



# The use of video before arthroscopic shoulder surgery to enhance patient recall and satisfaction: a randomized-controlled study

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**Background:** Historically, the preoperative consultation has consisted of a discussion between patient and surgeon. There is a growing literature describing efforts to integrate multimedia into surgical patient education. This study aimed to assess the efficacy of an educational video tutorial on early learning of information specific to patients undergoing shoulder arthroscopy when it was used as an adjunct to the standard preoperative consultation.

**Methods:** This study was a surgeon-blinded, randomized controlled trial involving 40 consecutive patients requiring shoulder arthroscopy. After a preoperative consultation with an orthopaedic surgeon, patients were randomized in a 1:1 ratio to either a control group or a treatment group. The treatment group viewed a 10-minute video, which covered the expected preoperative, intraoperative, and postoperative experience. Immediately afterward, both groups completed a questionnaire measuring satisfaction and recall of information received. All patients completed a second questionnaire at the first postoperative visit that assessed overall satisfaction with their experience.

**Results:** Thirty-four patients were available for follow-up. The video group (N = 15) answered 87% of the knowledge questions correctly, whereas the control group (N = 19) answered only 56% ( $P = .000$ ). There was stronger agreement in the video group that the preoperative consultation contained an appropriate amount of information ( $P = .039$ ). Postoperatively, there was agreement that the video was an effective preparation tool for all stages of the surgical experience. However, there was no difference between the groups in satisfaction with their overall surgical experience.

**Conclusions:** Video can enhance patients' operative experiences and improve their retained knowledge when it is used as an adjunct to the preoperative consultation.

**Level of evidence:** Basic Science, Education Methodology Study, Devices to Improve Learning.

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Historically, explanation of surgical procedures during the preoperative consultation has consisted of a discussion between the patient and the surgeon.<sup>15</sup> This discussion is an important component of the surgeon-patient relationship, not only for providing information to ensure that the patient has a proper understanding of the condition being treated, including the treatment's inherent complications and risks, but also for obtaining the patient's informed consent. Unfortunately, patient retention and recall of information discussed have been shown to be inadequate.<sup>8,12,14,24</sup> Moreover, a patient's *perceived* lack of information (as distinct from the actual amount of information given) appears to be correlated with patient dissatisfaction.<sup>17</sup>

Various modalities have been implemented in an attempt to augment the verbal interaction between surgeon and patient, including printed materials, prompt sheets, visual aids such as 3-dimensional models and computer-based programs, tailored communication styles, and patient education groups.<sup>16,20,23,26</sup> Another adjunct, the use of video, appears to be a promising approach that takes advantage of modern multimedia technology.<sup>1,9</sup> Marshall McLuhan, the father of media theory, coined the phrase "the medium is the message" and referred to television (and, by extension, video) as a hot medium, meaning it has the ability to provide knowledge in a fashion to which patients can immediately relate.<sup>18</sup> In addition, video may provide patients with a virtual experience of their forthcoming surgery, showing the hospital setting, including the operating room and equipment.

There is a growing literature describing efforts to integrate multimedia-based programs into surgical patient education.<sup>1,4,15,20,22</sup> Some studies have shown an improvement of patient recall with the use of multimedia.<sup>2,5,7,19,25</sup>

The objective of this study was to assess the efficacy of a 10-minute educational video tutorial on early learning and retention of information specific to the preoperative and postoperative shoulder arthroscopy protocol when it was used as an adjunct to the standard verbal surgeon-patient preoperative consultation. Our hypothesis is that video will improve overall satisfaction with the operative experience.

## Methods

### Development of the video

The script for the video was developed in an iterative manner. Two surgeons and a surgical resident met to compare and collate information they thought was important for the patient to know. Considering patients' educational needs, a list was compiled of educational objectives as well as indications, risks, and benefits for shoulder arthroscopy. They attempted to determine deficiencies in physician-led information by considering common questions that patients would ask before surgery or information that is poorly remembered. It was agreed that the video would emphasize the *do's* and *don't's*, reminding patients not to smoke, not to eat after midnight the day before surgery, and not to shave

the shoulder. It was also thought that the video should follow a typical patient from the preoperative clinic visit to the day of surgery and then to the follow-up appointment and physiotherapy, including an intraoperative video of a standard shoulder arthroscopy. The video did not contain any new information that was not presented during the preoperative consultation.

A script was generated and was reviewed by a linguist to remove unnecessary medical jargon. A 10-minute video was then filmed by our institution's multimedia department, using staff actors.

### Description of methodology

A single-center randomized controlled trial was conducted involving 40 consecutive patients during March 2011 to July 2012 from the practice of 2 of the study authors (I.W. and M.D.), both fellowship trained in sports medicine and working at an academic institution. Patients who required arthroscopic repair of either a rotator cuff tear or a labral tear were identified by a research assistant and enrolled in the study before returning for their preoperative consultation. Patients were eligible for inclusion in the study if they were older than 18 years and were able to participate in and complete the consultation in English without the use of a translator. They were excluded if they had undergone previous arthroscopic surgery or if they had visual or auditory impairment that would prevent them from participating.

At the preoperative consultation, the operative procedure was discussed in detail, including risks and benefits; any questions about the surgery were addressed, and informed consent was obtained. Patients were randomized to either a control or a treatment group by an independent biostatistician in a 1:1 ratio using computer-generated random numbers. Patients in the control group had a standard preoperative consultation with their surgeon. Those randomized to the treatment group also had a preoperative consultation but immediately afterward were brought by the research assistant to an adjacent examination room where they watched the video on a computer monitor without any staff present. The surgeons were blinded to the allocation of groups, and all participants received the same standard of care in their face-to-face meetings.

After this initial consultation, both groups completed a short questionnaire to measure both their satisfaction, on visual analog scales (VAS), and their recollection of the information they received, with 8 true or false statements (Table I). A component of the survey was adapted from Beischer et al,<sup>3</sup> who measured patient satisfaction with a multimedia learning tool on plantar fasciitis.

Patients then underwent shoulder arthroscopy and returned to the clinic for their first postoperative visit 2 weeks after surgery. At this time, they completed a second questionnaire that assessed satisfaction with their overall surgical experience. The treatment group also rated the corresponding perceived usefulness of the video.

### Statistical analysis

Because this was a pilot study, a power analysis was not performed. Instead, a sample size of 40 was chosen on the basis of previous studies that have compared the efficacy of multimedia technology on the education of patients.<sup>2,11,17</sup> Graphical

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