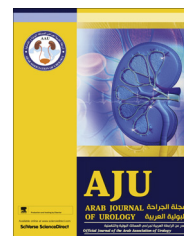




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TEACHER AND TRAINING IN UROLOGY MINI-REVIEW

Live surgery at conferences – Clinical benefits and ethical dilemmas



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ABBREVIATIONS

LSB, live surgical
broadcast;
EAU, European Asso-
ciation of Urology;
LSC, Live Surgery
Committee

Abstract Live surgical broadcasts (LSBs) are becoming increasingly popular in urological conferences. These activities can provide excellent training opportunities, as they allow the audience to view an operation conducted by world-renowned surgeons, and have the ability to interact with them in real time. However, several ethical considerations have been raised with this practice, which the participating surgeons and conference organisers must appreciate and address carefully. In this article we highlight the ethical considerations related to LSBs and advise on how these should be addressed. We also present the latest recommendations made by the European Association of Urology Live Surgery Committee and discuss alternatives to LSB.

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Introduction

From textbooks and small group teaching, to journals and conferences, surgical education takes place in several ways. Surgical conferences often include live surgical broadcasts (LSBs, also known as live surgical demonstrations, or a live surgical event), as the lead event, where an experienced surgeon demonstrates his technique to an audience of keen peers via a video link. LSBs in conferences are controversial, with some surgical disciplines

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banning them completely. Following the death of a patient undergoing live cardiovascular surgery in Japan [1], several medical associations, including the American Association for Thoracic Surgery, the American College of General Surgeons and the American College of Obstetrics and Gynecology, have revised their policies on LSBs and actively prohibit them [2]. The Royal College of Surgeons (UK) has made specific recommendations about LSBs during its conferences, with special emphasis on patient safety [3].

With the phenomenal advances made in audio-visual technologies and high-speed telecommunication systems, the additional risks posed by LSBs make the practice questionable and raise ethical concerns about the need for surgical demonstrations. The factors associated with LSBs that can affect a surgeon's performance include jet lag and fatigue, working in an unfamiliar environment or with unaccustomed equipment, with a team where non-technical skills like language barriers could interplay and affect clinical outcomes [4,5].

A study by the American Association of Genitourinary Surgeons showed that 70.9% of surgeons (93.2% had performed at least one live surgical demonstration) felt that it was morally ethical, but only 30.1% believed that demonstrations should be allowed to continue in their current form. The recommendation was for a formal review to be undertaken, which would lead to an explicit policy statement [6].

Urology is one of the specialities where LSBs are still being practised, albeit with new guidelines. With an increasing demand for live surgery events in urological conferences, Keith Parsons presented a new policy at the 28th Annual European Association of Urology (EAU) Congress on behalf of the EAU Live Surgery Committee (EAU-LSC) [7]:

1. The EAU endorses the use of live surgery as a technique for the dissemination of surgical knowledge, and does so provided that it is organised within a clearly defined regulatory framework.
2. The over-riding principle is that patient safety must take priority over all other considerations in the conduct of live surgery.
3. All EAU-endorsed live surgical events must be organised by a specifically identified local organising committee with a designated director.
4. This committee will report to, and act under the auspices of the EAU-LSC, who will authorise the event, ensure compliance with requirements, and establish and maintain a database of all EAU live surgical events.

In this article we give an overview of LSBs and explore the possible use of pre-recorded alternatives. We aim to offer useful suggestions on how urologists might continue to perform them safely and ethically.

The key principles of medical ethics [8]

Voluntas aegroti suprema lex: respect for autonomy

Autonomy recognises an individual's right to self-determination, and their ability to make informed decisions about personal matters. Due to the paternalistic nature of the doctor-patient relationship, a power gradient favouring the former will always exist. Patients might inherently feel obliged to consent to a procedure because their attending physician has suggested it, without fully realising its implications. They might even perceive that by agreeing to have a visiting surgeon perform at an international conference, the treatment they will receive will be of better quality.

In some countries, financially disadvantaged patients might agree to have their operation broadcast, as the obvious benefit in participating means that the cost of the surgery might be waived. Although they might have given 'informed consent', due to their financial circumstances they are left with no other options or indeed alternative access to surgery, so in summary they might be financially coerced into agreeing to the procedure [9].

Surgeons might also choose to partake in a LSB to further their reputation and undue risks might be subconsciously taken. Furthermore, performing innovative procedures that involve many complex steps in front of a selected peer group can certainly increase stress and increase the chances of a surgical catastrophe. Surgeons when performing a LSB have reported high levels of anxiety, which increased further when performing at a foreign institution or in an unfamiliar environment [5,6].

Salus aegroti suprema lex: beneficence

Beneficence refers to actions promoting the well being of others; as doctors we take actions that serve the best interests of patients. The doctrine of 'therapeutic misconception' states that patients assume that doctors always act in their interests, which might not always be true [10,11]. Some of the incentives to the surgeons for performing live surgery might include the advancement of their career and reputation, and access to sponsorship. Surgeons might operate on unfamiliar patients, using unfamiliar instruments and more likely in an unfamiliar environment [5].

Narrating a procedure during surgery is an additional distraction, akin to talking on a mobile phone whilst driving. The EAU recommends that a second member of the operating team interacts with the audience [12]. This might be a colleague who normally works for the operating surgeon and is familiar with the procedure

and the surgical technique involved. He or she could answer most of the general questions from the audience and direct the specific questions to the surgeon once the surgical procedure is over.

Primum non nocere: non-maleficence

To select appropriate cases for a LSB, patients might face additional delays in receiving treatment and on average wait ≈ 9 days longer for their operation to be performed during a live surgical event [3]. Although evidence is lacking, delays in patient care, especially as live surgical events are planned months in advance, could substantially affect the clinical outcomes and might result in disease progression. There are also additional intraoperative delays due to stand-by times to facilitate a smooth ‘performance’. This results in unnecessary increased anaesthetic times, posing additional risks of surgical-site infections.

The principle ‘first, do no harm’ remains the cornerstone of modern ethical practice, and acting in the knowledge that performing live surgery can put patients at increased risk compared to operating in a normal environment contravenes this principle, and questions the morality and ethics of performing LSBs.

Justice: fairness and equality

The distribution of scarce health resources, in deciding who receives an indicated treatment and who does not, is also a key ethical principle to consider. Patient selection must consider who would be the best candidate for the indicated procedure, and whether this would provide the best possible outcome. Selecting patients for complex novel surgical procedures just to impress an audience during LSB, when other equivalent safer procedures are available and are being practised routinely, adds to the ethical concerns of this educational method.

Respect and dignity

During a LSB there is also a risk that the patient’s dignity and confidentiality might be compromised. LSBs are usually performed in front of a large audience and patient’s medical history is shared with hundreds if not thousands of individuals. Although consent might have been obtained from the participating individual, it is important to inform the patient of the probable size of the audience that will be viewing their surgery, as it might influence their decision about participating in the event.

Morekar [11] describes instances of audience members in India being threatened and at risk of losing their jobs for objecting to unethical activities occurring during live surgical events. This negative attitude towards ‘whistle-blowing’ raises pertinent moral questions and brings into question whether anyone benefits from witnessing an adverse surgical event.

Truthfulness, honesty and informed consent

For a patient’s consent to be truly informed they should be made aware of the additional potential distractions posed during a LSB, of the likely increased operative/ anaesthetic times and the need for pauses for interaction with the audience. The EAU recommends that additional consent should be obtained to address these particular concerns. Patients should be given adequate time to consider these factors before consenting to a LSB. Furthermore, they should also have access to patient’s advocate to corroborate whether their interests are being safeguarded at all times.

The benefits of viewing pre-recorded surgery on video

Smith [13] strongly advocated the benefits of video recordings of surgical procedures as a viable alternative educational tool to LSBs. He suggested that pre-recorded videos demonstrating urological procedures could eliminate the ethical problems described above. By showing pre-recorded surgery to an audience it is possible to pause the video at key points during the procedure to allow the audience to ask questions of a panel of surgeons, and even host specific sessions dedicated to showing videos of complications, to see how they were managed expertly.

At the World Congress of Endourology in 2011, 66.4% of 256 respondents of a survey believed that videos would be a better learning tool than LSBs. Surgeons in the audience might wish to see a complication occur to see how it is dealt with [1]. In reality, at a conference there are likely to be two theatres running in parallel, so should a complication occur, the audio-visual feed would switch to the other room [10]. The advantage of seeing how a surgeon deals with a complication ‘live’ is no longer valid in this scenario, so a pre-recorded video would be more advantageous. Furthermore, pre-recorded videos would be available to surgeons worldwide, making such learning accessible to those unable to attend the conference.

Recommendations

The recommendations made by the EAU-LSC ensures that patient safety remains the priority. These include the presence of a patient’s advocate, who should be an independent urologist with no conflict of interest (i.e., not a member of the visiting team or the organising the event) in the operating theatre to ensure that the patient’s best interests are maintained. The advocate should be empowered to terminate the live broadcast, or the entire operation, if they feel that the patient’s best interests are not being addressed [7].

A consent form specific for LSBs must to be signed which addresses the risks posed by live surgery, such

as additional distractions and anxiety levels, as well as the presence of a camera crew and the broadcast of images to an auditorium of conference attendees. All complications and outcomes should be reported to the EAU-LSC using the standard pro forma, so that data are audited and patients followed up closely. One criticism of LSBs is that visiting teams of surgeons often are not aware of the outcomes of patients or any complications that might arise, and it would be advisable that the visiting team are informed of the short- and long-term results so that they could audit their activity [13].

The new guidelines suggest that the visiting team of surgeons must be able to ensure that their preferences and requirements are available in the operating room. An even better alternative would be to broadcast the surgery from their operating room, where they are most familiar with the equipment and staff, although this might preclude them from attending the conference. This alternative would suggest that such demonstrations need not be 'live' at all and could be pre-recorded, although the same arguments for the benefits of LSBs over pre-recorded footage are still applicable here [10].

To be able to continue performing LSBs as an effective educational tool in the 21st century it is important to minimise the risks identified, to allow for the most favourable and ethical outcome for the patient. To reduce anxiety and eliminate unfamiliarity with staff and equipment, and to allow local follow-up of patients, it is advisable to perform complex surgical procedures only at the surgeon's home institute. If surgeons must perform at a foreign institute, then they must bring their own operating team and equipment. Surgeons should only perform standard procedures with which they are familiar; unfamiliar procedures or 'novelty cases' using unfamiliar surgical devices are unsuitable to be performed in front of an audience, as they increase anxiety, but these might be suitable to be recorded for further learning [5,14].

Also, consent should be obtained by a third party, which would eliminate the risk of patient coercion. A monetary incentive benefiting the patient (outside of the UK) or the surgeon is a conflict of interest and should not be allowed. Sponsorship by equipment companies providing new, unfamiliar instruments is also unacceptable, and therefore only familiar equipment should be used.

Conclusions

The potential risks to patients associated with LSBs have been discussed extensively previously. However, the basic values in medical ethics might be compromised in an attempt to share knowledge and teach new skills. It is of paramount importance that medical professionals participating in live surgical events in urological conferences consider these ethical issues when selecting these

patients, and put their safety and welfare as the top priority.

LSBs remain an important tool for surgical education and should continue to be used to transfer skills, with concrete steps taken to reduce risks and ethical conflicts. Pre-recorded surgery videos form an excellent tool for education and should also be considered. The benefits over LSBs are comparable, with pre-recorded videos being the potentially safer option for patients, with fewer ethical concerns.

Conflict of interest

None.

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