

Main Article

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Assessment of YouTube as an educational tool in teaching flexible nasendoscopy and peritonsillar abscess drainage

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Abstract

Background. Partly as a result of coronavirus disease 2019, YouTube has become a more frequent educational source for otolaryngology trainees. This study sought to assess the quality of flexible nasendoscopy and peritonsillar abscess drainage videos.

Method. YouTube was systematically searched using 13 terms related to flexible nasendoscopy and peritonsillar abscess drainage. Two independent reviewers assessed the quality of each video using the Laparoscopic Video Educational Guidelines.

Results. Twenty-seven videos were deemed suitable. The mean total Laparoscopic Video Educational Guidelines scores for videos on flexible nasendoscopy (18 videos) and peritonsillar abscess drainage (9 videos) were 10.3 (standard deviation = 3.1) and 11.7 (standard deviation = 4.6), respectively. Most of the videos were deemed of medium quality. The Laparoscopic Video Educational Guidelines score correlated positively with flexible nasendoscopy video length and how recently a peritonsillar abscess drainage video had been uploaded.

Conclusion. The limited high-quality videos on YouTube are difficult to identify from the search metrics available. Trainees and ENT induction programmes would benefit greatly from an online platform that contains a catalogue of high-quality surgical videos.

Introduction

The General Medical Council (GMC) states that all new doctors beginning an ENT surgery rotation must be offered an induction that includes the teaching of core procedures.¹ Such procedures include flexible nasendoscopy (FNE) and peritonsillar abscess drainage, which are routinely performed by ENT on-call doctors. The FNE involves passing a flexible nasoendoscope, which has a light and camera, through the nasal cavity and towards the larynx; it plays a crucial role in assessment of the upper aerodigestive tract. Peritonsillar abscesses are the most common deep neck space infection to present in the emergency department. Management of the latter includes identifying the maximal area of fluctuance above the upper pole of the tonsil, and removal of the pus by either aspiration or incision and drainage.² Both procedures are considered low risk, but they require a comprehensive understanding of the anatomy and surgical technique to be successful.

Post-graduate doctors working within ENT can vary in surgical experience, from ENT-themed core surgical trainees to non-themed core surgical trainees, general practice trainees and foundation doctors. A national survey of ENT juniors providing night on-call cover found that 68 per cent had no prior ENT experience and 42 per cent were not confident with managing ENT emergencies.³ Therefore, a robust induction is required to improve confidence in ENT-specific skills.⁴

However, the coronavirus disease 2019 (Covid-19) pandemic has placed significant pressure on medical education, and junior doctor training has been affected.⁵ More precisely, surgical trainees have faced less clinical exposure and reduced surgical case volume.^{5,6} Consequently, trainees are searching for alternative teaching methods to develop their surgical skills.

Rapp *et al.* found that surgical trainees were most commonly using YouTube as their educational resource to prepare for a procedure.⁷ YouTube is an easily accessible video source that can be accessed from any location. However, YouTube content is not chosen for its educational value but rather for its popularity, as well as several other criteria such as view count, comments, and likes or dislikes.⁸

Previous studies have applied the Laparoscopic Surgery Video Educational Guidelines ('LAP-VEGaS') to evaluate the educational quality of YouTube videos. These Guidelines were created by a multidisciplinary committee with the objective of appraising surgical videos submitted for publication and presentation.^{9–11} Since then, the tool has also been used to assess the quality of YouTube videos on otolaryngology procedures that include: thyroidectomy, parathyroidectomy, endoscopic endonasal approaches and neck dissection. Therefore, we sought to critically evaluate the educational quality of

YouTube videos demonstrating FNE and peritonsillar abscess drainage by applying the Laparoscopic Surgery Video Educational Guidelines framework.

Materials and methods

Video selection

YouTube's video sharing platform (<https://www.youtube.com>) was searched on 13 March 2022 using the following key words and phrases: 'flexible nasendoscopy', 'flexible nasal endoscopy', 'flexible nasolaryngoscopy', 'flexible nasopharyngoscopy', 'flexible nasopharyngolaryngoscopy', 'quinsy drainage', 'peritonsillar abscess drainage', 'peritonsillar abscess aspiration', 'peritonsillar abscess treatment', 'quinsy aspiration', 'peritonsillar abscess incision and drainage' and 'peritonsillar abscess needle aspiration'. The results for each search query were screened based on 'relevance' and the first 10 eligible videos were selected. Exclusion criteria included patient testimony, non-instructional videos and presentations without video footage of the procedure. Furthermore, videos that demonstrated procedures performed under general anaesthetic, rigid endoscopic approaches or abscess tonsillectomy were also excluded. The remaining videos were compiled, and duplicates were removed. This video selection pathway is shown in Figure 1.

Video evaluation

The following characteristics were extracted for each included video: title, uniform resource locator ('URL'), publication date, country of practice, view count, video length, comments, likes, and presence of audio and/or written commentary. The videos were then evaluated using the Laparoscopic Surgery Video Educational Guidelines checklist.¹² Each video was marked against a checklist consisting of nine criteria, graded from 0 (not present in video) to 2 (extensively present in video). Final scores are tallied and divided into three categories defined by the checklist (low = 0–6, medium = 7–12, high =

13–18). This process was performed independently by two otolaryngology core trainees with full membership of the Royal College of Surgeons of England (HD and BVT).

Statistical analysis

If not otherwise specified, descriptive statistics were presented as absolute number with percentage, or mean with standard deviation (SD). Cohen's kappa co-efficient was used to calculate inter-rater agreement between the two otolaryngology trainees. Correlations between video characteristics (view count, video age, video length, number of comments and number of 'likes') and the overall Laparoscopic Surgery Video Educational Guidelines score were calculated using Pearson's product-moment correlation co-efficient. A *p*-value of less than 0.05 was considered statistically significant. Statistical analyses were performed using Microsoft Excel for Mac software (version 16.57; Microsoft, Redmond, Washington, USA).

Results

Video characteristics

Our search yielded a total of 27 unique videos that met the inclusion criteria for analysis, including 18 for FNE and 9 for peritonsillar abscess drainage. The characteristics of the 27 selected videos are reported in Table 1. Overall, 11 videos (41 per cent) were produced in the USA, and 8 videos (30 per cent) were produced in the UK. The remaining videos were produced in Canada (*n* = 1), China (*n* = 1), India (*n* = 3), Malaysia (*n* = 2) and the Netherlands (*n* = 1). Across all videos, the mean view count was 147 366 (SD = 342 876), with a range of 26 to 1 767 444 views. Videos were uploaded between 2010 and 2022, with a mean age of 4.19 years (SD = 3.28). The mean video length was 5.0 minutes (SD = 2.9). Videos received a mean of 36 comments (SD = 55) and a mean of 458 'likes' (SD = 577). Twenty-three videos (85 per cent) provided audio and/or written commentary.

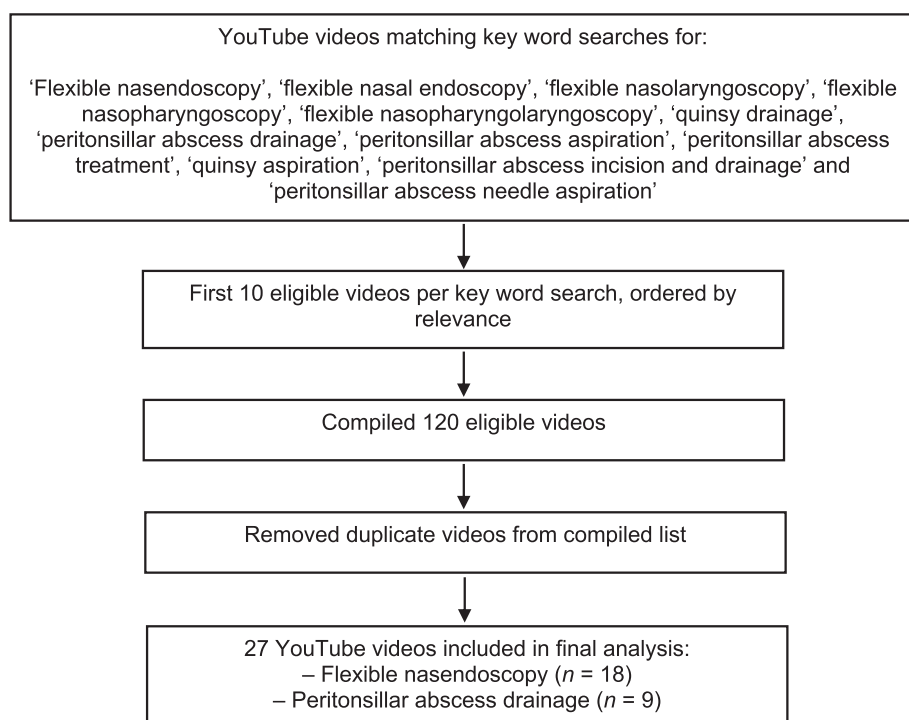


Fig. 1. Flow chart outlining video selection pathway and review process.

Table 1. Video characteristics of the 27 selected videos

Video number	Procedure	Title & link	Country	View count	Upload date	Video length (hr:min:sec)	Number of comments	Number of likes	Presence of audio or written commentary?
1	Flexible nasoendoscopy	Christmas day nasopharyngoscope procedure https://www.youtube.com/watch?v=00Emc79uF8k	USA	24 856	06/01/2016	00:03:39	0	182	Yes
2	Flexible nasoendoscopy	Endoscopic anatomy of the nasal cavity & vocal cords https://www.youtube.com/watch?v=1lvwsTlAXRc	UK	10 303	01/07/2020	00:07:29	4	173	Yes
3	Flexible nasoendoscopy	ENT flexible laryngoscopy https://www.youtube.com/watch?v=xAtiJTLBvll	USA	119 891	10/10/2017	00:02:50	90	1300	Yes
4	Flexible nasoendoscopy	Fiberoptic nasopharyngoscopy https://www.youtube.com/watch?v=fLGS4CVPfH4	USA	3468	27/06/2019	00:01:26	0	42	Yes
5	Flexible nasoendoscopy	Flexible laryngoscopy https://www.youtube.com/watch?v=GLn7HlVzABM	USA	729	13/08/2020	00:04:04	3	7	Yes
6	Flexible nasoendoscopy	Flexible laryngoscopy https://www.youtube.com/watch?v=13Hb30xNB5k	Netherlands	79 212	13/09/2016	00:04:12	11	371	Yes
7	Flexible nasoendoscopy	Flexible nasal endoscopy - ENT academy https://www.youtube.com/watch?v=HjGzdhkE33k	UK	7286	23/05/2019	00:02:15	2	59	Yes
8	Flexible nasoendoscopy	Flexible nasendoscopy https://www.youtube.com/watch?v=g7wvB34Vv3Y	UK	515	20/01/2020	00:07:01	2	6	Yes
9	Flexible nasoendoscopy	Flexible nasendoscopy VR https://www.youtube.com/watch?v=cHWfNvRwufg	UK	522	28/01/2020	00:09:32	0	2	Yes
10	Flexible nasoendoscopy	Flexible nasopharyngolaryngoscopy https://www.youtube.com/watch?v=zOydvOdrzsA	India	26	09/12/2021	00:01:24	0	0	No
11	Flexible nasoendoscopy	Full procedure - fiberoptic laryngoscopy with Dr. Hermesen https://www.youtube.com/watch?v=GMS8dEtfis4	USA	194 230	20/08/2013	00:01:34	116	449	Yes
12	Flexible nasoendoscopy	How to do flexible nasendoscopy (FNE) https://www.youtube.com/watch?v=2igUG-vZA7o&t=538s	UK	944	28/07/2021	00:12:18	0	12	Yes
13	Flexible nasoendoscopy	How to perform flexible nasendoscopy https://www.youtube.com/watch?v=kdLlBxLZmE0	China	1393	27/01/2015	00:01:47	0	3	No
14	Flexible nasoendoscopy	Nasoendoscopy (nose examination) – ENT https://www.youtube.com/watch?v=0kuHOoqgAu8	UK	422 632	17/02/2012	00:02:57	108	2100	Yes
15	Flexible nasoendoscopy	Nasopharyngoscopy https://www.youtube.com/watch?v=1RkmlwXBd0	USA	16 763	05/07/2017	00:04:10	0	119	Yes
16	Flexible nasoendoscopy	Surgeon performs flexible nasendoscopy on himself! https://www.youtube.com/watch?v=v=90UOWmFMDKY	UK	4060	22/09/2021	00:04:47	26	200	Yes
17	Flexible nasoendoscopy	Upper airway anatomy during trans-nasal endoscopy (HD) https://www.youtube.com/watch?v=Z6zRxBE3ws	USA	199 624	15/10/2010	00:02:19	50	939	Yes
18	Flexible nasoendoscopy	What nasal endoscopy can tell us about voice health https://www.youtube.com/watch?v=wcZcMgzHpQI	USA	1 767 444	02/10/2015	00:05:35	94	1600	Yes
19	Peritonsillar abscess drainage	Acute tonsillitis with peritonsillar abscess https://www.youtube.com/watch?v=onLkePqJ7CI	Malaysia	216 657	15/02/2017	00:09:59	58	629	No

20	Peritonsillar abscess drainage	Draining peri tonsillar abscess - Dr Paulose FRCS (ENT) https://www.youtube.com/watch?v=UNaLUB-7rVA	India	76 706	09/11/2012	00:06:48	0	99	Yes
21	Peritonsillar abscess drainage	Emergency incision & drainage for peritonsillar abscess - Dr. V. Narendrakumar https://www.youtube.com/watch?v=nLiW-WgyJug	India	7218	07/11/2021	00:04:49	0	133	Yes
22	Peritonsillar abscess drainage	How to drain a quinsy (aka peritonsillar abscess): a step-by-step guide. Doctor O'Donovan explains https://www.youtube.com/watch?v=7eB57DFnagM	UK	3462	16/01/2022	00:10:01	6	36	Yes
23	Peritonsillar abscess drainage	Peritonsillar abscess aspiration, incision & drainage https://www.youtube.com/watch?v=gnO7QaxkWno	Canada	21 521	10/10/2021	00:07:24	0	220	Yes
24	Peritonsillar abscess drainage	Peritonsillar abscess drainage https://www.youtube.com/watch?v=ZGIQZUXz36I	USA	96 437	13/10/2017	00:01:59	76	461	Yes
25	Peritonsillar abscess drainage	Peritonsillar abscess emergency and needle aspiration https://www.youtube.com/watch?v=1CJgLTd35wo	USA	65 172	24/05/2021	00:03:59	96	1000	Yes
26	Peritonsillar abscess drainage	Peritonsillar abscess needle aspiration https://www.youtube.com/watch?v=I5W27zV-dwl	USA	108 548	05/01/2015	00:04:59	0	627	Yes
27	Peritonsillar abscess drainage	Tonsil abscess (pus formed within infected tonsil tissue) https://www.youtube.com/watch?v=jeBEzATKJEw	Malaysia	529 253	09/01/2016	00:06:53	231	1600	No

Hr:min:sec = hours:minutes:seconds

Table 2. Flexible nasoendoscopy video quality evaluation using 2020 LAP-VEGaS tool*

Video number	Rater (R1/2)	Items (scores)									Total LAP-VEGaS score (/18)
		Item 1	Item 2	Item 3	Item 4	Item 5	Item 6	Item 7	Item 8	Item 9	
1	R1	1	1	2	1	1	1	0	2	1	10
	R2	2	1	1	1	1	1	0	2	1	10
2	R1	1	0	0	2	2	0	2	2	2	11
	R2	1	1	1	1	2	0	2	2	2	12
3	R1	1	0	1	1	1	1	0	2	2	9
	R2	1	0	1	2	1	0	0	2	2	9
4	R1	0	0	0	1	1	1	0	2	1	6
	R2	2	0	0	2	2	0	0	2	1	9
5	R1	2	1	1	1	1	1	0	2	2	11
	R2	2	2	2	1	2	1	0	2	2	14
6	R1	1	0	2	2	1	0	1	2	2	11
	R2	1	0	2	2	2	1	0	2	2	12
7	R1	0	0	2	2	2	0	1	2	1	10
	R2	1	0	2	2	2	1	1	2	2	13
8	R1	2	1	2	2	2	2	1	2	2	16
	R2	2	2	2	2	2	2	2	2	2	18
9	R1	2	1	2	2	1	0	0	2	1	11
	R2	1	1	2	2	1	0	0	2	0	9
10	R1	0	0	1	0	0	0	0	1	1	3
	R2	0	0	1	0	0	0	0	0	1	2
11	R1	1	0	1	1	1	0	0	2	1	7
	R2	2	0	1	2	1	0	0	2	2	10
12	R1	1	1	2	2	2	1	0	2	2	13
	R2	1	2	2	2	2	2	0	2	2	15
13	R1	1	0	1	2	0	0	1	0	1	6
	R2	1	1	2	2	0	0	1	2	1	10
14	R1	1	1	2	1	1	0	1	2	1	10
	R2	1	1	2	1	1	0	0	2	1	9
15	R1	1	0	1	1	2	0	0	2	2	9
	R2	1	1	2	1	2	0	0	2	1	10
16	R1	2	1	1	1	1	1	1	2	1	11
	R2	2	2	1	1	2	0	1	2	1	12
17	R1	2	0	1	1	1	0	1	2	2	10
	R2	2	0	1	1	2	0	1	2	1	10
18	R1	1	1	2	1	1	1	0	2	2	11
	R2	2	1	2	1	1	1	1	2	2	13
Mean score (SD)		1.3 (0.6)	0.6 (0.7)	1.4 (0.6)	1.4 (0.6)	1.3 (0.7)	0.5 (0.6)	0.5 (0.6)	1.9 (0.5)	1.5 (0.6)	10.3 (3.1)

Item 1: Authors and institution information. Title of the video including name of the procedure and pathology treated. Item 2: Formal presentation of the case, including patient details and imaging, indication for surgery, co-morbidities, and previous surgery. Patient anonymity is maintained. Item 3: Position of patient, access ports, extraction site and surgical team. Item 4: The surgical procedure is presented in a standardised step-by-step fashion. Item 5: The intra-operative findings are clearly demonstrated, with constant reference to the anatomy. Item 6: Relevant outcomes of the procedure are presented, including operating time, post-operative morbidity and histology when appropriate. Item 7: Additional graphic aid is included, such as diagrams, snapshots and photographs, to demonstrate anatomical landmarks, relevant or unexpected finding, or to present additional educational content. Item 8: Audio or written commentary in English language is provided. Item 9: The image quality is appropriate, with a constant clear view of the operating field. The video is fluent with appropriate speed. *Flexible nasoendoscopy videos, $n = 18$. LAP-VEGaS = Laparoscopic Surgery Video Educational Guidelines; SD = standard deviation

Video quality assessment

The Laparoscopic Surgery Video Educational Guidelines assessment (individual criteria and total scores) for both FNE and peritonsillar abscess drainage videos are presented in Tables 2 and 3, respectively. In summary, the mean total

Laparoscopic Surgery Video Educational Guidelines scores for FNE and peritonsillar abscess drainage videos were 10.3 (SD = 3.1) and 11.7 (SD = 4.6), respectively, out of a possible 18 points. Only seven videos (26 per cent) were assessed as high quality, with the majority ($n = 18$; 67 per cent) designated

Table 3. Peritonsillar abscess drainage video quality evaluation using 2020 LAP-VEGaS tool*

Video number	Rater (R1/2)	Items (scores)									Total LAP-VEGaS score (/18)
		Item 1	Item 2	Item 3	Item 4	Item 5	Item 6	Item 7	Item 8	Item 9	
19	R1	0	0	0	1	1	0	1	0	2	5
	R2	1	0	0	1	1	1	0	0	2	6
20	R1	0	1	1	1	1	1	0	1	1	7
	R2	1	2	1	2	1	1	0	2	2	12
21	R1	1	2	1	1	2	2	1	2	1	13
	R2	1	2	1	2	2	2	2	2	2	16
22	R1	1	2	2	2	2	2	2	2	2	17
	R2	1	2	2	2	2	2	2	2	2	17
23	R1	2	2	2	2	2	1	0	2	2	15
	R2	2	2	2	2	2	2	2	2	2	18
24	R1	1	2	1	1	1	1	0	2	1	10
	R2	1	2	1	1	2	2	0	2	2	13
25	R1	1	2	1	1	2	1	2	2	1	13
	R2	2	2	1	2	2	1	2	2	2	16
26	R1	1	2	2	1	1	1	0	2	1	11
	R2	2	1	2	1	2	1	0	2	2	13
27	R1	0	0	0	1	0	0	0	0	2	3
	R2	1	0	0	1	1	0	0	0	2	5
Mean score (SD)		1.1 (0.6)	1.4 (0.8)	1.1 (0.7)	1.4 (0.5)	1.5 (0.6)	1.2 (0.7)	0.8 (0.9)	1.5 (0.8)	1.7 (0.4)	11.7 (4.6)

Item 1: Authors and institution information. Title of the video including name of the procedure and pathology treated. Item 2: Formal presentation of the case, including patient details and imaging, indication for surgery, co-morbidities, and previous surgery. Patient anonymity is maintained. Item 3: Position of patient, access ports, extraction site and surgical team. Item 4: The surgical procedure is presented in a standardised step-by-step fashion. Item 5: The intra-operative findings are clearly demonstrated, with constant reference to the anatomy. Item 6: Relevant outcomes of the procedure are presented, including operating time, post-operative morbidity and histology when appropriate. Item 7: Additional graphic aid is included, such as diagrams, snapshots and photographs, to demonstrate anatomical landmarks, relevant or unexpected finding, or to present additional educational content. Item 8: Audio or written commentary in English language is provided. Item 9: The image quality is appropriate, with a constant clear view of the operating field. The video is fluent with appropriate speed. *Peritonsillar abscess drainage videos, n = 9. LAP-VEGaS = Laparoscopic Surgery Video Educational Guidelines; SD = standard deviation

as medium quality. Inter-rater reliability was moderate for both FNE (weighted Cohen’s kappa co-efficient of 0.66) and peritonsillar abscess drainage videos (weighted Cohen’s kappa co-efficient of 0.61).

For FNE videos, there was a high positive correlation between video length and total Laparoscopic Surgery Video Educational Guidelines score ($r = 0.62$; $p = 0.01$). For peritonsillar abscess drainage videos, there was a very high negative correlation between video age and total Laparoscopic Surgery Video Educational Guidelines score ($r = -0.81$; $p = 0.01$). The full results from the Pearson’s correlation analysis between video characteristics and total quality scores are provided in Table 4.

Discussion

The importance of YouTube as a platform for surgical education is likely to rise in light of the Covid-19 pandemic causing disruptions to elective care and medical teaching.¹³ Therefore, it is imperative that videos available on platforms such as YouTube are assessed by the surgical community before approval or recommendation for use in surgical education. Without verification or peer review of published videos by suitably qualified experts, there is a danger that new ENT doctors may refer to low-quality material purveying incorrect or potentially dangerous procedural techniques, putting patient safety at risk.

Table 4. Video characteristics associated with overall video quality

Video characteristic	Flexible nasoendoscopy videos*		Peritonsillar abscess drainage videos†	
	Pearson’s r	P-value	Pearson’s r	P-value
View count	0.10	0.70	-0.58	0.10
Video age	-0.14	0.58	-0.81	0.01 [‡]
Video length	0.62	0.01 [‡]	-0.06	0.87
Number of comments	-0.10	0.70	-0.30	0.43
Number of likes	-0.04	0.88	-0.39	0.30

*n = 18; †n = 9. ‡Indicates significant p-value

The Laparoscopic Surgery Video Educational Guidelines scores showed that 18 (67 per cent) of the 27 videos were of medium quality and only 7 (26 per cent) were of high quality. Previous studies performing Laparoscopic Surgery Video Educational Guidelines assessment of neck dissection, thyroidectomy and parathyroidectomy YouTube videos reported similar findings, with the majority being of medium quality.^{6,14} We also analysed the relationship between the characteristics of each video and its educational quality. Traditional markers of popularity, such as total view count, number of

comments and number of likes, were not predictors of high-quality videos. For videos relating to FNE, we found that those of a longer duration were scored as higher quality. For videos relating to peritonsillar abscess drainage, we found that videos published on the platform more recently were scored as higher quality. In comparison, Chorath *et al.* noted a low correlation between overall quality and dislikes or likes of thyroidectomy and parathyroidectomy videos, which emphasises the difficulty of outlining educational metrics from specific video characteristics.¹⁴ The search algorithms used to populate 'relevant' videos on YouTube are unknown, but highlight the dissonance between targeting viewership and ensuring educational significance. Therefore, considering the growing popularity of YouTube as an educational tool, a greater effort should be undertaken to understand the search algorithms applied by the platform.

One significant limitation of YouTube is that videos are freely uploaded without ethical approval, and with no evaluation of the video author or the content. Video authors range from surgical instrumentation companies, marketing their products, to surgeons promoting their practice. Therefore, the content available online may be promoted for alternative purposes to education, such as patient awareness, marketing or entertainment.⁶ Learners can provide feedback through the comments or likes feature, although this is optional and does not constitute rigorous peer review. As a result, learners must independently appraise the educational value of online videos. Another limitation is the difficulty of optimally recording operations that are performed within a narrow field of vision. This was a common theme for peritonsillar abscess drainage videos, which consist of tiny incisions in a small space with suboptimal lighting.¹⁵

There are also limitations to using the Laparoscopic Surgery Video Educational Guidelines assessment tool, which was primarily created for assessing the suitability of videos being submitted to conferences and academic presentations. Most YouTube videos provided author information, indication for procedure, step-by-step process, and audio or written commentary. The remaining criteria were less relevant to FNE and peritonsillar abscess procedures, which meant they are unlikely to score full marks. For example, both procedures are frequently performed without pre-operative investigations, and similarly, the outcomes from either procedure, such as operating time or post-operative morbidity, are not commonly measured. Furthermore, the checklist was designed for English-speaking learners, which means videos narrated in an alternative language are penalised. One important criterion that was regularly overlooked is patient positioning, which is pivotal to achieving the optimal field of vision for peritonsillar abscess drainage.

Most UK medical students receive less than two weeks' ENT exposure and therefore have little experience of the specialty upon graduation.¹⁶ However, on joining an ENT department, the GMC requires doctors to undergo an induction programme, which teaches the practical and procedural skills required for the emergency patient take. A nationwide survey of first on-call ENT doctors reported that many struggled to perform ENT procedures independently and found being on-call a stressful experience.³ Consequently, there have been suggestions to improve the ENT induction programme, most notably a national ENT boot camp to mitigate the regional variation in standards.¹⁷ Surgical educational videos may serve as a useful adjunct, and research has proven their direct educational value in training.¹⁸ For example,

Russell *et al.* showed that trainees had a better understanding of FNE after watching a narrated educational video of the procedure.¹⁹ Considering that video-based learning can be accessed from any location, it could provide a more economical and effective method for delivering an induction programme.

There is already an online ENT induction programme for junior doctors provided by ENT UK, a professional membership body that represents ENT surgery in the UK. The organisation has developed the resource over several years, and it is freely accessible. The website contains a catalogue of videos that reflect the core knowledge and practical skills required for a junior doctor starting an ENT placement.²⁰ There are teaching videos for FNE but not for peritonsillar abscess drainage. Other platforms for surgical video-based learning include online video publications such as: *The Journal of Visualized Surgery*, *The Journal of Medical Insight*, *The Journal of Visualized Experiments* and *CSurgeries*.²¹ We propose that all new surgical education videos teaching FNE and peritonsillar abscess drainage should be developed with reference to the Laparoscopic Surgery Video Educational Guidelines checklist and be offered to peer review, before being uploaded onto online platforms for dissemination.

- Most junior doctors starting a new placement in ENT attend an induction programme, which includes learning flexible nasendoscopy (FNE) and peritonsillar abscess drainage
- Currently, this induction is not standardised; however, ENT UK have created an online resource bank with videos teaching different procedures
- Another learning resource is YouTube, which has become increasingly popular since the coronavirus disease 2019 pandemic
- The Laparoscopic Surgery Video Educational Guidelines video assessment tool has been used to evaluate the educational quality of surgical videos uploaded to YouTube
- This assessment tool was applied to YouTube videos demonstrating FNE and peritonsillar abscess drainage; our analysis showed limited high educational quality videos
- YouTube may provide a useful adjunct for ENT induction, and can be accessed remotely

Conclusion

Doctors in post-graduate training are increasingly referring to online videos as their preferred means of learning surgical procedures. This is the first study to critically evaluate the educational quality of YouTube videos demonstrating FNE and peritonsillar abscess drainage. Overall, the educational quality of videos varies significantly, and this is likely attributable to the lack of content peer review on the platform. Looking towards the future, the Covid-19 pandemic has manifested an urgent need for online platforms that contain a library of high-quality educational videos, with the aim of supporting or, in part, replacing traditionally didactic elements of ENT induction.

Competing interests. None declared

References

- 1 Jaques H. GMC to develop induction programme for all new doctors working in the UK. *BMJ* 2011;**343**:d5979
- 2 Gupta G, McDowell RH. Peritonsillar abscess. In: *StatPearls* [internet]. Treasure Island, FL: StatPearls Publishing, 2022 Jul 18
- 3 Biswas D, Rafferty A, Jassar P. Night emergency cover for ENT in England: a national survey. *J Laryngol Otol* 2009;**123**:899–902
- 4 Kucheria A, Bastianpillai J, Khan S, Acharya V. An induction programme used to improve confidence general practitioner trainees in managing

- hospital ear, nose and throat emergency presentations. *Adv Med Educ Pract* 2021;**12**:1285–91
- 5 Seifman MA, Fuzzard SK, To H, Nestel D. COVID-19 impact on junior doctor education and training: a scoping review. *Postgrad Med J* 2022;**98**:466–76
- 6 Luu NN, Yver CM, Douglas JE, Tasche KK, Thakkar PG, Rajasekaran K. Assessment of YouTube as an educational tool in teaching key indicator cases in otolaryngology during the COVID-19 pandemic and beyond: neck dissection. *J Surg Educ* 2021;**78**:214–31
- 7 Rapp AK, Healy MG, Charlton ME, Keith JN, Rosenbaum ME, Kapadia MR. YouTube is the most frequently used educational video source for surgical preparation. *J Surg Educ* 2016;**73**:1072–6
- 8 Koya KD, Bhatia KR, Hsu JTS, Bhatia AC. YouTube and the expanding role of videos in dermatologic surgery education. *Semin Cutan Med Surg* 2012;**31**:163–7
- 9 Celentano V, Browning M, Hitchins C, Giglio MC, Coleman MG. Training value of laparoscopic colorectal videos on the World Wide Web: a pilot study on the educational quality of laparoscopic right hemicolectomy videos. *Surg Endosc* 2017;**31**:4496–504
- 10 Deal S, Alseidi A. Concerns of quality and safety in public domain surgical education videos: an assessment of the critical view of safety in frequently used laparoscopic cholecystectomy videos. *J Am Coll Surg* 2017;**225**:725–30
- 11 Rossler B, Lahner D, Schebesta K, Chiari A, Piochl W. Medical information on the Internet: quality assessment of lumbar puncture and neuroaxial block techniques on YouTube. *Clin Neurol Neurosurg* 2012;**114**:655–8
- 12 Celentano V, Smart N, Cahill RA, Spinelli A, Giglio MC, McGrath J *et al.* Development and validation of a recommended checklist for assessment of surgical videos quality: the LAParoscopic surgery Video Educational GuidelineS (LAP-VEGaS) video assessment tool. *Surg Endosc* 2021;**35**:1362–9
- 13 Al-Jabir A, Kerwan A, Nicola M, Alsafi Z, Khan M, Sohrabi C *et al.* Impact of the coronavirus (COVID-19) pandemic on surgical practice - part 1. *Int J Surg* 2020;**79**:168–79
- 14 Chorath KT, Luu NN, Douglas JE, Yver CM, Thakkar PG, Tasche KK *et al.* Assessment of YouTube as an educational tool in teaching thyroidectomy and parathyroidectomy. *J Laryngol Otol* 2022;**136**:952–60
- 15 Nair AG, Kamal S, Dave TV, Mishra K, Reddy HS, Della Rocca D *et al.* Surgeon point-of-view recording: using a high-definition head-mounted video camera in the operating room. *Indian J Ophthalmol* 2015;**63**:771–4
- 16 Mace AD, Narula AA. Survey of current undergraduate otolaryngology training in the United Kingdom. *J Laryngol Otol* 2004;**118**:217–20
- 17 Smith ME, Trinidad A, Tysome JR. The ENT boot camp: an effective training method for ENT induction. *Clin Otolaryngol* 2016;**41**:421–4
- 18 Hayden EL, Seagull FJ, Reddy RM. Developing an educational video on lung lobectomy for the general surgery resident. *J Surg Res* 2015;**196**:216–20
- 19 Russell KA, Brook CD, Platt MP, Grillone GA, Aliphos A, Noordzij JP. The benefits and limitations of targeted training in flexible transnasal laryngoscopy diagnosis. *JAMA Otolaryngol Head Neck Surg* 2017;**143**:707–11
- 20 ENT UK Junior Doctors Induction Resources. In: https://www.entuk.org/professionals/training/ent_uk_junior_doctors_induction_resources.aspx [22 March 2022]
- 21 Torre ABDL, Joe S, Lee VS. An evaluation of YouTube videos as a surgical instructional tool for endoscopic endonasal approaches in otolaryngology. *Ear Nose Throat J* 2021. Epub 2021 Dec 13