

YouTube as a Source of Information on the Ganglion Impar Block: A Content, Quality, and Reliability Analysis

Ganglion Impar Bloğunda YouTube'un Bilgi Kaynağı Olarak Değerlendirilmesi: İçerik, Kalite ve Güvenilirlik Analizi

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ABSTRACT Objective: Ganglion impar block (GIB) is widely used to treat coccygodynia. YouTube has become an essential platform for both healthcare professionals and patients seeking procedural information. However, due to limited research, the quality and reliability of medical content on YouTube remain uncertain. This study evaluates the quality and reliability of YouTube videos on GIB, offering the first comprehensive assessment. **Material and Methods:** In January 2025, a YouTube search was conducted for the keywords “ganglion impar block” and “ganglion impar injection” after clearing the browsing history and cookies. The top 100 videos for each keyword were selected. Data such as views, likes, dislikes, subscriber count, comments, video duration, and injection technique were recorded. Two pain medicine specialists independently assessed the videos using the modified DISCERN (Quality Criteria for Consumer Health Information), Journal of the American Medical Association (JAMA) benchmark criteria, and the Global Quality Scale (GQS). **Results:** Of the 200 videos, 38 met the inclusion criteria. Based on the modified DISCERN, 78.9% had low reliability, and 57.9% were rated low quality based on the GQS. None of the videos achieved maximum scores in any of the evaluation categories. Positive correlations were found between views, likes, dislikes, subscriber count, and comments with DISCERN, JAMA, and GQS. Strong correlations were also observed between the GQS, DISCERN, and JAMA scores. **Conclusion:** Many YouTube videos on GIB are of low quality and unreliable, which could mislead trainees, result in suboptimal treatment, and expose patients to biased information. Healthcare professionals and organizations are encouraged to create high-quality, peer-reviewed content to improve the reliability of information on such platforms.

ÖZET Amaç: Ganglion impar bloğu (GIB), koksigidini tedavisinde sıklıkla kullanılmaktadır. YouTube, hem sağlık profesyonelleri hem de hastalar için prosedür bilgisi edinmek adına önemli bir platform hâline gelmiştir. Ancak sınırlı sayıda araştırma bulunması nedeniyle, YouTube'taki birçok tıbbi içeriğin kalitesi ve güvenilirliği belirsizdir. Bu çalışma, GIB'ye dair YouTube videolarının kalitesini ve güvenilirliğini değerlendirmeyi amaçlamakta olup, kapsamlı ilk değerlendirmeyi sunmaktadır. **Gereç ve Yöntemler:** Ocak 2025'te, tarayıcı geçmişini ve çerezleri silindikten sonra “ganglion impar block” ve “ganglion impar injection” anahtar kelimeleriyle YouTube araması yapılmıştır. Her anahtar kelime için en popüler 100 video seçilmiştir. Görüntülenme, beğenme, beğenilmeme, abone ve yorum sayıları ile video süresi ve enjeksiyon tekniği gibi veriler kaydedilmiştir. İki fizyatrist algoloji uzmanı, videoları modifiye DISCERN (Tüketici Sağlığı Bilgisi için Kalite Kriterleri), “Journal of the American Medical Association (JAMA) benchmark” kriterleri ve Global Kalite Skoru (GKS) kullanılarak bağımsız bir şekilde değerlendirmiştir. **Bulgular:** 200 videodan 38'i dâhil etme kriterlerini karşılamıştır. Modifiye DISCERN'e göre, videoların %78,9'u düşük güvenilirlikteydi, GKS'ye göre ise %57,9'u düşük kaliteye sahipti. Hiçbir video, tüm değerlendirme kategorilerinde tam puan almayı başaramamıştır. Görüntülenme, beğeniler, beğenilmeyenler, abone sayısı ve yorumlar ile DISCERN, JAMA ve GKS arasında pozitif korelasyonlar bulunmuştur. Ayrıca, GQS, DISCERN ve JAMA puanları arasında güçlü korelasyonlar gözlemlenmiştir. **Sonuç:** GIB ile ilgili YouTube videolarının çoğu düşük kaliteli ve güvenilir değildir, bu da sağlık profesyonellerine yanıltıcı bilgi verebilir, suboptimal tedaviye yol açabilir ve hastaların tarafı bilgilere maruz bırakabilir. Sağlık profesyonelleri ve kuruluşları, güvenilirliği artırmak adına yüksek kaliteli, hakemli içerikler üretmeye teşvik edilmelidir.

Keywords: Ganglion impar block; ganglion impar injection; Youtube; video; quality

Anahtar Kelimeler: Ganglion impar bloğu; ganglion impar enjeksiyonu; Youtube; video; kalite

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Coccygodynia refers to pain in the tailbone area, primarily affects women, and has been linked to obesity.¹ The primary causes of coccygodynia are traumatic events, both external and internal. While most patients benefit from conservative treatment approaches, some continue to suffer from persistent pain, significantly impacting their quality of life. In such instances, interventional procedures become essential.^{1,2} The ganglion impar is located at the sacrococcygeal junction, or sometimes within the coccyx itself. It is the only ganglion in the bilateral paravertebral sympathetic chains, lying in the retroperitoneal space. It is responsible for nociceptive sensations and sympathetic innervation to the perineal and lower urogenital areas.^{1,3} The ganglion impar block (GIB) is a well-established and safe procedure commonly employed to manage chronic coccygodynia, which can contribute to pelvic pain.² These injections, typically guided by imaging modalities (such as fluoroscopy, ultrasound, computed tomography, magnetic resonance imaging, or others), allow for the precise delivery of corticosteroids, local anesthetics, or neurolytic agents.

Social media's rapid expansion has revolutionized the dissemination of medical information. Among these platforms, YouTube (owned by Google LLC, United States of America) has emerged as a preferred resource for healthcare professionals and patients seeking accessible and reliable details about various medical procedures. Its user-friendly interface and the availability of over 7 billion videos make it a convenient alternative to traditional written materials.⁴⁻⁸ However, YouTube's open-access format permits anyone to upload medical content without restrictions, and to the best of our knowledge, there is no established review process to ensure its accuracy. Numerous studies have evaluated the quality of videos on various surgical and interventional techniques, with many finding that the content is often suboptimal.⁵⁻⁸

As YouTube becomes an increasingly relied-upon resource for medical information, it is essential to assess the quality and reliability of its content. As both clinicians and patients turn to online resources for healthcare information, determining whether these videos provide accurate, evidence-based data is crucial. To the best of our knowledge, this is the first study to specifically evaluate the informational value

and quality of ganglion impar videos on YouTube. The objective is to inform our colleagues about the content and reliability of these videos.

MATERIAL AND METHODS

VIDEO SELECTION

In January 2025, this cross-sectional study was conducted using the keywords "ganglion impar block" and "ganglion impar injection" on YouTube (www.youtube.com). To reduce potential bias, the search history was erased before initiating the search. The first 100 videos for each term, based on relevance, were selected. Only English-language videos were considered, and duplicates or videos without audio or subtitles were excluded.

VIDEO FEATURES

For each video, several metrics were recorded, including the subscriber count, the number of likes, dislikes, total views, comments, and video duration. The like ratio was determined with the formula: $[(\text{count of likes} \times 100) / (\text{count of likes} + \text{dislikes})]$, while the view ratio was determined by taking the total number of views and dividing it by the number of days since the video was posted. In addition, the Video Power Index (VPI) was computed as the product of the view ratio and the like ratio.⁹ Other details such as the time passed after posting and the video source were documented. Videos were categorized by source into physician, health-related channels, and patient, and were further classified based on the described guidance method into 3 groups: (1) videos explaining the procedure using fluoroscopy alone, (2) videos describing the use of both fluoroscopy and ultrasound, and (3) videos where the guidance method was not specified.

EVALUATION OF THE VIDEO QUALITY AND RELIABILITY

Video reliability and quality were assessed using 3 instruments: the Global Quality Scale (GQS), the modified DISCERN tool, and the Journal of the American Medical Association (JAMA) benchmark criteria. Video searches and evaluations were independently conducted by 2 pain medicine specialists, Y.O. and M.O. using these evaluation tools. Each specialist assessed the rating scales individually. Y.O.

and M.O. are both experienced in Physical Medicine&Rehabilitation and Pain Medicine, with over 10 years of clinical practice. Additionally, M.O. holds the title of associate professor. They have been performing ganglion impar blocks for more than 3 years.

- **Modified DISCERN:** This tool consists of five questions with yes/no answers, where each “yes” earns one point, for a maximum score of 5. A score of three or higher indicates high reliability.⁵

- **JAMA Benchmark Criteria:** Videos were evaluated based on four elements-authorship, attribution, currency, and disclosure-each contributing one point to a total score of 4. A score of 3 or more reflects high quality.⁴

- **Global Quality Scale:** Overall video quality was rated on a 5-point Likert scale: scores of one to 2 indicate low quality, a score of three indicates moderate quality, and scores of 4-5 denote high quality.¹⁰

ETHICAL CONSIDERATION

Because the study solely involved publicly available YouTube videos and excluded human or animal subjects, ethical approval and clinical trial registration were not required.

STATISTICAL ANALYSIS

The data were processed using SPSS version 27.0.1 (IBM Corp., Armonk, NY). For categorical variables, frequencies and percentages were reported. Continuous variables are presented as mean±standard deviation. The normality of the continuous variables was assessed using the Shapiro-Wilk test; due to the majority of scale values not following a normal distribution, the Kruskal-Wallis test was utilized to compare multiple groups. Spearman’s Rho correlation analysis was conducted to explore the relationships between the continuous variables, and the kappa coefficient was computed to assess the inter-rater reliability. Statistical significance was determined when the p value was below 0.05.

RESULTS

In total, 200 videos were initially reviewed. Of these, 162 were excluded for various reasons: 85 were du-

plicates, 62 were irrelevant to the topic, 7 were in non-English languages, 4 were short videos, and 4 lacked audio or subtitles. In the end, 38 videos met the inclusion criteria and were analyzed.

Most of the videos (57.9%) were posted by physicians. The average values of the video metrics were as follows: views 10,426.08 (85-131,287), subscribers 8,139.11 (11-146,000), likes 74.76 (0-1,600), dislikes 1.27 (0-13), duration 399.03 (29-4,860) seconds. Other metrics included comments 10.33 (0-279), uploaded 44.53 (1-168) months ago, view ratio 10.89 (0.03-150.9), like ratio 95.60 (33.33-100), and VPI 15.55 (0.03-150.9). The inter-rater reliability, assessed with Cohen’s kappa, was 0.923 for DISCERN, 0.884 for JAMA, and 0.964 for GQS. The average scores for DISCERN, JAMA, and GQS were 1.39 (0-

TABLE 1: Youtube video characteristics

Video source	Physician	22 (57.9)
	Health-related channel	13 (34.2)
	Patient	3 (7.9)
Injection technique	Fluoroscopy	17 (44.7)
	Both fluoroscopy and ultrasound (or endoscopic ultrasound)	7 (18.4)
	Not stated	14 (36.9)
Discern score	≥3	8 (21.1)
	<3	30 (78.9)
JAMA	≥3	2 (5.3)
	<3	36 (94.7)
GQS	≥4	5 (13.2)
	=3	11 (28.9)
	<3	22 (57.9)
Video features	X±SD	Minimum-maximum
Views	10,426.08±26,380.04	5-131,287
Subscribers	8,139.11±25,461.24	11-146000
Likes	74.76±266.14	0-1600
Dislikes	1.27±3.18	0-13
Duration (s)	399.03±885.07	29-4,860
Comments	10.33±46.39	0-279
Uploaded time (m)	44.53±45.99	1-168
View ratio	10.89±33.20	0.03-150.9
Like ratio	95.60±13.08	33.33-100
VPI	15.55±39.21	0.03-150.9
Video scores		
DISCERN	1.39±1.12	0-4
JAMA	1.23±0.94	0-4
GQS	2.26±1.10	1-5

JAMA: Journal of American Medical Association; GQS: Global Quality Scale; SD: Standard Deviation; VPI: Video Power Index; DISCERN

4), 1.23 (0-4), and 2.26 (1-5), respectively, indicating poor scores for all. Based on the DISCERN classification, 21.1% of the videos were deemed highly reliable. Based on the GQS classification, 13.2% were rated high quality, while 28.9% were rated moderate quality (Table 1).

In the group where the injection technique was not specified, the number of likes, views, comments, dislikes, and upload time were significantly lower. Additionally, the view ratio, JAMA, DISCERN, and

GQS scores were also significantly lower compared to both groups specifying a guided injection technique (Table 2). Videos uploaded by physicians had significantly higher views, subscriber counts, likes, dislikes, comments, and view ratios compared with other sources. Additionally, physician-uploaded videos had significantly higher GQS, JAMA, and DISCERN scores ($p < 0.001$). Videos posted by patients were significantly longer than those from other sources, whereas videos uploaded by health-related

TABLE 2: Video features of injection techniques

	Fluoroscopy	Fluoroscopy+US	Not stated	p value
Views	20,505.12 (51-131,287)	6,018 (33-25,000)	391.29 (5-3,333)	<0.001*
Subscriber	15,692.41 (11-146,000)	4,313.71 (36-11,200)	879.93 (98-2,410)	0.052
Likes	153.5 (0-1,600)	39.57 (1-132)	2.36 (0-26)	<0.001*
Dislikes	2.38 (0-13)	1.29 (0-7)	0 (0-0)	0.024*
Duration (s)	523.82 (48-4,860)	204.14 (70-384)	344.93 (29-2,920)	0.076
Comments	22.8 (0-279)	2.71 (0-13)	0.79 (0-10)	0.021*
U.T. (m)	61 (1-168)	48.43 (11-104)	22.57 (1-77)	0.018*
View ratio	22.33 (0.1-150.9)	3.41 (0.07-8.77)	0.75 (0.03-6.94)	0.002*
Like ratio	93.23 (33.33-100)	98.18 (92.31-100)	100 (100-100)	0.235
VPI	24.85 (0.03-150.9)	3.34 (0.07-8.33)	2.03 (0.08-6.94)	0.241
Video scores				
DISCERN	1.82 (0-4)	2 (1-4)	0.57 (0-1)	0.001*
JAMA	1.64 (0-3)	1.85 (1-4)	0.42 (0-1)	<0.001*
GQS	2.88 (1-5)	2.57 (1-4)	1.35 (1-2)	<0.001*

US: Ultrasound; U.T.: Uploaded time; VPI: Video Power Index; DISCERN; JAMA: Journal of American Medical Association; GQS: Global Quality Scale. Continuous data are presented as mean (minimum-maximum), *: Indicates statistically significant difference ($p < 0.05$)

TABLE 3: Comparison of the video features according to the sources

	Physician	Health-related channel	Patient	p value
Views	17,706.32 (33-131,287)	475.54 (5-3,333)	156.67 (68-223)	<0.001*
Subscriber	13,422.23 (36-146,000)	672.85 (11-2,410)	1,750 (1,750-1,750)	0.011*
Likes	130.1 (1-1,600)	2.31 (0-26)	1.33 (0-3)	<0.001*
Dislikes	2.14 (0-13)	0 (0-0)	0.67 (0-2)	0.045*
Duration (s)	242.55 (29-607)	86.92 (48-126)	2899 (917-4,860)	<0.001*
Comments	18 (0-279)	0.85 (0-10)	0.33 (0-1)	0.016*
U.T. (m)	57.09 (1-168)	15.85 (1-107)	76.77 (76-77)	0.002*
View ratio	18.32 (0.07-150.9)	0.82 (0.05-6.94)	0.06 (0.03-0.1)	<0.001*
Like ratio	97.73 (89.34-100)	100 (100-100)	66.66 (33.33-100)	0.327
VPI	18.86 (0.07-150.9)	2.71 (0.46-6.94)	0.05 (0.03-0.08)	0.057
Video scores				
DISCERN	1.95 (1-4)	0.76 (0-2)	0 (0-0)	<0.001*
JAMA	1.77 (1-4)	0.61 (0-2)	0 (0-0)	<0.001*
GQS	2.86 (1-5)	1.53 (1-3)	1 (1-1)	<0.001*

U.T.: Uploaded time; VPI: Video Power Index; DISCERN; JAMA: Journal of American Medical Association; GQS: Global Quality Scale. Continuous data are presented as mean (minimum-maximum), *: Indicates statistically significant difference ($p < 0.05$)

channels had a more recent upload time (respectively $p<0.001$, $p=0.002$) (Table 3).

Based on the GQS classification, most videos (57.9%) were of low quality, while 28.9% were of moderate quality and 13.2% were of high quality. Among the videos uploaded by physicians, 22.7% ($n=5$) were rated high quality, whereas none of the

videos posted by non-physicians fell into this category (Table 4).

A strong positive correlation was observed between views and likes with both JAMA and GQS, as well as a moderate correlation with DISCERN. Similarly, subscribers showed moderate correlations with DISCERN, JAMA, and GQS, while comments had moderate correlations with DISCERN and JAMA, along with a strong correlation with GQS. Furthermore, a very strong positive correlation was observed between DISCERN, JAMA, and GQS scores (Table 5).

DISCUSSION

The current research evaluated the quality of 38 YouTube videos related to ganglion impar blocks. Based on the DISCERN score, 21.1% of the videos were classified as “high reliability”, while the GQS score indicated that 42.1% were of moderate to high quality. Although most high-quality videos were uploaded by physicians, 31.8% of physician-uploaded videos were still classified as “poor quality”. In contrast, 92.3% of the videos uploaded by health-related

TABLE 4: Distribution of video quality classifications based on source and video characteristics

	Low	Moderate	High
Video source (n)			
Physician	7	10	5
Health-related channel	12	1	
Patient	3		
Total	22 (57.9%)	11 (28.9%)	5 (13.2%)
Video features ($\bar{X}\pm SD$)			
Views	4,021.41 \pm 16,548.6	26,136 \pm 40,091.86	4,044.80 \pm 5,077.95
Subscriber	1,381.86 \pm 2,442.84	15,749 \pm 43,277.44	21,129.2 \pm 25,720.8
Likes	19.91 \pm 72.57	215.5 \pm 490.37	34.60 \pm 26.91
Dislikes	0.36 \pm 1	3.6 \pm 5.4	0.60 \pm 1.34
Duration (s)	490.41 \pm 1157.75	230 \pm 140.76	368.8 \pm 181.27
Comments	0.67 \pm 2.19	31.9 \pm 86.97	7.8 \pm 11.16
U.T. (m)	29.59 \pm 33.28	78 \pm 58.18	36.6 \pm 29.98

SD: Standard deviation; U.T.: Uploaded time

TABLE 5: Relationships between video features and all scores

		Views	Likes	Dislikes	Duration	Comments	DISCERN	JAMA	GQS	U.T.
Subscriber	rho	0.586	0.598	0.341	0.555	0.414	0.397	0.435	0.494	0.195
	p value	<0.001*	<0.001*	0.039*	<0.001*	0.012*	0.014*	0.006*	0.002*	0.240
Views	rho		0.928	0.595	0.384	0.702	0.550	0.697	0.634	0.642
	p value		<0.001*	<0.001*	0.017*	<0.001*	<0.001*	<0.001*	<0.001*	<0.001*
Likes	rho			0.568	0.405	0.739	0.581	0.717	0.685	0.535
	p value			<0.001*	0.013*	<0.001*	<0.001*	<0.001*	<0.001*	<0.001*
Dislikes	rho				0.350	0.268	0.033	0.218	0.215	0.510
	p value				0.034*	0.114	0.848	0.195	0.201	0.001*
Duration	rho					0.371	0.300	0.307	0.369	0.218
	p value					0.026*	0.067	0.067	0.023*	0.118
Comments	rho						0.418	0.491	0.620	0.272
	p value						0.011*	0.002*	<0.001*	0.108
DISCERN	rho							0.890	0.846	0.163
	p value							<0.001*	<0.001*	0.329
JAMA	rho								0.894	0.350
	p value								<0.001*	0.031*
GQS	rho									0.241
	p value									0.145

DISCERN; U.T.: Uploaded time; JAMA: Journal of American Medical Association; GQS: Global Quality Scale, *: Indicates statistically significant difference ($p < 0.05$)

channels were rated “poor quality”. Additionally, all 3 videos posted by patients were classified as “poor”. These findings highlight the need for healthcare professionals and reputable institutions to produce more reliable and evidence-based content on ganglion impar blocks using credible medical references.

In today’s digital era, healthcare professionals increasingly turn to online platforms in addition to traditional sources such as textbooks and scientific articles. Interventional pain management procedures are often best learned through visual materials, such as videos or illustrations. YouTube has become a significant platform for the rapid dissemination of technical knowledge related to surgical and interventional procedures. It serves as a valuable resource, especially for early-career healthcare professionals and patients, in understanding minimally invasive techniques like ganglion impar blocks. A systematic review of 14 studies, however, found that 85% of these videos were of low quality.¹¹ In our study, only 21.1% of the GIB videos were classified as having high reliability, and only 13.2% were of high quality. This underscores the challenge of accessing reliable and high-quality educational content. Furthermore, this study reveals substantial variability in the quality of GIB videos, emphasizing the need for a critical approach when evaluating online sources. While these videos may serve as useful visual materials, their reliability and content value remain inconsistent, underscoring the need for a structured approach to identifying trustworthy content.

The present study found very strong correlations among the DISCERN, JAMA, and GQS scores, consistent with previous research, reinforcing the need for a multi-faceted approach to evaluating video quality, content, and reliability.^{4,12} However, no video achieved a perfect score across all evaluation systems, highlighting inconsistencies in the quality standards for GIB videos and emphasizing the need for higher-quality video production.

The popularity of YouTube videos is shaped by a combination of algorithmic factors, presentation style, and user behavior.^{13,14} Metrics such as view counts or likes were shown to be poor indicators of a video’s educational value.¹⁵ While some research

suggests that popular videos may be of higher quality, others have found no such relationship.^{12,16-19} In our study, a positive but not strong correlation was observed between video popularity (measured by views or likes) and video quality and reliability. Additionally, although some research has suggested a relationship between video length and quality, our findings revealed only a weak correlation.^{17,20} Conversely, a moderate to high correlation was found between the number of comments and both quality and reliability, which may indicate that viewers are reacting to high-quality content.

Nevertheless, in this study, none of the video metrics (view count, like count, subscriber count, dislike count, video duration, comment count, or uploaded time) showed a strong correlation with all three evaluation systems (GQS, DISCERN, and JAMA). This highlights the inadequacy of relying solely on superficial metrics and underscores the importance of focusing on content quality to find reliable sources. Moreover, it emphasizes the necessity of considering multiple factors rather than relying on a single criterion when assessing videos.

Given YouTube’s growing prominence as a resource, videos used as supplementary materials must be reliable, educational, and of high quality. Healthcare professionals and medical institutions must take responsibility for producing peer-reviewed, high-quality content. Additionally, carefully reviewing and verifying existing videos can contribute to the availability of trustworthy resources for both healthcare professionals and patients. Despite the increasing use of online platforms, direct mentorship and real-time feedback remain indispensable, even for the simplest procedures.

An increasing body of research has assessed the quality and reliability of YouTube videos on various surgical and interventional procedures. However, to the best of our knowledge, this study is the first to assess the quality of videos on GIB.

This study has a few limitations regarding representativeness and generalizability due to the sample size and search methods. However, with 200 videos (100 per keyword), the sample size is adequate for focused qualitative analysis, given the detailed evaluation criteria and expert participation. The study was

limited to only English-language videos and had a relatively small sample size after exclusions. Considering the limited availability of GIB videos on YouTube and the tendency of users to prioritize the first few search results, analyzing the first 100 videos for each of the 2 keywords is reasonable. Furthermore, most videos beyond the 40th result were either irrelevant or duplicates. As the number of videos increases, future research should expand the sample size and include non-English videos to improve generalizability.

CONCLUSION

Most GIB videos were observed to be of low quality and reliability. Healthcare professionals should be aware that these videos may contain inaccurate or incomplete information. To address this, verified, high-quality, and peer-reviewed videos should be produced by healthcare professionals and reputable organizations to serve as trustworthy educational resources.

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Conflict of Interest

No conflicts of interest between the authors and / or family members of the scientific and medical committee members or members of the potential conflicts of interest, counseling, expertise, working conditions, share holding and similar situations in any firm.

Authorship Contributions

This study is entirely author's own work and no other author contribution.

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