

Evaluation of Live Surgery Meetings: Our Experience with the “Live Makeover Aesthetic Surgery Symposium”

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Background: Live Surgery Meetings have been established as a very effective means to demonstrate certain surgical techniques and intraoperative decision-making. However, many authors still question the ethics of this approach. We present our experience as organizers of the Live Makeover Aesthetic Surgery Symposium, an annual international live surgery meeting taking place in Athens, Greece.

Methods: Throughout the course of our meetings, 2 surveys were performed, 1 after Live Makeover Aesthetic Surgery Symposium 3, comparing the educational value between live surgery and pre-recorded videos, and the second after LMASS 6, re-evaluating the educational value of live surgery, as well as the ethics of this educational method and the patient safety. In addition, we studied the results of the patients operated on in all of our meetings, and their level of satisfaction.

Results: Based on the results of the first survey, the superior educational value of live surgery was obvious. The second survey confirmed those valuable educational benefits. In addition, the concerns on both surgical outcomes and patient safety were minimal. The patients showed a very high level of satisfaction through their answers. The complications encountered were only 2 of the 49 live surgical demonstrations and were not directly related to the live demonstration.

Conclusions: Based on our study, live surgery is an effective, safe educational tool. However, strict guidelines have to be followed to ensure high educational value and patient safety. Based on our 9-year experience with our live surgery meeting, we provide detailed guidelines for optimal outcomes. (*Plast Reconstr Surg Glob Open* 2021;9:e3350; doi: 10.1097/GOX.0000000000003350; Published online 25 January 2021.)

INTRODUCTION

Nowadays, plastic surgeons seek new, effective didactic tools that can assist them to follow constant surgical advancements, familiarize with cutting-edge techniques, to apply them in a real setting. At the same time, expert plastic surgeons have a dual responsibility: to fulfil the patient's needs while educating younger physicians, thus improving the overall level in their specialty. These circumstances have provided fertile ground for the establishment of Live Surgery Demonstrations in Plastic Surgery meetings.

The Baker Gordon Symposium¹ was the first live surgery symposium that focused on aesthetic surgery, and set a precedent for aesthetic surgery education over the

ensuing decades. Historically, the pioneers in aesthetic techniques first presented their innovations at the Baker Gordon Symposium, helping educate and train their peers to perform cosmetic procedures.

Regarding live surgery meetings, however, both physicians and patients often question the ethical aspect of this practice, and claim that live surgery is in conflict with the patient-centered approach and might endanger the surgical outcome. The aim of our study was to present our 9-year experience in live surgery meetings, by reporting the clinical outcomes of all patients involved in our own meetings.

The Live Makeover Aesthetic Surgery Symposium (LMASS) is an annual international plastic surgery meeting that the 3 authors have been organizing since 2011. The cornerstone of the meeting is live surgery, performed by the first (GS, plastic surgeon) and second author (AS, ENT surgeon), as well as an international faculty of world-class experts. Subsequently, we discuss ethical issues

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related to live surgery and provide recommendations for patient safety.

MATERIALS AND METHODS

We performed a retrospective review of all the patients operated on live during our meetings. We have performed 9 meetings. The first three were pure Rhinoplasty Meetings. The 6 that followed were international Aesthetic Plastic Surgery Meetings, called “Live Makeover Aesthetic Surgery Symposium.” The program of each meeting was a combination of live surgeries and lectures by plastic surgeons and ENT surgeons.

During the LMASS, in the plenary hall of the congress ‘Eugenides Foundation Hall’ in Athens, Greece, participants can attend streamed live surgery demonstrations on 3 consecutive days. All surgical procedures are performed at REA Maternity Clinic with live streaming and moderation. There are always 2 moderators in each surgery, 1 in the operating room and 1 in the plenary hall.

During the 3 Rhinoplasty Meetings, 9 rhinoplasties were performed in total, all by the second author (AS). During the six LMASS that followed, a total of 40 live surgeries were performed. Out of these 40 surgeries, 15 were performed by the first and the second author (GS and AS), and 25 were performed by international invited surgeons. The surgeries performed are shown in Table 1.

The total of patients operated on throughout our meetings were 41 (Some patients underwent more than 1 surgery in one setting during our meetings). The total of 41 patients that were operated on in our 9 meetings were included in our database.

Two surveys were conducted through the years. The first one after the LMASS 3 and the second after the LMASS 6.

First Survey

The third LMASS in particular was a combination of both live surgical demonstrations and pre-recorded videos of surgical demonstrations. The program included 3 live and 15 pre-recorded demonstrations. This was the only meeting to include pre-recorded demonstrations in its program. All the rest of our meetings had only live surgeries and lectures. The pre-recorded surgical

demonstrations were presented instead of lectures by all members of the faculty. They would moderate and answer the questions of the participants. Participants of the LMASS 3 attended both streamed live surgeries and pre-recorded sessions on 3 consecutive days. Live surgical demonstrations and pre-recorded videos included rhinoplasties, facelifts, blepharoplasties, breast augmentations, mastopexies, abdominoplasties, and liposuctions.

After the end of the LMASS 3, a questionnaire was given to all the participants (Tables 2 and 3). Participants had to compare the live surgery demonstrations with the pre-recorded videos as to their educational value. Previous surveys had showed a positive perception of the educational value of the pre-recorded videos.^{2,3} However, the attractiveness of the videos is often challenged by bias of pre-selection.⁴ Our aim was to compare the attractiveness and educational value of the 2.

Second Survey

A second survey was conducted at the end of the LMASS 6, during which the participants attended 14 live surgeries (Table 1). A questionnaire was given to all participants, which they had to complete to receive their certificate of attendance, including CME points. The first part of the survey (Table 4) consisted of questions on participant baseline characteristics, while the second part (Table 5) concerned patient safety and educational value. All questions contained fixed reply options. The aim of the survey was to reevaluate all aspects of live surgery (educational and ethical). In addition to the 2 surveys, we performed a retrospective review of all the patients operated on live during our meetings.

Length of stay, postoperative outcomes, complications, and need for surgical revision were reviewed. All 41 patients completed a questionnaire evaluating their overall experience being operated on in the meeting, and their aesthetic result (Table 6).

Overall, the goal of our study was to evaluate the live surgical demonstrations regarding the following aspects:

- 1) Educational value, taking into account the attendants’ answer in the survey;
- 2) The safety of the patients operated on throughout our live surgery meetings, analyzing the complications and stay in the clinic postoperatively;

Table 1. Surgeries Performed during Our Nine Live Surgery Meetings

	1st Rhinoplasty Meeting	2nd Rhinoplasty Meeting	3rd Rhinoplasty Meeting	1st LMASS	2nd LMASS	3rd LMASS	4th LMASS	5th LMASS	6th LMASS
Rhinoplasty	3	3	3	1	1	1	1	2	5
Facelift				1	1	1	2	2	4
Mid-face lift									1
Neck liposuction								1	
Neck sculpting with RFAL									1
Blepharoplasty					1			1	2
Brow lift									1
Breast augmentation						1	1	2	
Mastopexy								1	
Augmentation mastopexy								1	
Arm sculpting with RFAL								1	
Brazilian butt lift							1	1	
Labiaplasty								1	

Table 2. LMASS 3 Participant Characteristics

Description	No. Respondents (%)
Age group (y)	
Below 30	12 (9)
31–50	82 (62)
51–70	38 (29)
Profession	
Plastic surgeon	70 (53)
ENT surgeon	40 (30)
Resident	17 (13)
Nurse	2 (2)
Other	3 (2)
No. respondents who had attended live surgical demonstrations in the past	79 (60)
No. respondents who had attended prerecorded surgery in the past	92 (70)

Table 3. Live Surgery versus Prerecorded Videos (1–10) (1 = poor)

	Live	Prerecorded
Overall educational value	9	7
Learn tips and tricks	9	7
Learn to manage complications	8	6
Attractiveness of the learning tool	10	7
Adopt a new surgical technique	8	6
Alertness during observation	9	6
Interactivity	9	8
Did you feel that patient safety was an issue in the live surgical demonstration?	5	127
Did you observe any kind of surgeon distraction during live surgery?	7	125
During live surgeries, did you have the impression that there were factors (pressure and anxiety) influencing the surgeons' performance?	8	124
Do you feel that the patients' privacy was jeopardized?	10	122
Would you participate less often in surgical education if prerecorded videos would replace live surgery?	92	40

Table 4. LMASS 6 Participant Characteristics

Description	No. Respondents (%)
Age group (y)	
Below 30	17 (8)
31–50	136 (65)
51–70	57 (27)
Profession	
Plastic surgeon	78 (37)
ENT surgeon	67 (32)
Resident	63 (30)
Nurse	0 (0)
Other	2 (1)

- the aesthetic outcomes of the procedures performed during the meetings, analyzing the answers of the patients in their own questionnaire;
- comparison of live surgery to pre-recorded videos, analyzing the survey after LMASS 3.

RESULTS

First Survey

An estimated 210 participants (including 20 faculty members) attended the LMASS 3. In total, 132 participants

Table 5. Outcomes of Survey Questions on Safety and Educational Value of Live Surgery for All Respondents

Question	No. Respondents (%)
Were you concerned that the patients' safety was NOT the highest priority?	
Never or rarely	193 (92%)
Often or almost always	17 (8%)
Were you concerned that the patients' outcomes may have been compromised?	
Never or rarely	199 (95%)
Often or almost always	11 (5%)
Do you think that the complication risk is higher, equal, or lower when compared with routine practice?	
Higher	11 (5%)
Equal	189 (90%)
Lower	10 (5%)
Did you have the impression that there were factors (pressure and anxiety) influencing the surgeons' performance?	
Never or rarely	200 (95%)
Often or almost always	10 (5%)
Were the moderators sufficiently explanatory guiding the attendants through each step of the procedure?	
Never or rarely	9 (4%)
Often or almost always	201 (96%)
Were the moderators' intervention causing any distraction of the surgeon?	
Never or rarely	15 (7%)
Often or almost always	195 (93%)
Was the quality of the image, sound from the OR and the communication speed satisfactory?	
yes	210 (100%)
Were the attendants' questions addressed and adequately answered by the surgeon?	
Never or rarely	15 (7%)
Often or almost always	195 (93%)
How would you rate the overall educational value? 1–10 (1 = poor) mean (SD)	9.1

Table 6. Patient Satisfaction

Question	YES	NO
Are you satisfied with the result?	40	1
Do you feel that you received a less than optimal surgical care because it was live?	0	41
Did you feel familiarized with the surgeon?	0	41
Did you feel that your safety was compromised in any way?	0	41
Did you receive the postoperative care you expected?	41	0
Was the result "natural"?	41	0

completed the survey. Respondents' characteristics and data about previous experience with live surgery and prerecorded videos are represented in Table 2. Before the congress, 60% (79) and 70% (92) of the respondents had experienced live surgical demonstrations and prerecorded videos, respectively.

Comparison of the 2 Approaches (Table 3)

From the survey, the education value of the live surgery in the survey was seen as exceptional. Based on the results, by observing live surgery, attendants acquired practical knowledge that they can apply in their own surgeries to a significantly greater extent. The interactivity of the whole approach stimulated their interest and level of alertness at a much higher level.

In addition, there was minimal concern about the aesthetic outcomes or the potential complications of the patients operated on live during the meeting. Because of the big difference in the scores between the 2 educational methods, we decided to not include the recorded sessions in our future meetings. Of course, we should not overlook the advantages of pre-recorded videos as a didactic tool. Pre-recorded videos can be viewed in a much wider arena, such as in journal articles, on YouTube, and shown during lectures at conferences. Moreover, from an organizer's perspective, the added pressure regarding the organization and execution of live surgery is avoided. At this point, it is useful to say that a live surgery demonstration can be recorded and shown and watched over and over after the meeting.

Second Survey

Participants

An estimated 275 participants (including faculty members) from 32 countries worldwide attended the LMASS 6. In total, 210 participants completed the survey. Respondents' characteristics and data are presented in Table 4.

Based on the survey (Table 5), there were minimal concerns on surgical outcomes and patient safety. In addition, they felt that the procedure had a smooth flow with insignificant distractions of the surgeon. In conclusion, the second survey confirmed the valuable educational benefits of live surgery.

We should mention here that our survey (Table 5) contained a combined question regarding sound and image quality. This could be considered as a limitation because the two parameters could differ. However, given the high level of the attendants' satisfaction, as shown in the questionnaires, was insightful regarding the quality of the transmission.

Patient Analysis (Complications and Suboptimal Outcomes)

All 41 patients stayed only 1 night at the hospital except 2 patients, who underwent combined procedures (case 1: facelift, rhinoplasty, and breast augmentation; case 2: facelift, blepharoplasty, and rhinoplasty) and stayed an additional night at the clinic. The overall degree of patient satisfaction was very high (Table 6).

Complications

Of the 41 patients operated on in all 9 meetings, 2 complications occurred. The first was a hematoma that occurred in a male facelift performed during LMASS 6. This occurred 12 hours after surgery, although the blood pressure was normal. It did not require surgical intervention and was treated with drainage and pressure. One more patient, who did a facelift during LMASS 5, developed hypertrophic scars around the ear. She was treated with cortisone injections, and the appearance of the scars improved significantly.

Suboptimal Outcomes

In one patient who had a blepharoplasty of the upper eyelids during LMASS 5, the skin excess of the upper eyelids was undercorrected. The patient was reoperated by the senior surgeon 1 year after the primary procedure.

DISCUSSION

Live surgical demonstrations have become very popular at meetings all over the world.

Their educational value for various surgical specialties has been studied and proved.

There are many studies in the medical literature supporting that live surgery is the most effective means to demonstrate certain surgical techniques and intraoperative decision-making.⁴⁻¹⁰ Other articles demonstrate the superiority of live surgery in comparison with prerecorded videos.^{4,9} There are other reports, however, claiming that the educational value of prerecorded videos is non-inferior to live surgery.^{3,11}

Safety and ethical issues of live surgery have also been debated. Some articles are in favor of live surgery^{4,6,7,12-14} reporting surgical outcomes similar to routine cases. Other articles, however, express concerns about the possible distraction of the surgeon due to the stressful nature of live broadcast and potential increase in patients' risk.¹⁵⁻¹⁷ In fact, many surgical societies in Japan, England, and USA have banned the practice of the live surgical broadcast.¹⁸⁻²⁰ Because of these opposing opinions, many surgeons, but medical societies as well, have stressed the necessity of developing guidelines on conducting live surgical demonstrations.^{8,16,17,19-21}

In fact, Brunckhorst¹⁷ stated that only cardiothoracic, urology, and vascular surgical societies currently offer guidelines on conducting live surgical demonstration, and that more medical societies should provide similar guidelines.

Based on our experience and our surveys, the following conclusions are drawn.

Live Surgery Demonstration versus Prerecorded Surgery

Based on an analytical questionnaire filled by the attendants of the 3rd LMASS, Live Surgery Demonstration appeals more to Plastic Surgery meeting attendants, for the following reasons:

- its interactive and immediate nature, which offers direct access to ask questions and observe the expert's decision-making, especially during challenging moments of the procedure
- live surgery is authentic, unedited, and leaves no doubts about the surgeon's skills and efficacy of demonstrated surgical techniques. The attendant can judge the end result of a patient being operated on during the meeting. On the other hand, the fact that prerecorded videos have been edited creates uncertainty. Therefore, there is less probability of a new technique being adopted by attendants, which is demonstrated in our survey.

The educational value of any live surgery meeting is further improved by showing results of patients who were operated on during previous meetings. This demonstration of previous cases is part of the program of the LMASS every year.

Patient Safety

Attendants who responded to our second survey had minimal concerns on surgical outcomes and patient safety. The high level of patient satisfaction also confirms the quality of care. The complications observed were not

directly related to the live demonstration. Male facelift has a high hematoma rate,^{22,23} while keloid and hypertrophic scars are caused by a variety of local, systemic, and genetic factors.^{24,25} Based on our experience, we believe that the following guidelines should be provided for those conducting live surgical demonstrations.

Selection of the Surgeon

The overall organization and success of a live surgery meeting begins with the correct selection of the experts who will perform the operation. More specifically, the meeting organizer should always select plastic surgeons with recognition and acknowledged expertise in specific procedures, as well as long-standing experience in live surgery demonstration.

At the LMASS, the senior authors (GS and AS) are responsible for this selection. The visiting surgeons have been observed when performing surgery both in meetings and in the clinic where they operate, by the senior authors, before they are invited. By abiding by these guidelines, the organizers ensure that the visiting surgeon will not be affected by factors such as the unfamiliar environment and team in the OR and the potential pressure of live surgery demonstration.

Furthermore, apart from the acknowledged surgical skill of the surgeons who will perform the live demonstration, the LMASS organizers always consider their aesthetics as well. Without a doubt, aesthetic judgement is what differentiates the surgical outcomes of various surgeons. The plastic surgery patient is unique because the outcome of an aesthetic plastic surgery procedure depends on the surgeon's (and the patient's) aesthetic judgment. In addition, the plastic surgery trends, as well as the aesthetics may differ in different countries. This specific aesthetic sense and philosophy of the visiting surgeon has to coincide with those of the senior authors, who always aim for natural results.

What's more, the character of the invited surgeons is also considered, through the interpersonal relationship between the latter and the senior authors. A positive nature and a modest disposition are key to a successful outcome. They facilitate the communication between the senior authors and the invited surgeon when selecting the patient, and when mapping out the surgical plan.

The invited surgeon's character also plays a pivotal role in his selection, as it is critical for the effective communication with the organizers and with the patients, preoperatively and postoperatively.

Patient Selection

- All patients who were operated on at the LMASS are strictly selected by the senior authors (GS and AS). The senior authors initially design the scientific program, and the patients are thereafter selected, based on the specifications of each procedure.
- The patients' aesthetic problems should always be appropriate for the techniques to be demonstrated.
- The senior authors will discuss thoroughly with the candidate patient all aspects of the surgery, the expected

outcome, and the patient's aesthetic preference, to ensure that the patient has realistic expectations and desires a natural result. Once the primary selection has been made by the senior authors, the invited surgeon is contacted to discuss regarding the potential patient, examine the preoperative pictures, and finalize the selection.

Intraoperatively

The Surgical Team

- No matter how experienced the surgeon is, the importance of the surgical team assisting in the OR is crucial. The team consists of a specialist plastic or ENT surgeon, an anaesthesiologist, and a scrub nurse. All of them are members of the surgical team of the senior authors, with extensive experience in these particular procedures.
- After assigning a surgical team to each visiting surgeon, each member of the team thoroughly studies the procedure that will be presented, through previous live surgery demonstrations or publications of the visiting surgeon they will be assisting, to make sure everyone is highly knowledgeable before the demonstration.
- In a few cases, the visiting surgeons preferred to be accompanied by members of their own surgical team, which is unarguably accepted.

The Moderators

- Moderators play a decisive role in the overall outcome of the live demonstration because they have the responsibility of minimizing distraction for the surgeon—thus protecting the patient and maximizing the educational value for the attendants. At the LMASS, the senior authors provide 2 moderators during each live demonstration: one present at the OR and one at the conference hall. Both moderators are always experienced members of the faculty and specialized in the specific procedures.
- The moderators are encouraged to pose questions that address all levels of knowledge and medical education of the attendants, including queries that would interest interns as well as very experienced surgeons. Elementary and basic queries should not be disregarded because experienced surgeons often feel uneasy about asking those queries themselves.

Experienced Production Team

The educational value of live surgery demonstration is undoubtedly defined by the quality of image, sound, and communication speed between the OR and the conference hall. At the LMASS, the senior surgeon has been collaborating for 9 years with a highly trained production team that is familiar with each step of the surgical procedures and, thus, can be filming in the right place at the right time, maximizing visibility for the attendants.

The Audience

During the LMASS, the audience is located at the conference hall, observes every step of the live surgery demonstrations, and can pose a question at any time. To avoid multiple distractions of the surgeon, the questions

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are not directed immediately to the OR. Instead, they are projected on a large screen and they are filtered by the moderator who is present in the conference hall; the moderator then decides upon the questions to be communicated to the OR.

Post-operatively

The patients' follow-up is performed by a highly experienced team of physicians during the meeting and by the senior authors themselves after the LMASS.

Coordination and Direction of the Meeting

A large-scale meeting with live surgeries requires excellent and timely direction and coordination. For an annual meeting, the organization starts as soon as the previous meeting has ended because there is a large number of projects that need to be executed on schedule. In addition, countless hours of testing are required to make sure that the visual and sound result is impeccable and that the live link between the OR and the conference hall has no delay whatsoever.

Furthermore, the publicity and communication of an international event requires several months of work in advance. The organization of the LMASS is entirely undertaken by the 3 authors.

In addition, a meeting with live surgery demonstrations is in many ways similar to the production of a live TV program. A main presenter and coordinator is in charge of the program flow: of connecting to the OR when the surgeon is ready for his live demonstration; returning, later on, to the conference hall for the lectures segment and connecting back to the OR when essential (eg, when the surgeon is ready to present the final surgical outcome). At the LMASS, the third author (ES) is responsible for the flow and overall coordination of the event.

Financial Aspects

At the LMASS, attendees pay one all-inclusive fee, which covers lectures, prerecorded videos, and live surgery demonstrations. Surgeons who perform live surgery do not receive a fee for their participation. However, the organizational committee covers all travel and accommodation expenses for all members of the faculty. Patients who undergo live surgery cover the cost of the clinic, but do not pay any fee to the surgeon. It goes without saying that patients always meet and discuss thoroughly with their surgeon days before the live demonstration and before filling in the informed consent.

CONCLUSIONS

Based on our experience and the results of our study, conducting meetings with live surgical demonstrations is the most effective means to demonstrate certain surgical techniques and intraoperative decision-making. Hard work by the organizers, always obeying the abovementioned guidelines, can ensure that the educational benefits will be accompanied by optimal surgical outcomes and a high level of satisfaction by the patients who underwent the operation.

REFERENCES

1. Stuzin JM. Celebrating the Fiftieth Baker Gordon Symposium on cosmetic surgery: The legacy of Thomas J. Baker, M.D. *Plastic Reconstr Surg*. 137:484–493.
2. Finch W, Masood J, Buchholz N, et al. Would you want to be the patient? “Live surgical broadcast” or “as-live unedited surgical broadcast.” *J Endourol*. 2015;29:821–829.
3. Phan YC, Segaran S, Wiseman O, et al. Which is better? “live” surgical broadcasts vs “as-live” surgical broadcasts. *J Endourol*. 2016;30:1022–1028. doi:
4. Elsamra SE, Fakhoury M, Motato H, et al. The surgical spectacle: A survey of urologists viewing live case demonstrations. *BJU Int*. 2014;113:674–678.
5. Leavitt DA, Kavoussi LR. Live surgical demonstrations: An endangered species. *Urol Oncol*. 2015;33:159–162.
6. Ohki T. [Guidelines on live demonstrations of thoracic and cardiovascular surgery: Pros and cons]. *Nihon Geka Gakkai Zasshi*. 2013;114:132–136.
7. Misrai V, Guillot-Tantay C, Pasquié M, et al. Comparison of outcomes obtained after regular surgery versus live operative surgical cases: Single-centre experience with green laser enucleation of the prostate. *Eur Urol Focus*. 2019;5:518–524.
8. Salami SS, Elsamra SE, Motato H, et al. Performing in the surgical amphitheater of today: Perception of urologists conducting live case demonstrations. *J Endourol*. 2014;28:1121–1126.
9. Sugarman J, Taylor H, Jaff MR, et al. Live case demonstrations: Attitudes and ethical implications for practice. *Ann Vasc Surg*. 2011;25:867–872.
10. Artibani W, Ficarra V, Challacombe BJ, et al. EAU policy on live surgery events. *Eur Urol*. 2014;66:87–97.
11. Min SK. Ethics of live surgery demonstration or broadcast: Is it beneficial to the patients? *Vasc Specialist Int*. 2020;36:4–6.
12. Legemate JD, Zanetti SP, Baard J, et al. Outcome from 5-year live surgical demonstrations in urinary stone treatment: Are outcomes compromised? *World J Urol*. 2017;35:1745–1756.
13. Ogaya-Pinies G, Abdul-Muhsin H, Palayapalayam-Ganapathi H, et al. Safety of live robotic surgery: Results from a single institution. *Eur Urol Focus*. 2019;5:693–697.
14. Ramírez-Backhaus M, Bertolo R, Mamber A, et al. Live surgery for laparoscopic radical prostatectomy—Does it worsen the outcomes? A single-center experience. *Urology*. 2019;123:133–139.
15. Duty B, Okhunov Z, Friedlander J, et al. Live surgical demonstrations: An old, but increasingly controversial practice. *Urology*. 2012;79:1185.e7–1185.e11.
16. Yaku H. [Trends in live demonstrations of cardiovascular surgery in Japan and the ideal form of live demonstration]. *Nihon Geka Gakkai Zasshi*. 2013;114:128–131.
17. Brunckhorst O, Challacombe B, Abboudi H, et al. Systematic review of live surgical demonstrations and their effectiveness on training. *Br J Surg*. 2014;101:1637–1643.
18. Sade RM; American Association for Thoracic Surgery Ethics Committee; Society of Thoracic Surgeons Standards and Ethics Committee. Broadcast of surgical procedures as a teaching instrument in cardiothoracic surgery. *Ann Thorac Surg*. 2008;86:357–361.
19. Misaki T, Takamoto S, Matsuda K, et al. *Guidelines to Live Presentation of Thoracic and Cardiovascular Surgery*. The Japanese Society for Cardiovascular Surgery; 2007. Available at: <http://>

- www.ascvts.org/images/pdf/guideline_cardvasc_surg_final3.pdf. Accessed December 28, 2020.
20. Royal College of Surgeons. *Live Surgery Broadcasts – Position Statement*. Royal College of Surgeons; 2017.
 21. Khan SA, Chang RT, Ahmed K, et al. Live surgical education: A perspective from the surgeons who perform it. *BJU Int*. 2014;114:151–158.
 22. Rohrich RJ, Stuzin JM, Ramanadham S, et al. The modern male rhytidectomy: Lessons learned. *Plast Reconstr Surg*. 2017;139:295–307.
 23. Baker DC, Stefani WA, Chiu ES. Reducing the incidence of hematoma requiring surgical evacuation following male rhytidectomy: A 30-year review of 985 cases. *Plast Reconstr Surg*. 2005;116:1973–1985; discussion 1986.
 24. Ogawa R. Keloid and hypertrophic scars are the result of chronic inflammation in the reticular dermis. *Int J Mol Sci*. 2017;18:606.
 25. Ogawa R, Akaishi S. Endothelial dysfunction may play a key role in keloid and hypertrophic scar pathogenesis – Keloids and hypertrophic scars may be vascular disorders. *Med Hypotheses*. 2016;96:51–60.