week post-discharge, and found that the most common concern for surgical patients was knowledge of the recovery process and knowing where to access care if needed.

Therefore, patients who are expected to provide self-care at home have concerns about pain management, recognizing infection, need and access to care, and expectations for recovery. There may be a patient knowledge gap for correct management of wounds. Therefore, an online video could address these gaps in knowledge and potentially improve patient outcomes.

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**Keywords:** skin biopsy, patient education, plastic surgery, video

### CURRENT TRENDS IN PATIENT EDUCATION

The current standard in patient education is the use of verbal information along with written instructions. Kruzik examined the trends of pre-operative patient education for elective surgery and found that on top of verbal education, information pamphlets are the most commonly used for expectations of surgery and on post-operative care [5]. A Cochrane review by Johnson et al. examined discharge instructions with the use of written information with verbal instructions versus verbal information only [6]. However, only 2 studies were found to be pertinent to their outcome measures, and both focused on parents caring for children (otitis media (OM) in the emergency department, and a pediatric burn unit). Parental knowledge was measured with questionnaires (burn: 10-item questionnaire at first outpatient follow-up; OM: 7-item questionnaire at discharge, and repeated at 1 and 3 days). Parental knowledge was significantly higher with extra written information in both studies. Parental satisfaction with the discharge instructions was also high in both studies, however only the OM study showed a significant increase with written. As well, one of the studies (OM) suggested that written information might have significantly decreased the number of returns to the emergency department.

There is an increasing trend of using audio-visual media for obtaining informed consent within different specialties [7-9]. Video patient education is also widely used in pre-operative care [10-11]; however, their outcomes focused on measurements such as quality of life and anxiety, and did not include post-operative care education.

The benefits of written materials with verbal instruction enables the patient to bring the instructions home for later reference, and it is the current standard of patient education. Video is not widely used for post-operative education. The patient's level of literacy is not taken into consideration, and details about self-care and recognizing infection are areas that would benefit from video media.

### THE USE OF EXTRA MEDIA IN PATIENT EDUCATION

The use of extra media within patient education is hypothesized to promote better outcomes, as patients may forget verbal instructions easily. The Cochrane review by Johnson et al. revealed that written information helps to significantly increase patient knowledge and satisfaction in parents caring for their children [6]. Whitby et al. examined the discharge instructions for surgical patients. The use of oral with pictorial instructions on recognizing surgical site infections (SSIs) was compared with only advice to seek help if worried [12]. Both groups were then followed on a weekly basis by infection control nurses for 1 month and told to report any signs of infection. They found that the educated cohort over-diagnosed SSIs and had a poorer correlation with the nurse's diagnosis of infection compared to the non-educated cohort. Patients in both groups were equally able to identify the criteria for wound infection in a SSI survey at 4 weeks post-op. Based on this study, educating patients on

the signs of infection failed to improve the validity of infection diagnosis. However, it is important to note that the surgeries included within this study were chosen based on having expected substantial rates of infection, and included all surgical specialties. Patient education for admitted surgical patients may encourage over-diagnosis of infection in the post-operative period.

Another study by Merle et al. is a randomized controlled trial looking at the use of an information leaflet on surgical site infections (SSIs) within GI surgery [13]. They compared the leaflet group to patients who only received oral instructions at discharge. Patients were then interviewed at 5 weeks post-op to assess information recall on SSIs and satisfaction with education. They found that both groups had similar rates of knowledge recall, with the leaflet group rating higher in satisfaction with education. However, it is also interesting to note that the group with written information also had higher rates of beliefs that SSIs were always preventable, and trended towards higher intention to seek legal action if a SSI occurred.

Although it may appear that educating patients on infection recognition may cause overdiagnosis, patient satisfaction is consistently higher with more education. Also, it can be argued that an increased awareness of wound infection may be good for preventing negative patient outcomes. Furthermore these studies did not examine the use of videotape in wound care and recognition of SSIs within a procedure that is expected to have a lower rate of infection.

### VIDEO WITHIN PATIENT EDUCATION

The use of audio-visual media for patient education is not a new concept. A literature review by Gagliano in 1988 looked at 25 articles that examined the use of videotape in patient education [14]. It concluded that video is at least equivalent to traditional methods of patient education (verbal, written) in increasing short-term knowledge. However, it does not offer better retention of long-term knowledge or increased compliance with medical regimens. A noted benefit that video has over traditional methods is the ability to role model for patients. There is a possible benefit from seeing another patient effectively tolerating a procedure, and this can help to decrease anxiety and increase the patient's coping ability. Furthermore, videotape can save a physician time in counselling without compromising the quality of information being delivered. The use of videotape is seen throughout medicine, such as in the management of chronic diseases such as cancer, depression, COPD, diabetes, and asthma.

Within more current uses of videos within patient education, Idriss et al. conducted a randomized controlled trial examining the use of an online video-based platform versus a pamphlet for recognition of melanoma [15]. Ten-item questionnaires were administered at baseline prior to the education, and then repeated at 1 month post-education via telephone interviews. They found that the video group had a significant increase in melanoma knowledge from baseline to one month in compari-

son to the pamphlet group, and the use of video was rated significantly higher in terms of usefulness and appeal by patients.

Video appears to be often used in patient education within dermatology. Armstrong et al. performed a randomized controlled trial examining patients with atopic dermatitis (AD) and the use of an online video versus a written pamphlet on disease severity and patient knowledge [16]. Patient were assessed on AD disease severity with a validated clinical outcome instrument at both pre-education and then at 12-weeks. Atopic dermatitis knowledge at baseline and then at 12-weeks was also assessed. The patients with video education showed a significant improvement within disease severity at 12 weeks. As well, patients within the video cohort demonstrated a significantly greater improvement in AD knowledge compared to the pamphlet group. Patients within the video group also rated their education as significantly more appealing than the pamphlet group.

Beyond patient education on a disease and its chronic management, videos have been used in the pre-operative period to manage patients' expectations and anxiety. A prospective cohort study by Crabtree et al. looked at the use of preoperative video education in non-emergent pulmonary resections compared to verbal and written education [17]. The video explored pre-operative, operative and post-operative expectations, and provided education on post-operative management and exercises. Patients who had video education reported significantly higher satisfaction with the surgical experience, more relief of anxiety, and less pain at rest on the McGill Pain score at discharge compared to controls.

The use of video in patient education is consistently linked to higher patient appeal and satisfaction. Furthermore, video education may be related to increased knowledge recall, and improved patient psychological and physical comfort.

### USE OF VIDEO EDUCATION WITHIN SKIN BIOPSIES

The use of video patient education has been studied within skin biopsies. Armstrong et al. performed a randomized controlled trial comparing video-based education versus verbal education on obtaining informed consent and post-procedural wound care [7]. The main outcomes included knowledge pre- and post-biopsy, and patient satisfaction with the education medium. The study included 84 patients who received shave or punch skin biopsies. The study group watched a video to obtain informed consent (detailing why and how a skin biopsy is performed, risks and benefits of the procedure, and what happens to the skin specimen) prior to consenting for the procedure, and then another video after the biopsy on wound care. The control group had the traditional verbal explanation of the procedure to obtain consent, and then verbal explanation of post-procedural wound care. All patients in both groups were given a pamphlet on post-biopsy care to take home. A questionnaire (6 multiple choice questions developed by the staff dermatologists focusing on biopsy purpose, risks, wound care, and signs and symptoms of infection) was completed before any education, and then re-

peated at the end of the visit. Patient satisfaction with the education was measured with a 10-point visual analog scale. They found that the video group demonstrated a significant increase in knowledge at the end of the visit, but not within the verbal group. Satisfaction within the education was found to be equally high in both methods.

This study suggests that video education is at least as effective (and may be superior) to verbal education in increasing patient knowledge. Furthermore, it is a method of education that is reproducible, timesaving, and may be more appealing and comprehensive to patients with lower literacy.

### CONCLUSION

The current standard of patient education post skin biopsies can be greatly improved. With differing levels of patient literacy, the ability to visually demonstrate self-care and signs of infection holds great potential for improving patient outcomes and satisfaction. Further research into the use of video education within specific patient populations (targeting patients with lower literacy level or lower socioeconomic status) may help to elucidate the value of this media. As well, the development of new video platforms (ex. online interactive modules) is a potential route for improving patient education.

As the adoption of patient education videos becomes more prevalent, some basic guidelines for content and delivery will need to be developed and evaluated. The ideal environment for the use of video would be where patients have access to a healthcare professional at the first viewing so that they can ask questions, and are then available for repeated viewing as needed by the patient. For example, an online link could be accessed by the patient in the waiting room, and the link would be given to the patient as part of their post-procedural instructions. Videos should be screened for basic grade 8 level comprehension, and aim to be concise (less than 30 minutes). The physicians using video instruction would be involved with quality control, and ensuring that the videos meet their criteria for patient care. For skin biopsies, the location of the biopsy may necessitate a different set of instructions that would be given to the patient (ex. involving the eyelid vs. the ear vs. scalp). Different videos targeting the care of these special areas would need to be considered.

We believe that having a video adjunct to the patient-doctor interaction would strengthen the relationship, as it enables better patient understanding and can open up opportunities for discussion that may be missed in unidirectional verbal based education. Naturally, the value of video within patient education is seen as a complement, and cannot replace the human interaction between the doctor and patient.

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