

Comparison of Educational and Academic Quality of Laparoscopic Distal Pancreatectomy Videos on WebSurg[®] and YouTube[®] Platforms

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Abstract

Background: The aim of this study was to compare the educational and academic quality of laparoscopic distal pancreatectomy (LDP) videos on YouTube[®] and WebSurg[®] platforms.

Material and Methods: YouTube and WebSurg platforms were searched with the keyword “laparoscopic distal pancreatectomy”. According to the exclusion criteria, 12 videos were found on WebSurg. To ensure a 1:1 ratio, the first 12 videos that met the criteria on YouTube were also analyzed. Journal of American Medical Association (JAMA) benchmark criteria were used to evaluate the reliability of the videos. The non-educational quality of the videos was calculated using the Global Quality Score (GQS), the educational and academic quality of videos was calculated using Laparoscopic Distal Pancreatectomy-specific score (LDP-SS) and Laparoscopic Surgery Video Educational Guidelines scoring system (LAP-VEGaS).

Results: The mean JAMA score was 1.58 on YouTube and 2.83 on WebSurg ($P < .001$). The median GQS was 2 on YouTube and 5 on WebSurg ($P < .001$). The median LAP-VEGaS score was 8 on YouTube and 14.5 on WebSurg ($P < .001$). The median LDP-SS score was 6 on YouTube and 9.5 on WebSurg ($P = .001$). According to the LAP-VEGaS, eleven (91.7%) of the WebSurg videos had a high score of 11 or more ($P = .04$). According to Spearman correlation analysis, there was a statistically significant positive correlation between LDP-SS and JAMA, GQS and LAP-VEGaS ($r: .589, P = .002$; $r: .648, P = .001$; $r: .848, P < .001$ respectively).

Conclusions: The WebSurg is superior to the YouTube in terms of educational and academic value, quality, accuracy, reliability and usability in scientific meetings for LDP videos.

Keywords

laparoscopic distal pancreatectomy, youtube, websurg, educational quality, web-base education, surgical videos

Introduction

Surgery is the main treatment approach for pre-malignant and malignant lesions of the pancreas. With the introduction of laparoscopy, the first laparoscopic distal pancreatectomy (LDP) was performed in 1996.¹ In the LEOPARD study,² a multicenter randomized controlled trial, it was shown that LDP has similar morbidity, shorter hospital stay, and less amount of bleeding as open distal pancreatectomy (ODP), and thus recommended as a standard method in the 2019 Miami International Evidence-based Guidelines on Minimally Invasive Pancreas Resection.³ Training programs have been developed for LDP and include virtual reality simulations, biotissue models to practice dissection, surgical video reviews and on-site proctoring.⁴ Online training platforms have recently been developed for these video-based trainings and the role

of internet-based platforms in surgical education has increased due to the COVID-19 pandemic.^{5,6}

YouTube is the most popular web-based platform. With over 2.5 billion users and 500 h of new videos uploaded every minute, it is easily accessible and free.^{7,8} Although it is very useful in video-based surgery training,^{9,10} it is a platform where incomplete and wrong information is common because it does not have a peer-review process and allows uploading by all users.^{11,12} Peer-review websites have been created to increase the accuracy of video

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content. One of these is the WebSurg platform which is the peer-review online academy of the Research Institute Against Cancers of the Digestive System (IRCAD) in France, that offers training in minimally invasive surgical procedures.¹³ Educational videos prepared by surgeons who are considered experts in their field are uploaded to the site under peer-review supervision. Although, there are limited number of studies comparing the quality and accuracy of surgical procedures on online platforms and the data is discrete, it is debated that WebSurg's video content is more accurate than YouTube's.¹⁴ In the studies where the accuracy, quality and reliability of videos in YouTube and Websurg platforms were compared for laparoscopic gastrectomy and hysterectomy procedures,^{14,15} WebSurg was found superior to YouTube; on the other hand, the studies conducted for adrenal¹⁶ and morbid obesity surgeries¹⁷ could not display a superiority. As a result, it is still up for argument whether of these two platforms is better than the other.

Currently, there are only two studies in the literature evaluating the videos of LDP on the online platforms. In the first study, LDP videos before and after the COVID-19 pandemic on the YouTube platform were compared and it was stated that the video quality was insufficient in terms of education.¹⁸ In the other study, the 30 most viewed LDP videos on the YouTube platform were examined and it was emphasized the videos were insufficient in terms of educational quality.¹⁹ As far as we know, there is no study in the literature comparing LDP videos on WebSurg and YouTube platforms.

The aim of this study was to compare the educational and academic quality, reliability and accuracy of LDP videos on YouTube and WebSurg platforms.

Material Methods

Video and Data Extraction

The selection of the videos to be examined in this study was made by entering the keyword "laparoscopic distal pancreatectomy" in the search engine on the WebSurg and YouTube platforms on March 26, 2023. While videos titled LDP were included in the study, videos with spleen preserving-LDP, enucleation, robotic resection, single incision and another additional intervention were excluded.

The videos were reviewed independently by two surgeons (H.A.D., O.C.) who were senior surgeons at a university hospital, fluent in English and experienced in laparoscopy. Videos with discrepancies between the two evaluations were reviewed by a third surgeon who is a mentor in minimally invasive pancreatic surgery (A.B.D.). Video source, country of upload, image quality, duration, upload date and days since upload date, number of views, number of likes, presence of sound narration or silent, number of comments were recorded.

Technical analyses were calculated as like/view ratio and view ratio (view/day). Video power index (VPI) could not be used because there is no dislike option on the WebSurg platform and the number of dislikes has not been shown on the YouTube platform since November 10, 2021.²⁰

According to the source, videos were categorized as academic, physician, commercial and videos that did not specify a surgeon name were categorized as private practice.

Scoring and Grading Systems

The Journal of the American Medical Association (JAMA) benchmark criteria was used to assess video accuracy and reliability.²¹ According to this system, scoring was done between 0 and 4 points (Table 1). 0 was considered poor accuracy and reliability, while 4 was considered excellent. All videos on the WebSurg platform were considered to have disclosure due to the website's own privacy policies.

The Global Quality Score (GQS) was used to evaluate the nonspecific educational quality of videos.²² Accordingly, five categories were evaluated (Table 2).

The presentation and content of the videos were analyzed using the most recently published validated version of the Laparoscopic Surgery Video Educational Guidelines (LAP-VEGaS) video assessment tool, which is used to measure the acceptability of laparoscopic videos in conferences and education.^{23,24} Scoring was performed between 0-18 points (Table 3) and 11 points and above was considered as 'high quality'.²⁴

The LDP-scoring system (LDP-SS) was created to evaluate whether the operation technique for LDP was

Table 1. Journal of American Medical Association (JAMA) Benchmark Criteria.

Criteria	Description
Authorship	Authors and contributors, their affiliations, and relevant credentials should be provided
Attribution	References and sources for all content should be listed clearly, and all relevant copyright information noted
Disclosure	Web site "ownership" should be prominently and fully disclosed, as should any sponsorship, advertising, underwriting, commercial funding arrangements or support, or potential conflicts of interest
Currency	Dates that content was posted and updated should be indicated

Table 2. Global Quality Score (GQS) Criteria.

Grade	Description
1	Poor quality and unlikely to be of use for patient education
2	Poor quality and flow; somewhat useful to patients because some information is present
3	Suboptimal quality and flow; somewhat useful to patients; important topics are missing; some information is present
4	Good quality and flow; useful to patients because most important topics are covered
5	Excellent quality and flow; highly useful to patients

Table 3. Laparoscopic Surgery Video Educational Guidelines (LAP-VEGaS) Video Assessment Tool.

	Not Presented (0)	Presented, Partially (+1)	Presented, completely (+2)
1 Authors and institution information. Title of the video including name of the procedure and pathology treated	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2 Formal presentation of the case, including patient details and imaging, indication for surgery, comorbidities and previous surgery. Patient anonymity is maintained	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3 Position of patient, access ports, extraction site and surgical team	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4 The surgical procedure is presented in a standardised step by step fashion	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5 The intraoperative findings are clearly demonstrated, with constant reference to the anatomy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6 Relevant outcomes of the procedure are presented, including operating time, postoperative morbidity and histology when appropriate	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7 Additional graphic aid is included such as diagrams, snapshots and photos to demonstrate anatomical landmarks, relevant or unexpected finding, or to present additional educational content	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8 Audio/written commentary in English language is provided	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9 The image quality is appropriate with constant clear view of the operating field. The video is fluent with appropriate speed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

adequately explained (Table 4). This scoring system was developed by modifying the French Association of Hepatobiliary Surgery and Liver Transplantation 2013 recommendation,²⁵ the International Study Group on Minimally Invasive Pancreas Surgery 2019 Miami Guideline,³ and the Study Group of Precision Anatomy for Minimally Invasive Hepato-Biliary-Pancreatic Surgery 2022 recommendation.²⁶ Scoring was made out of 13 points and 0 was accepted as the lowest and 13 as the highest point in terms of explaining the LDP technique.

Statistical Analysis

Statistical analysis was performed using SPSS® version 21 (IBM corp, Chicago, IL). Ratio (percentage) values were given for categorical variables, median and interquartile range (IQR) for ordinal and numerical variables. Chi-square test and Fisher's exact test were used to compare nominal variables. Ordinal variables and numerical variables were compared using Mann-Whitney U test. The relationship between JAMA, GQS, LAP-VEGaS score and LDP-SS was evaluated using Spearman

Table 4. Laparoscopic Distal Pancreatectomy Specific Score (LDP-SS).

Patient Position
Surgeon position
Number and location of trocars
Direction of dissection
Vascular control (artery/vein)
Ultrasound
Site of pancreatic transection
Technique of parenchymal transection
Taking the specimen out of the body
Drain placement
Final check and closure
Postoperative complications information
Pathological results

correlation analysis. Evaluation of inter and intra-rater agreement for each score was analyzed using intraclass correlation coefficient (ICC) estimates and their 95% confidence intervals (CI) based on mean rating ($k = 2$), consistency, two-way random model.²⁷ ICC was classified as poor (.00-.50), moderate (.50-.75), good (.75-.90)

and excellent (.90 and more) reliability.^{27,28} In the analyses, $P < .05$ was considered statistically significant.

Results

A search was made by typing “laparoscopic distal pancreatectomy” into the WebSurg platform search engine, and a total of 30 videos were found. One video with the title “portal vein tumor thrombous + vein resection”, six videos with the title “spleen preservation”, two videos with the title “enucleation + distal pancreatectomy”, three videos with the title “robotic distal pancreatectomy”, one video with the title “central pancreatectomy”, 13 videos in total were excluded from the study and the remaining 17 videos were included in the study. When these videos were analyzed, it was determined that spleen-sparing LDP was described in four videos and laparoscopic pancreaticoduodenectomy was described in one video, and these five videos were also excluded from the study. In total, 12 videos on the WebSurg platform were included in the study.

The keyword “laparoscopic distal pancreatectomy” was entered into the search engine on the YouTube platform. The videos were sorted by “most relevant”, videos with titles of “spleen preserving” and “single incision procedure” and videos in which only part of the procedure were explained or only in the form of animation were excluded from the study. With the other platform, it was aimed to examine videos at a ratio of 1:1. The first 17 videos that met the criteria were recorded as playlists. Since 12 videos were included in the study due to the content on the WebSurg platform, it was aimed to analyze the first 12 videos of this playlist. Of the videos in the playlist, four videos were excluded because two videos of spleen-sparing LDP, one video of hand assisted LDP, and one video of only part of the surgery were explained, and the last video in the playlist was not analyzed because the target number of 12 videos was reached. A total of 24 videos were reviewed (Figure 1).

The comparison of the video characteristics of YouTube and WebSurg platforms was summarized in Table 5. All videos analyzed on both platforms were related to surgical technique in terms of content. All videos on WebSurg had simultaneous audio narration of the surgery, whereas only five (41.7%) videos on YouTube had audio narration ($P = .05$).

The technical comparison of the videos on the platform was summarized in Table 6. There was no statistically significant difference between the videos on the two platforms in terms of median video length, time since upload, number of views, number of likes, like/view, and number of comments.

The number of discrepancies between the two raters that required the third rater (A.B.D.) out of the total 24 videos analyzed were as follows: two videos for JAMA

score, nine videos for GQS, 11 videos for LAP-VEGaS score, and six videos for LDP-SS. The ICC of YouTube platform were .92 (95% CI, .71-.98), .90 (95% CI, .64-.97), .98 (95% CI, .93-.99), and .98 (95% CI, .92-.99) for JAMA score, GQS, LAP-VEGaS and LDP-SS, respectively. The ICC of WebSurg platform were .78 (95% CI, .25-.94), .81 (95% CI, .33-.95), .96 (95% CI, .87-.99), and .98 (95% CI, .91-.99) for JAMA score, GQS, LAP-VEGaS and LDP-SS, respectively. They all showed good and excellent reliability.

When the two platforms were compared in terms of JAMA score, GQS and LAP-VEGaS scores, the videos on the WebSurg platform had statistically significantly higher scores ($P < .001$, $<.001$, $<.001$ respectively).

When comparing using the JAMA benchmark criteria, authorship was specified in all videos on the WebSurg platform, whereas it was specified in seven (58.3%) of the videos on the YouTube platform ($P = .037$). Attribution was mentioned in only one (8.3%) video on the WebSurg platform, but in none on the YouTube platform. Currency was not mentioned in any video on both platforms. All videos on the WebSurg platform were considered to have disclosure, whereas none of the videos on the YouTube platform had a disclosure ($P < .001$).

The median GQS of the videos on the YouTube (2 [IQR 2-3.75]) and the WebSurg platforms (5 [IQR 4-5]) were significantly different ($P < .001$). In terms of non-specific educational quality according to GQS, three (25%) videos were rated as Grade 4 and 5 (ie: good and excellent quality, respectively) on the YouTube platform. However, all videos on the WebSurg platform were rated as Grade 5 (excellent quality) ($P < .001$).

While four (33.3%) of the videos on the YouTube platform scored higher than 11 on the LAP-VEGaS scoring, eleven (91.7%) videos on the WebSurg platform scored higher than 11 ($P = .04$). When the LAP-VEGaS criteria were analyzed, all criteria except seventh parameter were found to have a statistically significant higher score on the WebSurg platform (Table 7).

When LDP-SS values were compared, videos on the WebSurg platform had statistically significantly higher scores ($P = .001$). When the LDP-SS criteria were analyzed, patient position was mentioned in 10 (83.3%) videos on the WebSurg platform and three (25%) videos on the YouTube platform ($P = .004$). Surgeon position was present in eight (66.7%) videos on the WebSurg platform and three (25%) videos on the YouTube platform ($P = .041$). Similarly, number and location of trocars were mentioned in nine (75%) videos on the WebSurg platform, whereas it was mentioned in four (33.3%) videos on the YouTube platform ($P = .041$). Taking specimen out was mentioned in 10 (83.3%) videos on the WebSurg platform and in three (25%) videos on the YouTube platform ($P = .012$). No statistically significant difference was found in other parameters (Table 8).

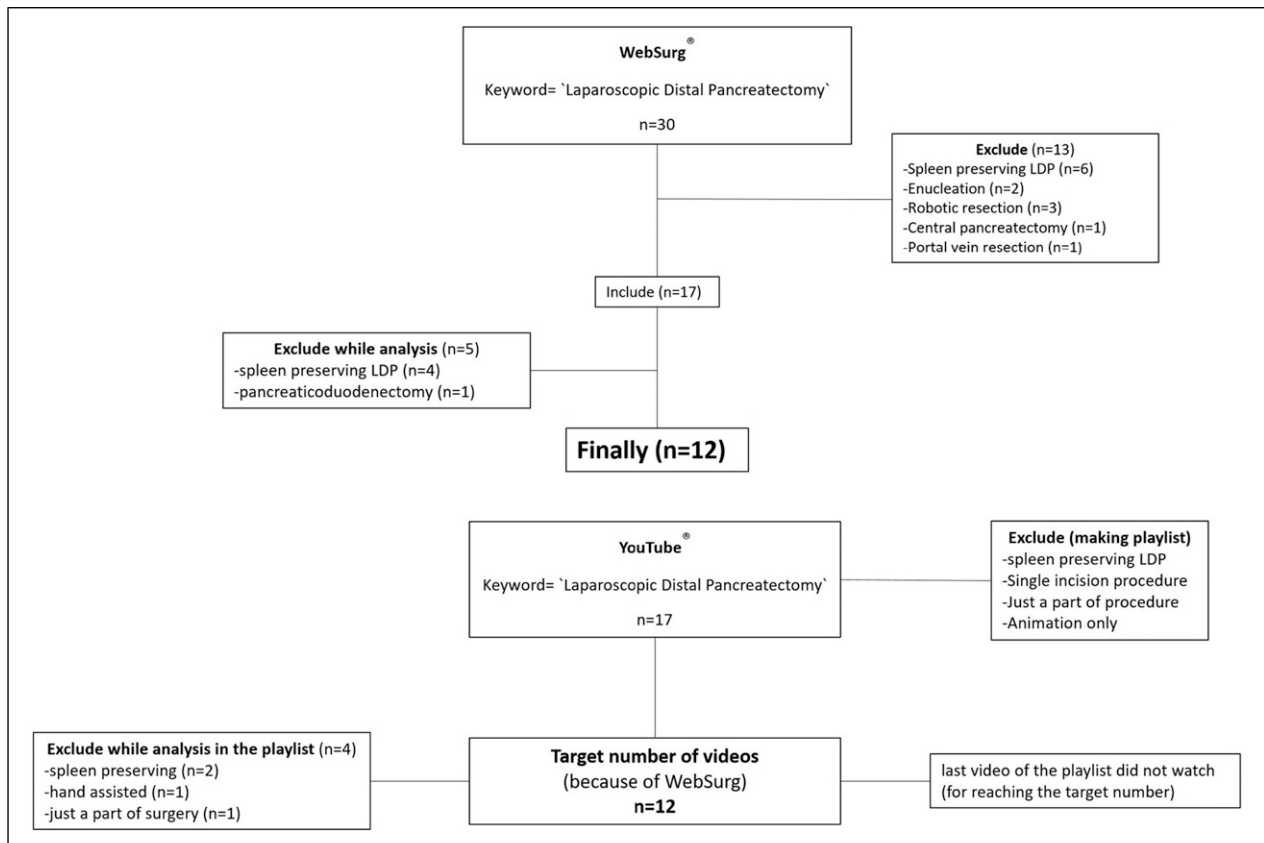


Figure 1. Flow chart for video selection. LDP, laparoscopic distal pancreatectomy.

When Spearman correlation analysis was performed, it was revealed that there was a significant correlation between LDP-SS and JAMA, GQS and LAP-VEGaS (r : .589, $P = .002$; r : .648, $P = .001$; r : .848, $P < .001$ respectively).

Discussion

This study has showed that the videos on the WebSurg platform regarding LDP have higher accuracy and reliability, have higher non-specific educational quality, are more usable in training and scientific meetings, have higher educational and academic quality, and are superior in explaining the LDP technique than those on the YouTube platform.

Minimally invasive pancreatic surgeries are technically classified as complex surgeries due to its deep anatomical location, and being surrounded by visceral structures such as the colon, stomach, and spleen, and also, the high risk of bleeding since its close relationship with major vascular structures.^{29,30} Thus, minimally invasive pancreatic surgeries started to be performed later compared to other laparoscopic surgeries, and the first LDP was performed in 1996 by Cusher et al.¹ Recent studies showed that LDP is associated with a shorter hospital stay, less bleeding, less

morbidity, similar pancreatic fistula rates and similar oncologic outcomes compared to ODP.^{2,31-33} Training programs for LDP have been developed to accelerate the learning curve, which is defined as 10-40 surgeries, improve surgical outcomes and increase patient safety.^{4,34-36} The 2019 Miami Guidelines recommended that a structured training program should include visual reality simulation, inanimate biotissue models to practice dissection and anastomotic techniques, surgical video review, on-site proctoring, and remote tele-mentorship.³

The basis of surgical training is Halstedian training based on practice in which trainees develop their knowledge, technique and decision-making skills under the supervision of expert trainers.³⁷ However, it is thought that the opportunities for residents to perform basic surgeries have decreased due to the increase in the number of residents, reduction in working hours, and the tendency towards subspecialization.³⁸⁻⁴² These factors have contributed to the rise in popularity of video-based training techniques. With the advancement of technology, the recordability of laparoscopic surgeries has improved which resulted in easily accessible, structured videos with the right content prepared by experts have been used in surgical training for some time.⁴³ Moreover, the role of this educational tool has

Table 5. The Characteristics of Videos on YouTube and WebSurg Platforms.

		YouTube (n = 12) (n) (%)	WebSurg (n = 12) (n) (%)	P value
Source	Academic	1 (8.3%)	3 (25%)	
	Physician	8 (66.7%)	9 (75%)	
	Private practice	2 (16.7%)	0 (0%)	
	Commercial	1 (8.3%)	0 (0%)	
Country	USA	2 (16.7%)	4 (33.3%)	
	France	1 (8.3%)	4 (33.3%)	
	Portugal	0 (0%)	3 (25%)	
	Spain	0 (0%)	1 (8.3%)	
	India	3 (25%)	0 (0%)	
	Turkey	2 (16.7%)	0 (0%)	
	Poland	1 (8.3%)	0 (0%)	
	Canada	1 (8.3%)	0 (0%)	
	Azerbaijan	1 (8.3%)	0 (0%)	
	Unkown	1 (8.3%)	0 (0%)	
Image quality	Poor	3 (25%)	0 (0%)	.056
	Good	5 (41.7%)	4 (33.3%)	
	High definition	4 (33.33%)	8 (66.7%)	
Background sound	Speech	5 (41.7%)	12 (100%)	.005
	Silent	6 (50%)	0 (0%)	
	Music	1 (8.3%)	0 (0%)	

Table 6. Technical Analysis of Videos.

	YouTube (n = 12) median (IQR)	WebSurg (n = 12) median (IQR)	P Value
Duration (second)	517 (346-1048.25)	916.5 (822.5-1291.25)	.057
Time since upload (days)	1352 (761.25-2306.5)	2144.5 (1629.75-2801.75)	.106
Number of views	1950.5 (376-9773.25)	4413.5 (3142.75-5818.5)	.299
Number of likes	19 (3.75-126.5)	62 (23-272.25)	.069
Like/view ratio	.013 (.005-.013)	.215 (.008-.35)	.083
View ratio	.904 (.382-8.398)	2.381 (.994-4.724)	.564
Number of comment	1 (0-8)	0 (0-1)	.12
JAMA score	2 (1-2)	3 (3-3)	<.001
GQS score	2 (2-3.75)	5 (4-5)	<.001
LAP-VEGaS score	8 (4-11)	14.5 (13.25-15.75)	<.001
LDP-SS score	6 (4-7)	9.5 (8-10)	.001

IQR: interquartile range; JAMA, Journal of American Medical Association; GQS, Global Quality Score; LAP-VEGaS, Laparoscopic Surgery Video Educational Guidelines; LDP-SS, Laparoscopic Distal Pancreatectomy Spesific Score.

become even more important due to the impact of the COVID-19 pandemic.⁴⁴ Medical education has also been affected by these developments and online video platforms have become more popular and more frequently used, especially by young surgeons. The two most frequently used platforms by residents in surgical education are YouTube and WebSurg platforms.⁴⁵

YouTube is the most commonly used video platform with over 122 million daily visitors due to its easy accessibility and being free of charge, however, many studies have addressed the poor quality of videos uploaded.^{46,47} The quality of videos on the YouTube platform was first analyzed by Keelan et al,⁴⁸ which was then followed by the diciplines as general surgery,^{49,50}

Table 7. Laparoscopic Surgery Video Educational Guidelines (LAP-VEGaS) Analysis.

LAP-VEGaS criterias	YouTube (n = 12) median (IQR)	WebSurg (n = 12) median (IQR)	P Value
1	2 (.25-2)	2 (2-2)	.015
2	.5 (0-1.75)	2 (.5-2)	.045
3	0 (0-1.5)	2 (1.25-2)	.008
4	1 (1-2)	2 (2-2)	.011
5	1 (.25-2)	2 (2-2)	.002
6	0 (0-0)	0 (0-1.75)	.08
7	.5 (0-1)	.5 (0-2)	.571
8	.5 (0-2)	2 (2-2)	.003
9	.5 (0-2)	2 (2-2)	.001

Table 8. Laparoscopic Distal Pancreatectomy Specific Score (LDP-SS) Analysis.

LDP-SS Parameters		YouTube (n = 12) (n) (%)	WebSurg (n = 12) (n) (%)	P value
Patient position	Yes	3 (25%)	10 (83.3%)	.004
	No	9 (75%)	2 (16.7%)	
Surgeon position	Yes	3 (25%)	8 (66.7%)	.041
	No	9 (75%)	4 (33.3%)	
Number and location of trocars	Yes	4 (33.3%)	9 (75%)	.041
	No	8 (66.6%)	3 (25%)	
Direction of dissection	Yes	11 (91.7%)	12 (100%)	1
	No	1 (8.3%)	0 (0%)	
Vasculary control	Yes	12 (100%)	11 (91.7%)	1
	No	0 (0%)	1 (8.3%)	
Ultrasound	Yes	1 (8.3%)	3 (25%)	.273
	No	11 (91.7%)	9 (75%)	
Site of pancreatic transection	Yes	9 (75%)	12 (100%)	.217
	No	3 (25%)	0 (0%)	
Technique of transection	Yes	11 (91.7%)	12 (100%)	1
	No	1 (8.3%)	0 (0%)	
Taking the specimen out	Yes	3 (25%)	10 (83.3%)	.012
	No	9 (75%)	2 (16.7%)	
Drain placement	Yes	4 (33.3%)	7 (58.3%)	.414
	No	8 (66.7%)	5 (41.7%)	
Final check and closure	Yes	6 (50%)	4 (33.3%)	.68
	No	6 (50%)	8 (66.7%)	
Postoperative complications information	Yes	1 (8.3%)	5 (41.7%)	.059
	No	11 (91.7%)	7 (58.3%)	
Pathological findings	Yes	3 (25%)	4 (33.3%)	.653
	No	9 (75%)	8 (66.7%)	
LAP-VEGaS score ≥ 11	Yes	4 (33.3%)	11 (91.7%)	.04
	No	8 (66.7%)	1 (8.3%)	

gynecology,⁵¹ urology,⁵² plastic surgery,⁵³ orthopedics.⁵⁴ The medical and educational value of videos on the YouTube platform has been examined in many fields including LDP. There are only two studies evaluating the quality of LDP videos on the YouTube platform.^{18,19} The first study on pancreatic surgery videos published by Erozkan et al in 2022 compared the VPI, GQS and specific scores developed by the authors of the videos uploaded before and after the COVID-19

pandemic of LDP videos. They showed that the average GQS before the pandemic was 2 and VPI was .22, while the average GQS after the pandemic was 4 and VPI was .38 which were statistically significant ($P < .001$ and $P = .046$, respectively).¹⁸ The major limitations of the mentioned study was it excluded videos with a duration of less than 10 minutes, and the video review date of the study was January 2022, a date after the YouTube platform removed the number of dislikes, so it was not

specified how the VPI was calculated without the number of dislikes. In our study, though, we analyzed the first 12 “most relevant” videos independent of duration that met the inclusion criteria in the YouTube platform and the median GQS was 2 (IQR 2-3.75), similar to the study of Erozkhan et al. In this study, only authorship and attribution were analyzed in terms of JAMA criteria, but no numerical value was specified. However, in our study, the median JAMA score of videos on the YouTube platform was calculated as 2 (IQR 1-2). The second study was conducted by Tan et al in 2023 which included the first 30 videos on the YouTube platform on LDP that also included spleen-sparing LDP. The videos were scored according to the LAP-VEGaS criteria, the average score was stated as 9.3, and it was interpreted as having gaps for meeting the needs of training.¹⁹ Similarly, we calculated the median LAP-VEGaS score of the videos on the YouTube platform as 8 (IQR 4-11) and we also think that the videos lack the sufficiency for educational and academic use.

As mentioned above, due to criticisms of the low educational quality of the videos on the YouTube platform, comparisons with the WebSurg platform, the second most preferred platform by trainees, have begun to be made. The WebSurg features English-language training videos of surgeries performed by expert surgeons in many fields, prepared after a certain editing protocol. There is a membership system that is free of charge, available only to health care professionals, not open to the public and the membership process is audited.^{13,55} Due to such an evaluation process, the reliability and educational content of the videos on the WebSurg platform are considered to be better and studies comparing these two platforms are being conducted. In a study that compared laparoscopic gastrectomy videos, the WebSurg platform was found to have a higher score in terms of quality and education.¹⁵ In another study investigating the critical view of safety in laparoscopic cholecystectomy, the WebSurg platform was reported to be more satisfactory than the YouTube platform.⁵⁶ Similarly, in a study of laparoscopic hysterectomy videos, the education and quality of videos on WebSurg platform was found higher. In this study, the LAP-VEGaS score was found to be higher on the WebSurg platform than on the YouTube platform ($P = .001$).¹⁴ In another study comparing laparoscopic sleeve gastrectomy between the two platforms, the average GQS was 3.7, JAMA was 3.3 on the WebSurg platform, in comparison to GQS being 3, JAMA being 1.9 on the YouTube platform ($P = .035, .002$, respectively).¹⁷ Similarly, in our study, we showed that median GQS was 5 (IQR 4-5) and JAMA was 3 (IQR 3-3) on the WebSurg platform; however, they were 2 (IQR 2-3.75) and 2 (IQR 1-2), respectively on the YouTube

platform ($P < .001, <.001$, respectively). In another study comparing thoracoscopic lobectomy videos in children on WebSurg and YouTube platforms, it was reported that the LAP-VEGaS score was 11 points higher in all videos on the WebSurg platform and only three videos on the YouTube platform ($P = .01$).⁵⁷ The authors concluded that the videos on the WebSurg platform had higher quality and reliability than the YouTube platform. In contrast, a study evaluating the laparoscopic adrenalectomy videos reported that both forms were not superior to each other.¹⁶ According to LAP-VEGaS scoring, scores 11 and above indicate the acceptability of videos for scientific meetings and training purposes with a sensitivity of 94% and specificity of 73%.²⁴ In our study most of the videos (91.7%) on the WebSurg platform scored ≥ 11 in comparison to 33.3% of YouTube videos ($P = .04$). To the best of our knowledge, our study is the first study comparing videos on both platforms in the field of pancreatic surgery and LDP surgery. It is also the first study to analyze JAMA, GQS and LAP-VEGaS criteria concomitantly in this field. In our study, we showed that the WebSurg platform was superior to the YouTube platform in terms of LAP-VEGaS score in all but the seventh item, as well as the LDP-SS score in patient position, surgeon position, number and location of trocars and taking the specimen out, and also the background sound in English. As a result, our study demonstrated that the videos about LDP on the WebSurg platform were superior to the YouTube videos in terms of accuracy, reliability, non-educational and educational quality.

This study has several limitations. The major limitation of our study was the lower number of videos and views included when compared to other studies since LDP surgery is a less common surgery performed only in specialized centers. Therefore, the number of videos on WebSurg platform were limited. In addition, it is not known how the videos were ranked in the YouTube “most relevant” algorithm. Instead, if YouTube’s “most popular” videos had been chosen, the outcome would have been different. Another limitation of this study was that the LDP-SS score developed by the authors of the current study was not validated. However, subjective items such as “the intra-operative findings are clearly demonstrated with constant reference to anatomy” are included in the LAP-VEGaS criteria, causing a quandary in video evaluation. Although unvalidated, the LDP-SS developed by the authors of this study in accordance with current guidelines is useful for better evaluating videos on a challenging surgery such as distal pancreatectomy. On the other hand, our study has some strengths. This is the first study that compared the video quality of LDP on the two most commonly used platforms by healthcare professionals. In addition, the

comparisons was held by using four different scoring systems which we believe increases the accuracy of our results. Lastly, we excluded the splenic sparing LDP videos during our analyses contrary to other studies.

Conclusion

WebSurg platform is superior to YouTube platform in terms of academic and educational value, quality, accuracy, reliability and acceptance in scientific meetings for LDP videos. However, the educational quality of the YouTube platform can be improved by preparing video content in accordance with the LAP-VEGaS criteria. Peer-reviewed videos should be preferred over low quality videos on YouTube platform for invasive procedures, especially when it is a more complex and specialized surgery.

Author Contributions

Author 1: Conceptualization (lead), video analysis, statistical analysis, writing (equal) and editing; Author 2: video analysis, writing (equal); Author 3: analysis of videos with discrepancies, review.

Declaration of Conflicting Interests

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Ethical Statement

Ethical Approval

Ethical approval was not required for this study since no direct interaction with patients was needed and no personal data was used.

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