



Legal and Ethical Recommendations for Video Recording in the Operating Room: A Review of Literature

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Abstract

Background: One of the legal and ethical issues related to the medical profession and health centers is patients' uncertainty regarding the type and quality of clinical care provided and the extent to which the health care providers comply with the necessary criteria in delivering health care. This study investigated the civil, criminal, and ethical aspects of using cameras in the operating room by describing a case that a legal complaint had filed regarding this issue and a review of the literature.

Methods: The study was a case report and narrative review. First, we introduce a case that found out that the patient admitted for brain tumor surgery did not operate on him and requested to review the videos of the operating room. Then, we investigated this issue in the literature.

Results: The purpose and outcome of using Closed-Circuit Television (CCTV) in the Operating Room (OR), may vary depending on the goals, needs, and expectations of different stakeholders. Some countries may use CCTV in the OR primarily for educational, research, or quality improvement purposes. In contrast, others may use CCTV in the OR mainly for security, surveillance, or legal purposes.

Conclusion: The suggestion of recording the events done in the operating room environment using a CCTV can be an acceptable solution and as a legal document and evidence.

Keywords: Ethics, Operating rooms, Surgery, Video recording

Introduction

Recording events during surgery in the operating room using digital cameras (closed circuit) is increasing around the world (1). Closed-Circuit Television (CCTV) can improve the quality of patient care during surgery, and analysis of surgical techniques and the performance of the surgeon and the surgical team is very effective (2). Among the other advantages of using fixed recording cameras in the operating room, we can mention the promotion of educational, research, accreditation, or legal documentation goals (3). Some patients have doubts about the standard of care provided during surgery, so to gain more trust, video, and audio recording systems in the operating room can be a solution (4). Therefore, it seems reasonable to suggest video recording in the operating room and the analysis of clinical care performed to improve patient safety and gain more patient confidence (5).

Those patients who did not receive the recorded events during their surgery may pursue legal procedures due to doubts about observing scientific criteria, correct techniques, and performing the surgery by another person (6). Despite the possibility of recording the events of the operating room, there are concerns about the privacy of patients and surgical team, the use of data, and the filing of legal claims against healthcare providers (7).

The use of CCTV in the Operating Room (OR) is a controversial and complex issue that involves various ethical, legal, and technical aspects (8). The social setting, or regulations and norms for the use of CCTV in the OR may differ depending on the country and the context. CCTV is not widely used in the OR in Iran, and there are no specific laws or regulations that address this issue (9). However, there are some general principles and guidelines that apply to the use of CCTV in the OR, such as respecting the privacy and dignity of patients and staff, obtaining informed consent from patients and staff, ensuring the security and confidentiality of the footage, and using the footage only for legitimate purposes such as education, research, or quality improvement (10). However, these principles and guidelines are not always followed or enforced in practice, and there may be cases of misuse or abuse of CCTV in the OR, such as recording or broadcasting without consent,

violating professional or ethical standards, or exposing sensitive or personal information. Review of literature shows that CCTV is also not widely used in the OR in America, and there are different laws and regulations that apply to the use of CCTV in the OR at the federal, state, and local levels (11,12). However, there are some common themes and challenges that emerge from the use of CCTV in the OR, such as balancing the benefits and risks of CCTV for patients and staff, obtaining informed consent from patients and staff, ensuring the security and confidentiality of the footage, and complying with the Health Insurance Portability and Accountability Act (HIPAA) and other legal frameworks (13). Moreover, there are some emerging trends and opportunities for the use of CCTV in the OR, such as enhancing patient safety, improving surgical outcomes, facilitating telemedicine, or supporting medical education (14).

Also, CCTV is also not widely used in the OR in England, and there are specific laws and regulations that govern the use of CCTV in the OR under the Data Protection Act 2018 and the General Data Protection Regulation (GDPR) (15). However, there are some key issues and considerations that arise from the use of CCTV in the OR, such as respecting the privacy and dignity of patients and staff, obtaining informed consent from patients and staff, ensuring the security and confidentiality of the footage, and using the footage only for lawful and legitimate purposes such as education, research, or quality improvement. Furthermore, there are some potential benefits and challenges for the use of CCTV in the OR, such as enhancing patient safety, improving surgical outcomes, facilitating telemedicine, or supporting medical education (16).

CCTV is also not widely used in the OR in France, and there are strict laws and regulations that regulate the use of CCTV in the OR under the Code of Public Health and the GDPR. However, there are some important issues and factors that influence the use of CCTV in the OR, such as respecting the privacy and dignity of patients and staff, obtaining informed consent from patients and staff, ensuring the security and confidentiality of the footage, and using the footage only for justified and legitimate purposes such as education, research, or quality improvement. Additionally, there are some possible

advantages and drawbacks for the use of CCTV in the OR, such as enhancing patient safety, improving surgical outcomes, facilitating telemedicine, or supporting medical education (17,18). CCTV is also not widely used in the OR in Germany, and there are complex laws and regulations that control the use of CCTV in the OR under the Federal Data Protection Act (BDSG) and the GDPR. However, there are some relevant issues and aspects that affect the use of CCTV in the OR, such as respecting the privacy and dignity of patients and staff, obtaining informed consent from patients and staff, ensuring the security and confidentiality of the footage, and using the footage only for lawful and legitimate purposes such as education, research, or quality improvement. Moreover, there are some potential benefits and challenges for the use of CCTV in the OR, such as enhancing patient safety, improving surgical outcomes, facilitating telemedicine, or supporting medical education (17,19,20).

This situation is a legal-ethical dilemma in medical professionals. On one hand, it is the patient's right to know about the type of care services, and on the other hand, the issue of privacy violation can be against the principles of ethics and rules (3). In this study, we intend to discuss the legal and ethical aspects of the CCTV by introducing a legal case.

Materials and Methods

This study has used two sections of case report and narrative review of literature. This method of studies is used when we encounter a challenging case and encourages us to review the literature (21-23).

Case presentation

A 52-year-old client came to our solicitor's office to file a complaint against hospital staff. According to her statements, six months ago, she had gone to a hospital in Tehran, Iran to perform a brain tumor resection after choosing a famous surgeon. The diagnosis of the type of tumor and the need for surgery (resection) was previously suggested by another surgeon. The patient was in stable condition and alert for surgery by the surgeon of her choice. But immediately after the surgery, the patient's family noticed that the surgeon was attending a specialized congress at the same time and giving a speech in a

faraway city. Therefore, they were hesitant whether the surgery was performed by the examining doctor supposed to do so. In other words, they felt that the surgery was probably performed by another person. The patient complained about the breach of the agreements made with the mentioned doctor and demands legal damages. The patient asked us if it is possible to use the cameras in the operating room to identify the doctor's identity. This was a question that we had to do a literature review to solve. After legal advice was given to the patient, the doctor was contacted after receiving a power of attorney from here. Finally believing that the outcome of the operation was satisfactory, he reached a compromise in a meeting between the patient, the doctor and the patient advocacy team.

Review of literature

We followed a narrative review methodology to summarize and synthesize the literature on legal and ethical aspects regarding video recording in the OR. We searched for relevant articles in PubMed, Scopus, Web of Science, and Google Scholar using the keywords "video recording", "operating room", "surgery", "legal", and "ethical". The search strategy was "((“Video Recording” OR Recording, Video OR Video recording OR “Audiovisual Recording” OR “closed-circuit television” OR CCTV AND (Room, Operating OR “Operating Room” OR Surgery)) AND (Legal OR Law OR Liability)) AND (Ethicist OR Ethical OR Bioethicist)".

We included articles that were published in English between 2010 and 2023, and that discussed the use of video recording in the OR from legal or ethical perspectives. We excluded articles that were not related to our topic, such as those that focused on other types of recording or other settings. The evaluation criteria of articles was based on a checklist that was designed for each article. This checklist included the title of the article, a summary of the methodology, and the results. The final column said yes/no. which indicates whether or not this article is an appropriate answer to the research question. After the introduction of each article, group members provided comments. Articles written with a "yes" vote were selected for the final report. The expert panel found that some articles were not qualified enough to answer the research question

(24). We synthesized the articles using a thematic analysis approach, identifying and comparing the main themes, issues, and recommendations that emerged from the literature.

Results

We identified 27 articles that met our inclusion criteria, of which 15 were empirical studies and 11 were reviews or commentaries. The articles covered various aspects of video recording in the OR, such as the purpose, outcome, consent, security, confidentiality, ownership, access, use, and feedback of video recording. The articles also addressed various legal and ethical issues that arise from video recording in the OR, such as the protection of personal data and privacy rights, the compliance with different laws and regulations, the respect for the dignity and autonomy of patients and staff, and the balance between the benefits and risks of video recording for different purposes and stakeholders (25). The main themes that emerged from our synthesis were:

A) The benefits of video recording in the OR:

Video recording in the OR can have positive impacts on patient safety, surgical outcomes, medical education, research, quality improvement, telemedicine, or legal evidence. Video recording can enhance the performance, feedback, learning, or collaboration of surgeons and medical students. Video recording can also provide valuable data or information for research, quality improvement, or legal purposes (26-28).

B) The challenges of video recording in the OR:

Video recording in the OR can also pose various challenges for patients, surgeons, and medical education. Video recording can expose sensitive or personal information, violate professional or ethical standards, or create conflicts of interest or liability. Video recording can also affect the behavior, attitude, or confidence of surgeons and medical students (29). Video recording can also require additional resources, skills, or training to ensure its proper installation, operation, or use. The recommendations for video recording in the OR: Video recording in the OR requires careful consideration and regulation

from legal and ethical perspectives. There is a need for developing additional guidelines and protocols that address the specific challenges and opportunities of video recording in the OR in different contexts and situations (30).

C) Ethical, legal and regulations of video recording in the OR:

Moreover, there is a need for conducting more empirical research and analysis that evaluate the impact and effectiveness of video recording in the OR on various outcomes and indicators. The legal issues of video recording in the OR mainly concern the protection of personal data and privacy rights of patients and staff, as well as the compliance with different laws and regulations that apply to the installation and operation of video recording systems in different countries. For example, some countries, such as France and Germany, have strict laws and regulations that require prior authorization, informed consent, and data security for video recording in the OR, while others, such as Iran and America, have more lenient or ambiguous laws and regulations that allow more discretion or flexibility for video recording in the OR (1,2,5,31,32). Moreover, some countries, such as England and America, have specific laws and regulations that govern the use of video recording in the OR under the Data Protection Act 2018 and the General Data Protection Regulation (GDPR) or the Health Insurance Portability and Accountability Act (HIPAA), respectively (5).

The ethical issues of video recording in the OR mainly involve the respect for the dignity and autonomy of patients and staff, as well as the balance between the benefits and risks of video recording for different purposes and stakeholders. For example, some purposes of video recording in the OR, such as education, research, or quality improvement, may enhance patient safety, surgical outcomes, or medical knowledge, while others, such as security, surveillance, or legal evidence, may expose sensitive or personal information, violate professional or ethical standards, or create conflicts of interest or liability (1). Furthermore, some stakeholders of video recording in the OR, such as patients, surgeons, or medical students, may have different expectations, preferences, or concerns regarding the use of video

recording in the OR, and may require clear and consistent communication, consent, and feedback mechanisms to ensure their rights and interests are protected and respected (5).

Discussion

Like the case introduced in this report, many patients are unaware of the quality of the clinical intervention that are performed on their bodies during surgical procedures. The main complaint of patients is that they are not informed by documentation regarding receiving care (33). It is the patient's right to know by whom the care was given to her and how much it was following the latest scientific criteria. Also, the details of the quality of care provided to her was in her interests and accordance with professional and legal agreements and requirement (6). The laws and social policies in different countries are different in this regard. The diversity of culture, law, and ethical codes of different countries regarding the use of CCTV in the OR may be explained by several factors, such as: The historical and social context of each country, which may shape the values, norms, and traditions of its people and institutions. For example, some countries may have a strong respect for individual rights and privacy, while others may have a more collectivist or authoritarian orientation (1). The legal and regulatory framework of each country may define the rules, standards, and procedures for the installation and operation of CCTV in the OR. For instance, some countries may have strict laws and regulations that protect the personal data and dignity of patients and staff, while others may have more lenient or ambiguous laws and regulations that allow more discretion or flexibility (34,35). The ethical and professional codes of conduct of each country might guide the behavior and decision-making of medical practitioners and organizations. For example, some countries may have clear and consistent codes of conduct that specify the principles, values, and responsibilities of using CCTV in the OR, while others may have vague or conflicting codes of conduct that leave room for interpretation or variation (36). The technological

and organizational capabilities of each country may determine the availability, quality, and functionality of CCTV in the OR. For instance, some countries may have advanced and reliable CCTV systems that enable high-definition recording, transmission, and storage of footage, while others may have outdated or faulty CCTV systems that limit or impair the use of footage (37). The purpose and outcome of using CCTV in the OR, which may vary depending on the goals, needs, and expectations of different stakeholders. For example, some countries may use CCTV in the OR primarily for educational, research, or quality improvement purposes, while others may use CCTV in the OR mainly for security, surveillance, or legal purposes (34). However, this issue should be considered from an individual point of view. As a member of society, the patient has human dignity, and her dignity should not be damaged by other factors (38,39). To maintain respect for the patient and observe the principle of autonomy, any medical intervention such as surgery or examination that is performed on the patient's body must be done with the patient's true informed consent (40). From the legal point of view, the relationship between the patient and the surgeon is concluded in the form of a contract, which may be written or verbal (oral) (7). One of the main principles of the contract is the personal and professional characteristics of the doctor. The internal consent and intention of both parties is the necessary principle for contracting (2,3). The lack of informed consent of each of the parties tends to the nullity of this contract (3). In this contract, each party accepts the obligations. The patient's commitment can include paying the fee and following the care instructions, and the surgeon's commitment can include being in the operating room and performing surgical techniques following current scientific guidelines (5). Based on our legal reasoning, the surgeon in all surgeries does not commit to the desired result and simply spends all his efforts to achieve the best result (36).

The non-fulfillment of obligations by one party will damage the rights of the other party to the contract. We believe that from the point of view

of medical civil responsibility, if, according to the report given in this research, the surgery was performed by someone other than the surgeon chosen by the patient, the mentioned surgeon has left his obligations. Then, the patient can start the legal process and claim the damages that have been caused to her as a result of breaking this contract. An important point in this and similar cases is to demand legal and contractual damages from the doctor of the contracting party for breach of contractual and legal obligations and legal damages from the doctor present in the operating theatre. This operation was performed on the patient's body without her consent and agreement, and was demanded due to the lack of her choice and permission. From the point of view of criminal law, performing such behavior by a surgeon or a person replacing a surgeon is a combination of at least two types of crimes. On the one hand, the physical and mental injuries they caused to the patient without her consent is a crime, and on the other hand, performing a fraudulent maneuver, they received a sum of money from the patient which is another crime (deception), so both the surgeon and the person who replaces the surgeon deserves to be

punished (3).

Whether the recorded data related to each patient should be delivered to the patient herself or be remained as an archive with the medical records unit is a problem that can be solved. We believe that the direct limitation of the patient's access to the recorded data is not a violation of the patient's rights. It can greatly reduce the filing of false claims. On the other hand, access to information through judicial authorities will also be a way to reduce false claims and rely on valid and inviolable reasons and documents and protect the patient's rights.

Conclusion

Subject to justification and obtaining consent, using a CCTV camera to record the events in the operating room can be a suitable solution to pay more attention to the patient's rights during surgery. We believe that the ethico-legal issues of using cameras in the operating room can be solved and can protect the rights of the patient and care providers.

Conflict of Interest

The authors declare that they have no conflict of interest.

References

1. Gabrielli M, Valera L, Barrientos M. Audio and panoramic video recording in the operating room: legal and ethical perspectives. *J Med Ethics* 2021;47(12):798-802.
2. Dalen A, Legemaate J, Schlack W, Legemate D, Schijven M. Legal perspectives on black box recording devices in the operating environment. *Br J Surg* 2019;106(11):1433-41.
3. van de Graaf FW, Eryigit Ö, Lange JF. Current perspectives on video and audio recording inside the surgical operating room: results of a cross-disciplinary survey. *Updates Surg* 2021;73:2001-7.
4. Filicori F, Addison P. Intellectual property and data ownership in the age of video recording in the operating room. *Surg Endosc* 2022;36(6):3772-4.
5. Prigoff JG, Sherwin M, Divino CM. Ethical recommendations for video recording in the operating room. *Ann Surg* 2016;264(1):34-5.
6. Gordon L, Reed C, Sorensen JL, Schulthess P, Strandbygaard J, Mcloone M, et al. Perceptions of safety culture and recording in the operating room: understanding barriers to video data capture. *Surg Endosc* 2022 Jun;36(6):3789-97.
7. Gallant JN, Brelsford K, Sharma S, Grantcharov T, Langerman A. Patient perceptions of audio and video recording in the operating room. *Ann Surg* 2022;276(6):e1057-e63.

8. Kurdi HA. Review of closed circuit television (cctv) techniques for vehicles traffic management. *Int J Comput Sci Info Technol* 2014;6(2):199-206.
9. Soltanzadeh L, Taheri A, Rabiee M. Role of information technology in implementation of telemedicine system. *Int J Res Educ Methodol* 2014;6(2):824-9.
10. Varpula J, Välimäki M, Lantta T, Berg J, Soininen P, Lahti M. Safety hazards in patient seclusion events in psychiatric care: a video observation study. *J Psychiatr Ment Health Nurs* 2022;29(2):359-73.
11. Jung Y. A World We've Never Experienced Before: Installation of Closed-Circuit Televisions in Operating Rooms. *J Korean Med Sci* 2022;37(16):e132.
12. Lauer T, Meehan AJ. Closed circuit television systems on university campuses: unexamined implications for the expectation of privacy and academic freedom. *Int J Law Public Administr* 2019;2:1-9.
13. Ballard E, Gallegos DF, Kluchurosky L, Scifers JR. Telehealth. *Athlet Training Sports Health Care* 2020;12(4):150-3.
14. Shawwa L. The use of telemedicine in medical education and patient care. *Cureus* 2023;15(4).
15. Kevin N, Date FA. Closed circuit television (CCTV) policy. *Policy* 2020.
16. Zhang J, Lu Q, Shi L. The influence of telemedicine on capacity development in public primary hospitals in China: a scoping review. *Clin eHealth* 2022.
17. Baoyan Kvl. Closed circuit television (cctv): a tool in crime prevention and detection [thesis]. University of the Cordilleras; 2023. 81 p.
18. Foong TW, Ramanathan K, Chan KKM, MacLaren G. Extracorporeal membrane oxygenation during adult noncardiac surgery and perioperative emergencies: a narrative review. *J Cardiothorac Vasc Anesth* 2021;35(1):281-97.
19. Παπαδόπουλος Α. The implementation of the General Data Protection Regulation (GDPR) in the EU and Greece: procedures, risks, challenges and impacts in the context of good governance. [thesis]. 2020. Available from: <http://dspace.lib.uom.gr/handle/2159/24326>
20. Tóth L. The evolution of public surveillance systems in Europe. *Magyar Rendészet* 2023;23(1):191-204.
21. Farzam R, Abdi M, Farhangi M, Zibaei M, Torkmandi H. Educational view of pathological fracture of femur due to hydatid cysts: a case report and review of literature. *J Adv Med Biomed Res* 2022 Jul 10;30(141):374-8.
22. Abdi M, Lotfolahi Z, Zareie M, Saeidi M, Amini K, Torkmandi H, et al. ARDS, Diffuse alveolar hemorrhage and pericardial effusion due to anabolic-androgenic steroids consumption: legal and ethical policy in medical education. *Tanaffos* 2022;21(2):239.
23. Zeraati MR, Torkmandi H, Abdi M, Jamshidi MR, Safaie A. Malignant hyperthermia, cardiac dysrhythmia and hypertension crisis in sublingual misoprostol: educational policy for adverse drug reaction organization. *J Obstetr Gynecol Cancer Res* 2023;8(1):86-94.
24. Khayyati Motlagh Bonab S, Mohammadi A, Fazlizade S, Hashemzadeh E, Golbaf R, Torkmandi H, et al. How to give feedback on professionalism in clinical education: a narrative review. *Strides Dev Med Educ* 2023;20(1):29-37.
25. Boylan M, Teays W. *Ethics in the AI, technology, and information age*. 1st ed. Rowman & Littlefield Publishers; 2022. 352 p.
26. Kim DK. Installation of CCTVs in operating rooms, how should we prepare? *J Korean Med Sci* 2022;37(16).
27. Pirker J, Dengel A. The potential of 360 virtual reality videos and real VR for education—a literature review. *IEEE Comput Graph Appl* 2021;41(4):76-89.
28. McKnight RR, Pean CA, Buck JS, Hwang JS, Hsu JR, Pierrie SN. Virtual reality and augmented reality—translating surgical training into surgical technique. *Curr Rev Musculoskelet Med* 2020;13:663-74.
29. Croghan SM, Phillips C, Howson W. The operating theatre as a classroom: a literature review of medical student learning in the theatre environment. *Int J Med Educ* 2019;10:75-87.

30. Hall D, Steel A, Heij R, Eley A, Young P. Videolaryngoscopy increases 'mouth-to-mouth' distance compared with direct laryngoscopy. *Anaesthesia* 2020;75(6):822-3.
31. Bridges KH, McSwain JR, Wilson PR. To infinity and beyond: the past, present, and future of tele-anesthesia. *Anesth Analg* 2020;130(2):276-84.
32. Zare ST, Sadeghi M, Rahni AM. A comparative study of risk countering theory in Iranian medical law and British law. *Medicine* 2020;5(3):94-101.
33. Doorn N, Koops BJ, Romijn H, Swierstra T, van den Hoven J. Responsible innovation 1: innovative solutions for global issues. 1st ed. Springer; 2014. 416 p.
34. Quach WT, Vittetoe KL, Langerman A. Ethical and legal considerations for recording in the operating room: a systematic review. *J Surg Res* 2023;288:118-33.
35. Silberthau KR, Chao TN, Newman JG. Innovating surgical education using video in the otolaryngology operating room. *JAMA Otolaryngol Head Neck Surg* 2020;146(4):321-2.
36. Silas MR, Grassia P, Langerman A. Video recording of the operating room—is anonymity possible? *J Surg Res* 2015;197(2):272-6.
37. 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(10):771.
38. Torkmandi H, Torabi K, Abdi M, Homayoon S. Ethical and legal aspects of breast cancer prevention in individuals living with mental disabilities: legally incapacitated. *J Rehabil Sci Res* 2022;9(1):53-4.
39. Mozafari M, Abdi M, Safaei A, Torkmandi H. Educational view in legal and ethical responsibility of physicians in erb duchenne palsy: a case report. *Int J Med Toxicol Forensic Med* 2022;13(1):37665.
40. Blaauw CB, van den Dobbelen JJ, Hubben JH. Legal aspects of video registration during operations--the digital operating room assistant: opportunity or threat? *Ned Tijdschr Geneesk* 2011;155(32):A3487-A.