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Comparison of Understanding and Recall of Informed Consent Information in Written and Video Formats: A Focus on Retrograde Intrarenal Surgery

Yazılı ve Video Formatlarındaki Bilgilendirilmiş Onam Bilgilerinin Anlaşılması ve Geri Çağırılmasının Karşılaştırılması: Retrograd İntrarenal Cerrahiye Odaklanma

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ÖZET

Amaç: Bu çalışmanın amacı, retrograd intrarenal cerrahi (RIRS) için bilgilendirilmiş onam alınması sürecinde bir eğitim aracı olarak video kullanımının hasta anlayışı, memnuniyeti ve tercihleri üzerindeki etkisini geleneksel yazılı onam formlarına kıyasla değerlendirmektir.

Gereç ve Yöntemler: Bu çalışmaya RIRS planlanan toplam 114 hasta dahil edildi. Katılımcılar, RIRS prosedürü hakkındaki bilgilendirilmiş onamı okuduktan sonra hazırlanan soru anketini yanıtladılar. Daha sonra prosedürle ilgili bir eğitim videosu izlediler ve yazılı ve video tabanlı bilgilendirilmiş onam arasındaki bilgi ve tercihlerdeki değişiklikleri değerlendirmek için video sonrası bir anket doldurdular.

Bulgular: Bilgilendirilmiş onam sürecine videonun dahil edilmesinin, hastaların RIRS prosedürü hakkında daha doğru yanıtlar vermesine katkı sağladığı izlendi ($p<0.001$). Katılımcıların çoğunluğu (%94,5) video sunumunu yazılı onam formuna göre daha faydalı bulmuş ve geleneksel yönteme tercih etmiştir. Ek olarak, video kullanımı, prosedür hakkında bilinçli kararlar vermede artan güven ile ilişkilendirildi. Katılımcıların çoğu, videoyu kolay erişilebilir ve anlaşılır buldu ve bu da genel memnuniyetlerine katkıda bulundu.

Sonuç: Video ile zenginleştirilmiş bilgilendirilmiş onam süreci, klinik uygulamada standart bilgilendirilmiş onam sürecine değerli bir katkı olabilir. Sağlık hizmeti sunucuları, kolay erişilebilir ve anlaşılır bilgiler sağlayarak hastaların ihtiyaçlarını daha iyi karşılayabilir ve genel bakım kalitesini iyileştirebilir. Bu yaklaşım, daha iyi hasta sonuçlarına, sağlık hizmeti sağlayıcılarına artan güvene ve tıbbi bakıma daha hasta merkezli bir yaklaşıma yol açabilir.

Anahtar Kelimeler: Retrograd İntrarenal Cerrahi, aydınlatılmış onam, videoinfografi

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Approval was received for this study from the Uludağ University Faculty of Medicine Clinical Research Ethics Committee (March 18, 2020 / Decision No: 2020-5/5). The ethical rules of the Declaration of Helsinki were followed in the study protocol.

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ABSTRACT

Objective: The aim of this study was to assess the impact of using video as an educational tool in the informed consent process for retrograde intrarenal surgery (RIRS) on patient understanding, satisfaction, and preferences compared to traditional written consent forms.

Material and Methods: A total of 114 patients scheduled for RIRS participated in this study. After reading informed consent, participants completed a questionnaire assessing their baseline knowledge about the RIRS procedure. They then watched an educational video about the procedure and completed a post-video questionnaire to assess changes in knowledge and preferences between written and video-based informed consent.

Results: The results demonstrated that incorporating a video into the informed consent process led to significant improvements in patients' knowledge about the RIRS procedure ($p<0.001$). A majority of participants (94.5%) found the video presentation to be more helpful than the written consent form and preferred it over the traditional method. Additionally, the use of video was associated with increased confidence in making informed decisions about the procedure. The majority of participants found the video to be easily accessible and comprehensible, which contributed to their overall satisfaction.

Conclusion: Video-enhanced informed consent process can be a valuable addition to the standard informed consent process in clinical practice. By providing easily accessible and comprehensible information, healthcare providers can better meet patients' needs and improve the overall quality of care. This approach may lead to better patient outcomes, increased trust in healthcare providers, and a more patient-centered approach to medical care.

Keywords: Retrograde Intrarenal Surgery, informed consent, videoinfography

INTRODUCTION

Informed consent is a critical component of the ethical and legal framework in the field of medicine, particularly in surgical procedures (1). It represents the voluntary agreement of a patient to undergo a specific medical intervention after receiving comprehensive and accurate information about the nature, purpose, risks, benefits, and alternatives of the treatment (2). Informed consent not only serves as a legal protection for healthcare providers but also reinforces the shared decision-making process between the patient and the physician, fostering trust and promoting patient autonomy (2,3). Despite the importance of informed consent, studies have shown that patients may not fully understand the information provided in written consent forms due to a variety of factors, such as medical jargon, complex surgical procedures, and the inherent stress associated with the decision-making process (4,5). This raises concerns about the effectiveness of current methods in delivering informed consent information and highlights the need to explore alternative approaches to improve patient comprehension.

Retrograde intrarenal surgery (RIRS) is a minimally invasive treatment for kidney stones that involves the use of a flexible ureteroscope to access and fragment the stones within the kidney (6). Although RIRS is considered a less invasive alternative to other surgical procedures, it is not devoid of complications, making informed consent an essential aspect of patient care in this context (7).

In recent years, various educational materials have been developed to assist patients in understanding surgical procedures, including videos from academic institutions such as the European Association of Urology (EAU) Patient Information (8). However, these videos primarily serve as demonstrations of the surgical procedures rather than addressing the specific requirements of informed consent. The objective of this study is to compare the understandability and recall of informed consent information provided in written and video formats for patients undergoing RIRS.

MATERIAL AND METHODS

The written informed consent form used in this study was obtained from the Turkish Urological Association. This ensured that the content was in compliance with the established guidelines and standards for informed consent in urological procedures within Turkey, providing patients with accurate and relevant information about the risks, benefits, and alternatives of RIRS.

To enhance patient understanding and engagement, an infographic video was developed by STK and İİ, who have expertise in the field of video infographics, using Adobe After Effects™ as the primary tool for video creation. BC provided assistance throughout the development process. The video aimed to visually explain the RIRS procedure in a clear and concise manner, making it more accessible and understandable for patients.

Upon completion of the video, an audio narration was added to further supplement the visual elements. This narration included the complete text of the written informed consent form, ensuring that patients received consistent information through both the video and the written materials. By combining visual and auditory elements, the video was designed to cater to different learning preferences and improve patients' overall comprehension of the RIRS procedure and its implications.

The infographic video, which at https://youtu.be/RTnW61s9Oxo serves as a valuable educational resource for patients considering RIRS, can be accessed by making the video publicly available, we aim to facilitate informed decision-making among a broader patient population and contribute to the ongoing efforts to improve the informed consent process in urological care.

Patient Selection and Study Design

This prospective study was conducted at a tertiary referral center after obtaining approval from the institutional ethics committee (approval number: 2020-5/5) between 01.04.2020 and 30.10.2020, involving patients who underwent RIRS. Patients who declined to participate, had previously undergone RIRS, were under 18 years of age, cognitively impaired or were illiterate were excluded from the study. Upon admission for RIRS, patients provided written informed consent following a standard explanation by the physician. Subsequently, they completed a 26-item questionnaire (Appendix 1). Afterward, patients watched a 6-minute infographic video describing the RIRS procedure. A new copy of the previously administered questionnaire was given to patients, who were asked to complete it again. Throughout this process, the physician accompanied the patient and answered any questions that arose.

The first five questions focused on demographic information. The questionnaire also included a total of 14 true/false and multiple-choice questions aimed at evaluating patients' understanding of the RIRS procedure, with answers available in both the written informed consent document and the infographic video. An additional seven questions were added to the second administration of the questionnaire to assess patient satisfaction following the infographic video. These seven questions were analyzed to determine patient satisfaction levels. The responses provided before and after watching the video were compared to evaluate the potential benefits of video-assisted informed consent compared to conventional methods.

Statistical Analysis

Categorical variables were expressed as counts and related percentage values. Comparisons between the questionnaire data before and after watching the video were conducted using the McNemar test. The analyses were performed using SPSS (IBM Corp. Released 2017. IBM SPSS Statistics for Windows. Version 25.0 Armonk. NY: IBM Corp.), with a type I error rate of 5% considered statistically significant.

RESULTS

Of the 114 patients included in the study, 34 (29.8%) were female. The median age of the patients was

45.5 years. Out of the 105 patients who reported their educational status, 24 (22.9%) had a bachelor's or higher degree. When asked about their preferred learning method, 46 (40.4%) patients reported learning best by reading, 47 (41.2%) by writing, and 21 (18.4%) by watching. Demographic characteristics of the patients were listed in Table 1.

Table 1. Sociodemographic characteristics of the participants

	n	
Gender (F/M)	114	34/80
Age	114	45.5(17)
Education level	105	
Primary School		24(22.9%)
Middle School		21(20%)
High School		36(34.2%)
University		21(20%)
Graduate Degree		3(2.9%)
Learning Method	114	
Reading		46(40.4%)
Writing		47(41.2%)
		21(18.4%)

Data are presented as median (interquartile range) and n (%).

The analysis of questions 6-19, which inquired about patients' knowledge of RIRS, showed the following results. The proportion of patients who answered incorrectly before watching the video but found the correct answer after watching it were: 27.2% for question 6, 32.5% for question 7, 38.6% for question 8, 28.9% for question 9, 21.9% for question 10, 33.3% for question 11, 20.2% for question 12, 46.5% for question 13, 37.7% for question 14, 43.9% for question 15, 18.4% for question 16, 40.4% for question 17, 34.2% for question 18, and 35.1% for question 19. With the exception of question 16 (p=0.749), a statistically significant improvement in the proportion of correct answers after watching the video was observed for all other questions (p=0.008 for question 9, p=0.020 for question 12, and p<0.001 for all remaining questions) (Table 2).

Table 2. Comparison of consent form answers before and after watching the before video

		n	After Video	
Before Video	**S6/V6**		*Correct*	*Incorrect*
	Correct	114	53(46.5%)	7(6.1%)
	Incorrect		31(27.2%)	23(20.2%)
	p value[a]		**<0.001**	
Before Video	**S7/V7**		*Correct*	*Incorrect*
	Correct	114	31(27.2%)	3(2.6%)
	Incorrect		37(32.5%)	43(37.7%)
	p value[a]		**<0.001**	
Before Video	**S8/V8**		*Correct*	*Incorrect*
	Correct	114	49(43%)	10(8.8%)
	Incorrect		44(38.6%)	11(9.6%)
	p value[a]		**<0.001**	

Before Video	**S9/V9**		*Correct*	*Incorrect*
	Correct	114	40(35.1%)	14(12.3%)
	Incorrect		33(28.9%)	27(23.7%)
	p value[a]		**0.008**	
Before Video	**S10/V10**		*Correct*	*Incorrect*
	Correct	114	82(71.9%)	3(2.6%)
	Incorrect		25(21.9%)	4(3.5%)
	p value[a]		**<0.001**	
Before Video	**S11/V11**		*Correct*	*Incorrect*
	Correct	114	55(48.2%)	5(4.5%)
	Incorrect		38(33.3%)	16(14%)
	p value[a]		**<0.001**	
Before Video	**S12/V12**		*Correct*	*Incorrect*
	Correct	114	75(65.8%)	9(7.9%)
	Incorrect		23(20.2%)	7(6.1%)
	p value[a]		**0.020**	
Before Video	**S13/V13**		*Correct*	*Incorrect*
	Correct	114	44(38.6%)	4(3.5%)
	Incorrect		53(46.5%)	13(11.4%)
	p value[a]		**<0.001**	
Before Video	**S14/V14**		*Correct*	*Incorrect*
	Correct	114	59(51.8%)	3(2.6%)
	Incorrect		43(37.7%)	9(7.9%)
	p value[a]		**<0.001**	
Before Video	**S15/V15**		*Correct*	*Incorrect*
	Correct	114	41(36%)	6(5.2%)
	Incorrect		50(43.9%)	17(14.9%)
	p value[a]		**<0.001**	
Before Video	**S16/V16**		*Correct*	*Incorrect*
	Correct	114	28(24.6%)	18(15.8%)
	Incorrect		21(18.4%)	47(41.2%)
	p value[a]		0.749	
Before Video	**S17/V17**		*Correct*	*Incorrect*
	Correct	114	41(36%)	8(7%)
	Incorrect		46(40.4%)	19(16.6%)
	p value[a]		**<0.001**	
Before Video	**S18/V18**		*Correct*	*Incorrect*
	Correct	114	33(28.9%)	13(11.4%)
	Incorrect		39(34.2%)	29(25.4%)
	p value[a]		**<0.001**	
Before Video	**S19/V19**		*Correct*	*Incorrect*
	Correct	114	49(43%)	8(7%)
	Incorrect		40(35.1%)	17(14.9%)
	p value[a]		**<0.001**	

S: "Scribed"(assessment before watching the video)

V: "Video" (assessment after watching the video)

Of the participants, 65.5% believed that the information provided in the written consent form was sufficient, while 62.8% thought the surgical information in the form was explanatory. Almost 94% of participants found the information in the video to be adequate and understandable. Approximately 94.5% of participants stated that watching the video was more helpful for understanding the surgical procedure. After watching the video, 16 patients (14.2%) reported increased anxiety about the surgery, 46 patients (40.7%) reported decreased anxiety, and 51 patients (45.1%) reported no change in anxiety. Of the participants, 75 (68.2%) believed that using the video to explain the surgery saved time, while 35 (31.8%) thought it took more time. When asked to choose between the written consent form and the video, 85.8% of the participants preferred the video presentation (Table 3).

Table 3. Ratios of participants' written consent/video preferences information

	n	%
Is the information in the written consent form sufficient?		
Yes	74	65.5
No	39	34.5
Is the written consent form fully explanatory?		
Yes	71	62.8
No	42	37.2
Is the information in the video sufficient and understandable?		
Yes	106	93.8
No	7	6.2
Which was more helpful in understanding the procedure: written consent or video?		
Written consent	6	5.5
Video	104	94.5
How did the video affect your concern about the surgery?		
Increased	16	14.2
Decreased	46	40.7
Unchanged	51	45.1
Did the use of video in explaining the surgery save time or take more time?		
Saved time	75	68.2
Took more time	35	31.8
Would you prefer written consent or video explanation?		
Written Consent	16	14.2
Video	97	85.8

DISCUSSION

The main outcomes from the present study indicate that the use of infographic videos significantly improves patients' understanding of the RIRS procedure and their informed consent process. The study results demonstrated that after watching the infographic video, there was a significant increase in the number of correct answers provided by patients in response to questions related to RIRS. Several studies have similarly reported the benefits of using multimedia tools, such as videos and animations, to enhance patient comprehension in medical procedures and informed consent processes. Tait et al. found that using multimedia tools led to better comprehension and retention of information compared to traditional verbal or written methods (9). Another study conducted by Fink et al. reported that using an electronic informed consent process significantly improved patients' understanding of surgical procedures and risks involved (10).

Furthermore, the results of the present study highlight the importance of addressing different learning preferences among patients. The use of both visual and auditory elements in the infographic video caters to diverse learning styles, which can lead to improved overall comprehension (11). This approach aligns with the findings of Mayer and Moreno, who proposed that combining visual and auditory elements enhances cognitive processing and fosters better understanding of complex information (12).

The patients' perceptions regarding the usability of video as a tool for enhancing their understanding of the RIRS procedure and informed consent process were generally positive in the present study. Most participants found the video content to be both comprehensive and easily comprehensible. This is consistent with previous research highlighting the advantages of using multimedia tools in medical education and informed consent processes. A study by Rossi et al. showed that the use of video as a supplement to written informed consent significantly increased patients' comprehension of the surgical procedure, potential complications, and their rights as patients (13).

In addition, the present study revealed that a majority of patients preferred the video format over written consent forms, indicating a strong preference for visual aids in conveying complex medical information. This finding is supported by the work of Sahai et al. on informed consent in laparoscopic urology, which demonstrated that video consent positively impacted patient satisfaction (14). According to the Cognitive Theory of Multimedia Learning, integrating visual and auditory elements can lead to better retention and comprehension of information (12). By providing information in an accessible and engaging format, videos can help reduce anxiety and facilitate better decision-making among patients.

In a recent study by Eren et al, the authors investigated patients' understanding of consent forms for invasive procedures in a urology clinic, focusing on the comprehension levels across different age and education groups (15). The study utilized two intelligibility formulas specifically designed for the Turkish language, namely Ateşman and Bezirci-Yılmaz. After evaluating 69 separate consent forms, the results demonstrated that the average Ateşman intelligibility index score was 62.02, suggesting that individuals with a 9th or 10th-grade education level could comprehend the text. The Bezirci-Yılmaz index yielded an average of 11.13 points, indicating that the consent forms could be understood by those with a 10th or 11th-grade education level. The conclusion of Eren et al.'s study emphasized that the informed consent forms provided to patients before surgery were insufficient for their understanding. These findings align with previous studies in the literature, highlighting the need for improvement in the informed consent process.

The study underscores the importance of considering each country's health literacy and education levels when creating informed consent forms. This insight supports the notion that incorporating multimedia tools, such as video presentations, could help address the limitations of traditional written consent forms by enhancing patient understanding and satisfaction, as demonstrated in our study on video-enhanced informed consent for RIRS procedures.

There are several limitations of the present study that should be acknowledged when interpreting the results. First, the sample size of the study is relatively small, which may limit the generalizability of the findings to the broader population. Furthermore, the study population may not be representative of all patients undergoing the RIRS procedure, as participants were recruited from a single medical center. Second, the study design was not a validated but a pre- and post-test design without a control group, which prevents the direct comparison of the video-enhanced informed consent process to a standard informed consent process. A randomized controlled trial design would have been more robust in determining the true impact of the video on patients' understanding and perceptions. Third, the study relied on self-reported measures to assess participants' perceptions and understanding of the informed consent process. These measures may be subject to social desirability bias, as participants may feel inclined to provide favorable responses to the video intervention. Fourth, the study did not assess long-term retention of the information provided in the video, as participants were only tested immediately after watching it. It would be useful to evaluate whether the improved understanding of the procedure and informed consent process persists over time, as

this would be critical in ensuring that patients are able to make informed decisions about their care. Lastly, the study did not investigate the potential influence of participants' demographic characteristics, such as age, gender, education level, or previous experience with medical procedures, on their perceptions and understanding of the video-enhanced informed consent process. Further research is needed to explore whether these factors may affect the effectiveness of multimedia tools in medical education and informed consent processes.

CONCLUSION

In conclusion, this study suggests that using video in the informed consent process can improve patient understanding and satisfaction regarding RIRS procedures. Despite some limitations, the findings indicate that video-enhanced informed consent may be a valuable addition to clinical practice, helping to foster patient-centered care and better patient outcomes. Healthcare professionals and institutions should consider incorporating multimedia tools like videos to facilitate informed decision-making and enhance the quality of care provided.

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Ethical Approval: Approval was received for this study from the Uludağ University Faculty of Medicine Clinical Research Ethics Committee (March 18, 2020 / Decision No: 2020-5/5). The ethical rules of the Declaration of Helsinki were followed in the study protocol.

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REFERENCES

1. Horton J. Principles of biomedical ethics. Transactions of the Royal Society of Tropical Medicine and Hygiene. 2002;96(1):107. https://doi.org/10.1016/S0035-9203(02)90265-8

2. Cocanour CS. Informed consent—It's more than a signature on a piece of paper. The American Journal of Surgery. 2017;214(6):993–7. https://doi.org/10.1016/j.amjsurg.2017.09.015

3. King JS, Moulton BW. Rethinking Informed Consent: The Case for Shared Medical Decision-Making. Am J Law Med. 2006;32(4):429-501. https://doi.org/10.1177/009885880603200401

4. Paasche-Orlow MK, Taylor HA, Brancati FL. Readability Standards for Informed-Consent Forms as Compared with Actual Readability. N Engl J Med. 2003 Feb 20;348(8):721-6. https://doi.org/10.1056/NEJMsa021212

5. Flory J, Emmanuel E. Interventions to improve research participants' understanding in informed consent for research. A systematic review. American Journal of Ophthalmology. 2005 Feb;139(2):399. https://doi.org/10.1001/jama.292.13.1593

6. Türk C, Petřík A, Sarica K, Seitz C, Skolarikos A, Straub M, et al. EAU Guidelines on Interventional Treatment for Urolithiasis. Eur Urol. 2016;69(3):475-82. https://doi.org/10.1016/j.eururo.2015.07.041

7. Halawani A, Koo KC, Wong VKF, Chew BH. Preoperative patient optimization for endourological procedures: the current best clinical practice. Current Opinion in Urology. 2023;33(2):122-8. https://doi.

org/10.1097/MOU.0000000000001060

8. EAU Patient Information [Internet]. [cited 2023 Mar 8]. Available from: https://patients.uroweb.org/

9. Tait AR, Voepel-Lewis T, Moscucci M, Brennan-Martinez CM, Levine R. Patient comprehension of an interactive, computer-based information program for cardiac catheterization: a comparison with standard information. Arch Intern Med. 2009 Nov 9;169(20):1907-14. https://doi.org/10.1001/archinternmed.2009.390

10. Fink AS, Prochazka AV, Henderson WG, Bartenfeld D, Nyirenda C, Webb A, et al. Enhancement of surgical informed consent by addition of repeat back: a multicenter, randomized controlled clinical trial. Ann Surg. 2010 Jul;252(1):27-36. https://doi.org/10.1097/SLA.0b013e3181e3ec61

11. Paas F, Renkl A, Sweller J. Cognitive Load Theory and Instructional Design: Recent Developments. Educational Psychologist. 2003 Jan 1;38(1):1-4. https://doi.org/10.1207/S15326985EP3801_1

12. Mayer RE, Moreno R. Nine Ways to Reduce Cognitive Load in Multimedia Learning. Educational Psychologist. 2003 Jan 1;38(1):43-52. https://doi.org/10.1207/S15326985EP3801_6

13. Rossi MJ, Guttmann D, MacLennan MJ, Lubowitz JH. Video Informed Consent Improves Knee Arthroscopy Patient Comprehension. Arthroscopy: The Journal of Arthroscopic & Related Surgery. 2005 Jun;21(6):739-43. https://doi.org/10.1016/j.arthro.2005.02.015

14. Sahai A, Kucheria R, Challacombe B, Dasgupta P. Video consent: a pilot study of informed consent in laparoscopic urology and its impact on patient satisfaction. JSLS. 2006;10(1):21-5.

15. Taş S, Eren AE. Evaluation intelligibility of urology consent forms. Endourol Bull. 2022 Sep 30;14(3):57-62. https://doi.org/10.54233/endouroloji.1161827