



Use of Smartphone Application for Management of Postoperative Wound Complications

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ABSTRACT

Introduction: Recently, a HIPAA compliant photo and video sharing platform was developed to securely communicate between patients and clinicians using their smart-phones. The purpose of this study was to assess the ability of this smartphone application to assist in management of postoperative wound complications.

Methods: All patients who underwent spine surgery starting in October of 2013 were given the option of performing any questions relating to their follow up remotely using a HIPAA compliant smart phone application. Patients were allowed to upload pictures of their wound, videos of their gait, and have an ability to post comments and receive responses using the application. Patients were then asked to rate their experience on a 4 point scale(Unsatisfied, somewhat satisfied, satisfied, very satisfied). Out of this group, the patients (5) with concerning post-operative wounds were selected for this study. These patients were asked to document their wound status using the application in addition to keeping their regular office appointments. The treating physician judged the clarity of the images and ability to make clinical decisions based on the information provided. The treating physician noted whether the treatment plan made using the application needed adjustment based on the clinical information obtained during the office visit

Results: A total of 5 patients(3 female, 2 males) with concerning postoperative wounds were included in this study. All of the wounds were managed successfully non-operatively. Images were deemed to be acceptable in all cases but 1 in which image was out of focus. The application was used to communicate this to the patient and ask him to repeat the picture. Wound status was verified during the scheduled office visit and found to correspond with the image captured on the smartphone by the patient. At no point did the treatment plan that was formulated based on information obtained from the smartphone based application change. All patients were satisfied with their ability to access their physician using the application and

Discussion: A HIPAA compliant photo and video platform safely allows for management of post-operative wound complications and can serve as an alternative to office visits in select patients. A large scale trial is necessary to establish the indications and limitations of this form of patient evaluation.

Conclusion: Smartphone applications can serve as a useful tool in postoperative management of patients undergoing orthopaedic surgery.