YouTube as an Information Source for Retrobulbar Block

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ABSTRACT

Objective: This study aimed to evaluate the quality of YouTube content related to the retrobulbar block as a visual source of digital information.

Methods: A search was conducted on YouTube using the keyword "retrobulbar block," and the 50 most-watched videos were selected for analysis. The videos were evaluated and scored using three criteria: Global Quality (GQ), Journal of the American Medical Association (JAMA), and Retrobulbar Specific Quality (RBSQ) scores.

Results: The average length of the analyzed videos was 357 seconds, with a mean view count of 51.80. On average, the videos received 212.24 'likes' and no 'dislikes'. Additionally, the average number of comments per video was 8.16. Videos uploaded by individual physicians received significantly more 'likes' compared to those uploaded by healthcare institutions ($p<0.01$). However, no other statistically significant differences were found between videos based on the uploader type. The inter-rater ICC coefficients were determined to be 0.878, 0.765, and 0.882 for GQ, JAMA, and RBSQ, respectively.

Conclusion: The videos analyzed in this study had high-quality ratings. Since all were created by physicians and healthcare institutions, this high quality is likely due to their expertise.

Keywords: Global Quality Score, JAMA Score, Retrobulbar Specific Quality Score, YouTube, Retrobulbar Block

INTRODUCTION

Most ocular procedures employ local anesthesia (LA) to enhance patient comfort and facilitate surgical operations [1-3]. The advantages of LA include reduced recovery time, the ability to perform medical procedures without requiring overnight hospitalization, and minimizing the complications associated with general anesthesia (GA). Additionally, LA allows patients to assume the correct postoperative posture immediately after surgery [4,5]. Among the various techniques for delivering LA, the retrobulbar (RB) block is frequently utilized for surgeries targeting the posterior segment of the eye. Although generally considered safe, the RB technique has been associated with rare but serious complications, including optic nerve injury, globe perforation, and cardiorespiratory arrest [6-8]. In recent years, YouTube, operated by YouTube LLC in San Bruno, USA, has emerged as a significant resource for medical professionals and students, offering a vast array of educational content. With over 4 billion daily video views, the platform plays a crucial role in the distribution and consumption of digital content, including medical videos. This makes YouTube an important tool for surgeons, residents, and students seeking visual learning materials for preoperative preparation and skill development [9]. However, while YouTube provides convenient access to surgical videos, the quality and reliability of the content can vary significantly, as platform administrators do not enforce strict quality controls or review uploaded materials prior to publication. This variability in quality poses a potential risk,

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especially for medical procedures requiring precise and accurate technique, such as the retrobulbar block.

The aim of this study is to evaluate the quality of YouTube videos on the retrobulbar block using three scoring systems: Global Quality (GQ), Journal of the American Medical Association (JAMA), and Retrobulbar Specific Quality Score (RBSQ). This evaluation is crucial in determining whether YouTube serves as a reliable educational tool for medical professionals learning the retrobulbar block technique.

MATERIALS AND METHODS

This study did not involve any animal or human subjects, and as such, ethical approval and informed consent were not required. The research adhered strictly to the guidelines set forth by the Declaration of Helsinki. We conducted a retrospective analysis of publicly available YouTube videos in October 2022, focusing on the top 50 most-viewed videos retrieved using the search term "retrobulbar block." "In conducting this study, no personal Google or YouTube accounts were used. This approach ensured that account personalization settings did not introduce bias in content recommendations, thereby maintaining the objectivity of the analyses. Only videos published in English by individuals, healthcare institutions were included in the study. Videos containing animations and duplicate content were excluded. This selection criterion allowed for the analysis of higher educational value and original content. The videos were selected based on their popularity (number of views) and evaluated for various parameters, including video duration, number of likes and dislikes, publication date, subject matter, and view count. Two expert assessors(EE and AEB), with extensive experience in ophthalmology and anesthesia, conducted an independent and unbiased evaluation of the videos. Videos were scored using three different assessment systems: the Global Quality (GQ) score, the Journal of the American Medical Association (JAMA) score, and the Retrobulbar Block Specific Quality Score (RBSQ) scores. The JAMA scoring system is based on key criteria such as accuracy, usefulness, and reliability, with scores ranging from 0 (inadequate) to 4 (superior). Details of the JAMA scoring system are presented in Table 1. In addition to the JAMA score, the Global Quality (GQ) score was applied to holistically assess the overall flow and quality of information presented in each video. The GQ system utilizes a numerical scale from 0 to 5, as detailed in Table 2. For a more targeted evaluation, the Retrobulbar Block Specific Quality Score (RBSQ) score was employed by the assessors (EE and AEB), who are highly experienced in performing retrobulbar block techniques. The (RBSQ) score, based on criteria outlined in *Miller's Anesthesia* textbook, is specifically tailored to assess the educational value of content related to the retrobulbar block. It consists of 10 criteria, each scored as either 0 or 1 point. The details of this scoring system are shown in Table 3. Consensus scores for JAMA, GQ, and RBSQ scores were calculated as mean ± SD. To assess inter-rater reliability, the intraclass correlation coefficient (ICC) was calculated, with values interpreted as follows: < 0.40 as poor, 0.40–0.59 as moderate, 0.60–0.74 as good, and > 0.75 as excellent. Subsequently, the mean JAMA, GQ, and RBSQ scores were used as consensus scores for all further analyses based on the scoring methods employed in this study. Statistical analysis was performed using SPSS Windows V.21.0 software (IBM Inc., Armonk, New York). Continuous variables were summarized as means and standard deviations (SD). The Student's t-test was employed for pairwise comparisons of normally distributed data. Correlations between variables were explored using the Spearman correlation test, with statistical significance set at a p-value of less than 0.05.

RESULTS

The average length of the analyzed videos was 357 seconds, with a mean view count of 51.80. On average, the videos received 212.24 'likes' and no 'dislikes'. Additionally, the average number of comments per video was 8.16. These characteristics are summarized in Table 4. The mean scores for the Global Quality (GQ) score, Journal of the American Medical Association (JAMA) score, and the Retrobulbar Block Specific Quality Score (RBSQ) scorewere 3.88 ±1.33 (0-5) 3.44±1.12 (0-4) and 7.04±3.24 (0-10), respectively, as detailed in Table 5. Of the 50 videos analyzed, 38 (76%) were uploaded by healthcare organizations, while the remaining 12 (24%) were contributed by individual physicians. Videos uploaded by individual physicians received significantly more 'likes' compared to those uploaded by healthcare institutions ($p<0.01$). However, no other statistically significant differences were found between videos based on the uploader type ($p>0.05$). A detailed breakdown of the video analysis by uploader type is provided in Table 6. These findings suggest that videos

Table 1. *Journal of American Medical Association Score*		
Authorship	Authors and contributors, their affiliations, and relevant references should be indicated	(0 or 1 point)
Attribution	References and sources for all content should be clearly listed, and all relevant copyright information should be noted	(0 or 1 point)
Disclosure	"Ownership" of the site should be prominently and fully disclosed, as should sponsorship, advertising, subscriptions, commercial funding arrangements or support, or potential conflicts of interest	(0 or 1 point)
Currency	The date the content was published and updated should be indicated	(0 or 1 point)

Table 2. *Global Quality Score*
1) Poor quality, very unlikely to be of use to patients (0 or 1 point)
2) Poor quality, but some information available, of very limited use to patients(0 or 1 point)
3) Suboptimal information flow, some information covered but important topics missing, reasonably useful to patients(0 or 1 point)
4) Good quality and information flow, most important topics covered, useful to patients(0 or 1 point)
5) Excellent quality and information flow, very useful for patients(0 or 1 point)

Table 3 . *Retrobulbar Block Specific Quality Score*	
Q1. Mentioned which procedure	(0 or 1 point)
Q2. Mentioned indication	(0 or 1 point)
Q3. Patient position	(0 or 1 point)
Q4. Local anesthetics (which and how much)	(0 or 1 point)
Q5. Needle gauze	(0 or 1 point)
Q6. Anatomical landmarks	(0 or 1 point)
Q7. Important vessels and structures	(0 or 1 point)
Q8. Needling technique; in-plane or out-of-plane	(0 or 1 point)
Q9. Needle tip confirmation (negative aspiration or small amount injection or nerve)	(0 or 1 point)
Q10. Complications	(0 or 1 point)

Table 4. *General characteristics of the videos*		
Video parameters	**Mean±SD**	**Range**
Length (second)	357.72±481.64	9-2147
Number of total views (n)	51.80±31.79	10.00-116.00
Number of likes (n)	212.24±245.22	0-967
Number of dislikes (n)	0	0
Number of comments (n)	8.16 ±10.07	0-33

Table 5. *Score of the Videos*		
	Mean±SD	**Range**
JAMAS*	3.44±1.12	0-4
GQS**	3.88 ±1.33	0-5
RBSQS***	7.04±3.24	0-10

Table 6. *The analysis of videos by uploader*				
	Group	**Mean**	**SD**	**p**
Length (second)	1[a]	388.47	538.93	0.4
	2[b]	260.33	230.04	
Number of total views	1	56.84	33.22	0.09
	2	35.83	21.81	
Number of likes	1	260.68	261.45	0.00
	2	58.83	73.56	
Number of comments	1	9	9.98	0.5
	2	5.5	10.8	
RBSQS *	1	7.15	3.5	0.7
	2	6.66	2.8	
JAMAS**	1	3.31	1.24	0.1
	2	3.8	0.4	
GQS***	1	4.05	1.3	0.2
	2	3.3	1.3	

* Journal of American Medical Association Score, **Global Quality Score,***Retrobulber Specific Quality Score
[a] doctors, [b] health institutions

from physicians tend to engage more viewers, as evidenced by the higher number of 'likes,' although overall quality and educational content, as measured by GQ, JAMA, and RBSQ scores, did not show significant differences between the two uploader types. The inter-rater ICC coefficients were determined to be 0.878, 0.765, and 0.882 for GQ, JAMA, and RBSQ, respectively.

Discussion

The objective of this study was to evaluate the visual information value and the quality of content on YouTube regarding retrobulbar block techniques. Although subtenon anesthesia has largely replaced retrobulbar anesthesia as the preferred method for ocular local anesthetics, understanding the correct application of each technique remains critical for both clinical practice and medical education. This is especially important for trainees and medical professionals in regions where retrobulbar block may still be commonly used or required for specific procedures. To our knowledge, this is the first study to assess the quality and utility of YouTube videos on retrobulbar block techniques.

Previous studies, such as those by Medina and Salazar, have emphasized the importance of using high-quality didactic materials and videos to ensure continuous education in regional anesthesia [11]. Research across various medical disciplines highlights YouTube's role as a primary resource for preoperative training, particularly among surgical trainees [9-12]. For example, a survey of surgeons showed that over 86% of trainees regularly use YouTube to enhance their surgical skills, especially in laparoscopic surgery [13].

Our findings align with the results of studies by Sakallıoğlu and Garip, as well as Kalaycı et al., which demonstrated that videos produced by academic centers and healthcare institutions tend to be of higher quality compared to those uploaded by individual physicians [14,15]. These studies found professionally produced videos to be more reliable and informative, particularly in areas such as dry eye treatment and keratoplasty surgery. Similarly, Irgat et al. reported that a significant proportion of high-quality trabeculectomy videos were uploaded by specialized ophthalmologists and medical facilities [16].

In our analysis, 76% of the retrobulbar block videos were uploaded by physicians, while 24% were uploaded by healthcare institutions. This distribution is consistent with previous findings, where videos from individual physicians often garnered more 'likes' from viewers, suggesting a higher level of engagement, even though the overall quality may not have significantly differed. Unlike other studies that utilized the DISCERN scoring system, our research employed a Retrobulbar Block Specific Quality Score (RBSQ) score a tool developed to assess the educational content of these videos. This scoring system, tailored for regional anesthesia, provides a more accurate and focused assessment of the educational value of the videos.

Study Limitations

It is important to note that YouTube's content is dynamic, and our study's findings are based on a one-time search snapshot. This is a common limitation in studies involving online platforms, as the availability and quality of videos may fluctuate over time. Additionally, only English-language videos were included in the analysis, which may limit the generalizability of the results to non-English-speaking regions.

CONCLUSION

The videos analyzed in this study were generally of high quality, with most uploaded by physicians and healthcare institutions known for producing reliable educational material. However, there is a clear need for standardized editorial measures to curate and review these videos to ensure they consistently deliver high-quality educational content. This is particularly crucial to minimize the risk of disseminating inaccurate or misleading information, which could adversely impact clinical practice or patient outcomes.

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