KBB Uygulamaları 2024;12(2):70-75

Original Article / *Özgün Makale*

OPEN ACCESS

Analyzing the contribution of sialoendoscopy videos on YouTube to surgical education and patient information

YouTube'daki sialoendoskopi videolarının cerrahi eğitime ve hasta bilgilendirmesine katkısının incelenmesi

Fatih Savran[1], Emrah Uğurlu[2], Ayşe Aslı Yılmaz[3]

[1]*Department of Otolaryngology, İstanbul Private Sancaktepe Bölge Hospital, İstanbul, Türkiye*
[2]*Department of Otolaryngology, Private Çevre Hospital, İstanbul, Türkiye*
[3]*Department of Otolaryngology, Kartal Training and Training Hospital, İstanbul, Türkiye*

ABSTRACT

Objectives: The study aimed to show the contribution of videos made on sialoendoscopy on YouTube to surgical education and patient information.

Materials and Methods: A search on YouTube was performed for the term "sialendoscopy" without any changes to the standard search preferences between 15.01.2022 and 15.03.2022. Sixty-three videos about sialoendoscopy were found in the video scan. Sixteen videos were excluded from the study because they lacked audio. Ten videos were excluded for being repetitive. One video was excluded because it was in a non-English language. A total of 36 videos on the DISCERN score, JAMA score, and Global Quality Scale (GQS) were evaluated by two independent doctors. Two independent reviewers separately scored videos using a customized usability scoring scheme and evaluated video duration, views, days after upload, likes, and dislikes.

Results: The total number of views of the videos was 624,893. The total duration of these videos was 374 min. The DISCERN, JAMA and GQS scores were found to be of poor quality.

Conclusion: Doctors should be aware of this social media to raise awareness about sialolithiasis and to help patients distinguish misleading and useful information. YouTube is currently not a suitable resource for patients to learn about sialolithiasis. It is also not a suitable resource for doctors. Therefore, doctors should be more willing to provide peer-reviewed and more informative resources.

Keywords: Academic performance, endoscopy, salivary gland calculi, sialadenitis, video analysis, YouTube.

ÖZ

Amaç: Bu çalışmanın amacı, YouTube'da yapılan sialoendoskopi videolarının cerrahi eğitime ve hasta bilgisine katkısını göstermekti.

Gereç ve Yöntemler: "Sialendoskopi" terimiyle YouTube'da, standart arama tercihlerinde herhangi bir değişiklik yapılmadan 15.01.2022 - 15.03.2022 tarihleri arasında bir arama gerçekleştirildi. Video taramasında sialoendoskopi ile ilgili 63 video bulundu. Ses eksikliği nedeniyle 16 video çalışmadan dışlandı. On video tekrarlayıcı olduğu için dışlandı. Bir video, İngilizce dışında bir dilde olduğundan dışlandı. DISCERN puanı, JAMA puanı ve GQS (Global Quality Scale) üzerinden toplam 36 video, iki bağımsız doktor tarafından değerlendirildi. İki bağımsız gözlemci, özel bir kullanılabilirlik puanlama şemasını kullanarak videoları ayrı ayrı değerlendirdi ve video süresi, görüntülenme sayısı, yükleme tarihinden gün sayısı, beğenileri ve beğenilmemeleri değerlendirdi.

Bulgular: Videoların toplam görüntüleme sayısı 624,893 idi. Videoların toplam süresi 374 dk idi. DISCERN, JAMA ve GQS puanları zayıf kalitede bulundu.

Sonuç: Doktorlar sialolitiazis hakkındaki farkındalığı artırmak ve hastaların yanıltıcı ve faydalı bilgileri ayırt etmelerine yardımcı olmak amacıyla bu sosyal medyanın farkında olmalıdır. Şu anda YouTube, hastaların sialolitiazis hakkında bilgi edinmesi için uygun bir kaynak değildir. Aynı şekilde doktorlar için de uygun bir kaynak değildir. Bu nedenle, doktorlar, hakem incelemeli ve daha bilgilendirici kaynaklar sunmaya daha istekli olmalıdır.

Anahtar sözcükler: Akademik performans, endoskopi, tükürük bezi taşları, sialadenit, video analizi, YouTube.

Received: January 21, 2024
Accepted: June 03, 2024
Published online: June 11, 2024

Correspondence: Fatih Savran, MD.
E-mail: fatih.savran@hotmail.com

Doi: 10.5606/kbbu.2024.03264

Citation:
Savran F, Uğurlu E, Yılmaz AA. Analyzing the contribution of sialoendoscopy videos on YouTube to surgical education and patient information. KBB Uygulamaları 2024;12(2):70-75. doi: 10.5606/kbbu.2024.03264.

The most common disease of the salivary glands is sialolithiasis.[1] Sialolithiasis is a disease in which stones form in the salivary glands or ducts, and it affects 12 out of 1,000 adults.[2] The submandibular gland is the most common location, and 92% of sialolithiasis cases are located in the submandibular gland; the ducts are more frequently affected than the parenchyma. The parotid gland is implicated in 6% of instances, the sublingual gland is involved in 2% of cases, and the remaining 2% affect the minor salivary glands.[2] Treatment options for sialolithiasis include conservative treatment, surgical treatment, and noninvasive treatment, such as sialoendoscopy. Conservative management is typically recommended for patients with small stones.[2] Sialoendoscopy is a technique applied in the intracanal treatment of obstructive and nonneoplastic pathology of the major salivary glands. Techniques have advanced over the past two decades due to advances in endoscopic instruments.[3] Sialendoscopy allows the clinician to directly visualize the salivary gland lumen and, if necessary, to continue treatment simultaneously. Sialoliths and mucus plugs can be detected and removed.[4]

YouTube, which provides access to various medical videos, is the most accessed video site in the world.[5] Patients, medical students, doctors, and other healthcare professionals often use YouTube as a resource to learn about complications of diseases and treatment methods.[6] Therefore, the study aimed to evaluate the videos published on YouTube.

MATERIALS AND METHODS

A search for the term "sialendoscopy" was conducted on YouTube (Alphabet Inc., Mountain View, CA, USA) without making any alterations to the website's standard search preferences between 15.01.2022 and 15.03.2022. The sample is comprised solely of videos in English that offer information on sialendoscopy. Videos in languages other than English, duplicates, content unrelated to sialendoscopy, videos shorter than 15 sec, as well as videos with comments, likes, and dislikes disabled were excluded. All video calls were made without any user input, clearing all call history.[6]

The recorded data included the number of views, comments, likes, and dislikes, as well as the time elapsed since the upload date, the view rate (views per day), duration, and source (e.g., doctor, patient, medical organization, or healthcare channel).[6]

In terms of standardization, evaluation was made by two otolaryngologists. Two otolaryngologists recorded the DISCERN, JAMA, and Global Quality Scale (GQS) scoring systems, which were evaluated as in published articles.[7]

Search preferences were selected to "sort videos by relevance" for standardization. Sixty-three videos about sialoendoscopy were found in the video scan. Sixteen videos were excluded from the study because they lacked audio. Ten videos were excluded for being repetitive. One video was excluded because it was in a non-English language. Two surgeons assessed a total of 36 videos based on the DISCERN score, JAMA score, and GQS score. It was recorded whether all videos contained sufficient information about sialoendoscopy and whether sufficient information was given about the disease process and complications. Videos were classified under the categories of education, entertainment, news and politics, and people and blogs. A usability score was developed to evaluate video quality and classify videos as "somewhat helpful," "useful," and "very helpful."[7]

Statistical analysis

The data were independently gathered by two otolaryngologists with expertise in sialendoscopy, utilizing a Microsoft Excel (Microsoft Corp., Redmond, WA, USA) spreadsheet. The data were analyzed using IBM SPSS version 28.0 software (IBM Corp., Armonk, NY, USA) Mean, standard deviation (SD), median (min, max), frequency, and ratio values were utilized in the descriptive statistics of the data. Intraclass correlation analysis was used in the concordance analysis of quantitative data. Measurement among experts was demonstrated by the Bland Altman chart. Kappa fit analysis was used in the fit analysis of qualitative data. The level of statistical significance was established at $p<0.05$.

RESULTS

Of the 36 videos evaluated in the study, 28 were surgical treatment videos, five were training videos, three were patient information videos (Table 1). The cumulative views for these videos amounted to 624,893. The combined duration of these videos was 374 min. The mean duration of the videos was 10.4±18.8.

When assessing the videos based on their objectives, 28 (77.8%) provided experience with surgical treatment. There were five (13.9%) educational videos and three (8.3%) videos providing information about sialoendoscopy for patients. It was observed that all of the videos containing surgery did not provide sufficient information about surgery, did not include the entire surgery, and did not provide sufficient information about complications during surgery. It was observed that only one training video provided sufficient information about sialoendoscopy and complications.

Table 1
Descriptive analysis of videos

	n	%	Mean±SD	Median	Min-Max
Source					
Surgeon	22	61.1			
Education	5	13.9			
Patient	2	5.6			
Clinic	6	16.7			
TV Show	1	2.8			
Purpose of the video					
Surgical treatment procedure	28	77.8			
Education	5	13.9			
Sialoendoscopy patient information	3	8.3			
Like			28.6±86.3	2.5	0.0-505.0
Dislikes			2.6±10.6	0.0	0.0-63.0
Posted days			1496.4±990.2	1390.0	74.0-3741.0
Duration (min)			10.4±18.8	3.0	1.0-74.0
Views			17358±54397	520.5	10.0-302283
Views/day			6.74±20.23	0.56	0.00-115.74
Interaction index			0.011±0.020	0.003	0.000-0.100

SD: Standard deviation.

The mean DISCERN score was 34.02±18.8 with the first observer and 32.6±15.7 with the second observer. The videos were found to be of poor quality. When the video quality was evaluated according to the JAMA score, the mean scores were 1.4±1.3 with the first observer and 1.2±1.1 with the second observer. In terms of video quality, the videos were found to be of poor quality. When the overall quality of the video content

Table 2
Interobserver descriptive analysis

	Observer I				Observer II					
	n	%	Mean±SD	Median	n	%	Mean±SD	Median	r/Kappa	*p*
Discern score			34.0±18.8	27.5			32.7±15.7	27.5	r=0.948 (0.900-0.973)	0.000*
JAMA score			1.4±1.3	1.0			1.3±1.1	1.0	r=0.912 (0.834-0.954)	0.000*
JAMA score										
0	11	30.6			10	27.8				
I	9	25.0			12	33.3				
II	8	22.2			8	22.2			Kappa=0.669	0.000†
III	6	16.7			6	16.7				
IV	2	5.6			0	0				
GQS score			2.3±1.2	2.0			2.5±1.0	2.0	r=0.836 (0.701-0.913)	0.000*
GQS score										
0	12	33.3			6	16.7				
I	9	25.0			13	36.1				
II	7	19.4			12	33.3			Kappa=0.565	0.000†
III	7	19.4			4	11.1				
IV	1	2.8			1	2.8				

SD: Standard deviation; * Intra class correlation; † Kappa.

was evaluated with the GQS score, the mean values were 2.3±1.2 with the first observer and 2.4±1.0 with the second observer. The overall quality of the video content was found to be poor.[7]

A significant strong [p<0.001, r=0.948 (0.900-0.973)] correlation was observed between the DISCERN score evaluations of the two experts (Table 2). A significant strong [p<0.001, r=0.912 (0.834-0.954)] correlation was observed between the JAMA score evaluations of the two experts. A significant strong (p<0.001, kappa=0.669) correlation was observed between the JAMA score evaluations of the two experts (Table 2). A significant strong [p<0.001, r=0.836 (0.701-0.913)] correlation was observed between the GQS score evaluations of the two experts. A significant strong [p<0.001, kappa=0.565] correlation was observed between the GQS score evaluations of the two experts (Figures 1-4, Table 2).

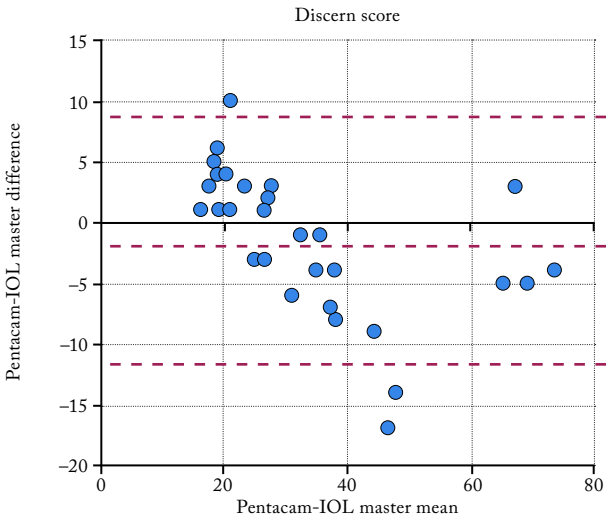

Figure 1. DISCERN score graph.

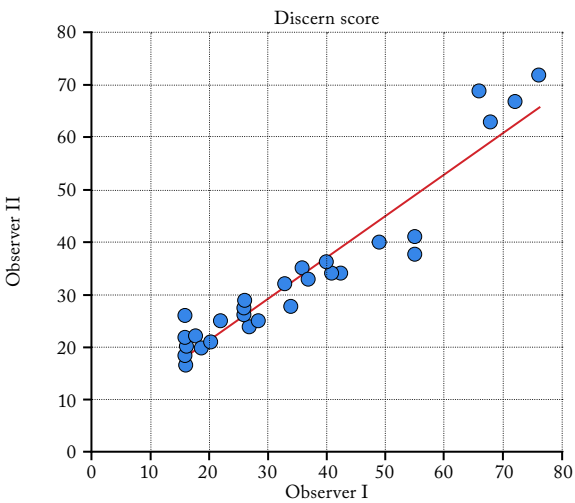

Figure 2. DISCERN score graph of the observers.

DISCUSSION

YouTube stands as the most widely viewed video-sharing platform globally. Many surgical videos are shared on this platform. Many medical and surgical publications have been made on YouTube. Videos about sinusitis, oral diseases, cleft lip and palate, refractive surgery, and strabismus have been shared on YouTube, and many publications have been made about them.[7]

Patients have the option to seek information on YouTube. Health service providers can present the quality, reliability, and accuracy of information in a way that patients cannot understand. The validity of the information can be questioned since the video

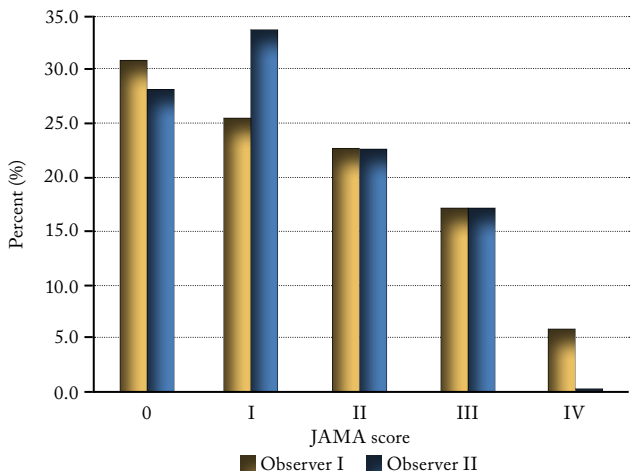

Figure 3. JAMA score graph of the observers.

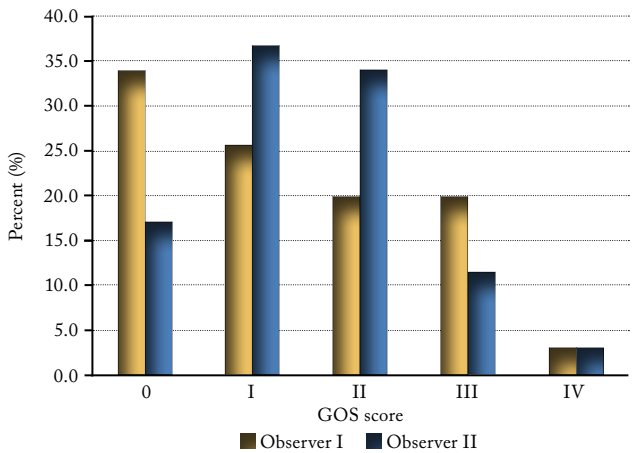

Figure 4. Global Quality Scale score graph of the observers.

content on YouTube is simple and nonstandard.[8] This study demonstrated how many of the videos uploaded to YouTube came from patients, how many were for educational purposes, and how many were uploaded by doctors.[7] Most of the videos published about sialoendoscopy are about surgery and education. The number of videos evaluated from the patients' own point of view is only two.

Over the past three decades, there has been a growing interest in and utilization of minimally invasive treatment methods. Salivary gland endoscopes have started to be frequently used for salivary gland diseases and treatments. Sialoendoscopy, a recently developed technique used for the diagnosis, treatment, and postoperative care of conditions such as sialadenitis, sialolithiasis, and other obstructive salivary gland diseases, is recorded through video recording tools and shared on different video-sharing platforms.[9] In our study, we searched for videos uploaded to YouTube under the name of sialendoscopy.

Surgical studies evaluating YouTube have generally shown that YouTube is unreliable and ineffective.[10] Although YouTube is a convenient and freely accessible site, it may not be possible for patients to judge the quality, reliability, and accuracy of the information.[11] YouTube videos appear to be of low quality and unreliable in our study as well. In addition, the quality of the videos containing the personal experiences of the patients was found to be of lower quality than the videos of the experts.

There was a general lack of information about risks and complications in videos with sialoendoscopy. This may cause hesitations in patients and parents in getting health services. The need to upload more detailed and informative videos is obvious. In our study, we have seen that there are a number of videos with a lack of information in the related videos. This may affect the proactive participation of parents and patients in treatment.

YouTube videos usually allow viewers to evaluate the video with like and dislike buttons. This gives information about whether the video has useful or useful content. When we look at the videos about sialoendoscopy, it could be considered that the videos that have more likes may be better and more useful. However, in our study, the videos with more likes were not more useful and of higher quality.

In previous studies on YouTube, it has been observed that patients and parents search for reliable, accurate, and up-to-date information when searching for information. In previous studies on YouTube, it has been established that patients and parents search for reliable, accurate, and up-to-date information when searching for information. This was showcased by employing the JAMA and DISCERN scoring systems. In our research, we assessed the accuracy, reliability, and timeliness of the information in the videos through the implementation of the JAMA, DISCERN, and GQS scoring systems.

Previously, Nicholl et al.[12] established that when searching for information and videos, parents and patients prioritize reliability and timeliness. In our study, by utilizing the DISCERN, GQS, and JAMA scoring systems, we also assessed whether there was a lack of awareness and concerns about trust in the videos. In the evaluation of DISCERN scores, it was observed that the videos were of poor quality with both observers. The overall quality of the video content was found to be poor in GQS scores. The JAMA scoring system serves as a recognized tool for assessing the quality of online health-related resources, enabling users to gauge their reliability. It involves four criteria (authorship, citation, description, and currency), each of which is assigned a score ranging from 0 to 1, with a maximum of 4 points denoting the highest quality. However, in our results, it was observed that it was of poor quality according to both observers.[6]

There are some limitations to this study. YouTube is the most visited video-sharing site in the world.[10] However, other video-sharing sites other than YouTube were not evaluated in this study. This constitutes the limitation of our study.

In conclusion, YouTube serves as a platform with diverse information quality regarding sialolithiasis, and it is a comprehensive social media site that has the potential to impact patients' knowledge and behavior. Doctors need to acknowledge and utilize this social media platform to increase awareness about sialolithiasis and to help patients differentiate between misleading and valuable information. Presently, YouTube is not an appropriate source for patients seeking information on sialolithiasis. Furthermore, YouTube should not be considered an educational resource for doctors. Therefore, doctors should be more willing to provide peer-reviewed and more informative sources.

Ethics Committee Approval: In this study, Institutional Review Board (IRB) approval was considered unnecessary as only publicly available data were utilized. The study was conducted in accordance with the principles of the Declaration of Helsinki.

Data Sharing Statement: The data that support the findings of this study are available from the corresponding author upon reasonable request.

Author Contributions: Idea/concept, design, analysis, literature review: F.S.; Control/supervision, critical review: A.S,Y.; Data collection, writing the article: F.S., E.U.; References: E.U.

Conflict of Interest: The authors declared no conflicts of interest with respect to the authorship and/or publication of this article.

Funding: The authors received no financial support for the research and/or authorship of this article.

REFERENCES

1. Abe A, Kurita K, Hayashi H, Minagawa M. A case of minor salivary gland sialolithiasis of the upper lip. Oral Maxillofac Surg 2019;23:91-4. doi: 10.1007/s10006-019-00745-6.
2. Aiyekomogbon JO, Babatunde LB, Salam AJ. Submandibular sialolithiasis: The roles of radiology in its diagnosis and treatment. Ann Afr Med 2018;17:221-4. doi: 10.4103/aam.aam_64_17.
3. Chandra SR. Sialoendoscopy: Review and nuances of technique. J Maxillofac Oral Surg 2019;18:1-10. doi: 10.1007/s12663-018-1141-0.
4. Delli K, Spijkervet FK, Vissink A. Salivary gland diseases: Infections, sialolithiasis and mucoceles. Monogr Oral Sci 2014;24:135-48. doi: 10.1159/000358794.
5. Almarghoub MA, Alghareeb MA, Alhammad AK, Alotaibi HF, Kattan AE. Plastic surgery on YouTube. Plast Reconstr Surg Glob Open 2020;8:e2586. doi: 10.1097/GOX.0000000000002586.
6. Kuçuk B, Sirakaya E. An analysis of YouTube videos as educational resources for patients about refractive surgery. Cornea 2020;39:491-4. doi: 10.1097/ICO.0000000000002237.
7. Savran F, Elibol ES. Evaluating YouTube as a source of patient information for blefaroplasty. Facial Plast Surg 2023;39:86-92. doi: 10.1055/s-0042-1744537.
8. Korkmaz YN, Buyuk SK. YouTube as a patient-information source for cleft lip and palate. Cleft Palate Craniofac J 2020;57:327-32. doi: 10.1177/1055665619866349.
9. Nahlieli O, Nakar LH, Nazarian Y, Turner MD. Sialoendoscopy: A new approach to salivary gland obstructive pathology. J Am Dent Assoc 2006;137:1394-400. doi: 10.14219/jada.archive.2006.0051.
10. Wu V, Lee DJ, Vescan A, Lee JM. Evaluating YouTube as a source of patient information for functional endoscopic sinus surgery. Ear Nose Throat J 2022;101:396-401. doi: 10.1177/0145561320962867.
11. Mangan MS, Cakir A, Yurttaser Ocak S, Tekcan H, Balci S, Ozcelik Kose A. Analysis of the quality, reliability, and popularity of information on strabismus on YouTube. Strabismus 2020;28:175-80. doi: 10.1080/09273972.2020.1836002.
12. Nicholl H, Tracey C, Begley T, King C, Lynch AM. Internet use by parents of children with rare conditions: findings from a study on parents' web information needs. J Med Internet Res 2017;19(2):e51. doi: 10.2196/jmir.5834.