

## Video analysis for the evaluation of vaginal births: a comment

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Currently in *Swiss Medical Weekly*, Kimmich et al. report an observational study conducted at the Division of Obstetrics at the University Hospital Zurich in which the authors recorded 100 birth processes using video technology [1]. The video sequences were then reviewed jointly by an experienced senior obstetric physician and the participating obstetric team for deviations from the internal standard of the clinic. It should be emphasised that the Division of Obstetrics, headed by Professor Zimmermann, is distinguished by its high quality and that the clinic standard is based on available evidence. Correct obstetric management in the second stage of the births was discussed and elaborated on the basis of the video documentation. The purpose of the study was to review the feasibility and potential benefits of this tool for educational purposes. It merits special attention because the authors had the courage to introduce video documentation in an extremely sensitive area, one where the patient and family members are actively engaged in the treatment process. Obstetrics is an area that is largely determined by autonomy and the desire for an individual birth experience on the part of the expectant parents and by personal experience on the part of the supervising medical team. The passing on of the obstetric experience to the junior staff at times proves to be difficult because, in our experience, training at the delivery table is much less accepted by the patient and her relatives than is the case with, for example, operations. Moreover, birth processes are disadvantaged compared with, for example, endoscopic procedures, owing to the lack of digital recordings. Video recordings therefore offer the opportunity to discuss the birth process based on authentic documentation and this, in the absence of the patient and her relatives. Thus, the study is in this way unique, even if video documentation as such has already been accepted in many other areas of medicine. The increasing technical quality and easy handling of today's video equipment creates the conditions for its application here. Smartphones contain such high-resolution cameras that they can make images whose clarity of detail would 20 years ago have required a great deal of equipment. On the one hand, increasing technical progress provides numerous new applications in case reviews, training, scientific evaluation, process optimization, patient education, as well as treatment documentation. On the other hand, the constant availability of handheld devices quickly leads to uncritical use. Video recordings har-

bour a series of unresolved potential conflicts and challenges, often complicated by an unclear legal situation.

In this context, critical consideration must be given in particular to personal rights. Does a video recording, even if it was agreed to in advance, interfere with the patient's autonomy? The burden of proof that medical treatment was carried out correctly according to all medical-ethical criteria, so that the principle of self-determination, damage avoidance, patient welfare, and justice is adhered to, lies with the practitioner, not with the patient [2]. In the case of obstetrics, personal rights apply to the patient, her relatives, and the (minor) child, but also to the participating clinical staff. The use of video documentation must be agreed in advance and requires intensive education and the permission of all persons concerned. Moreover, under labour law, video documentation can be interpreted as a monitoring tool. In Germany, the introduction and use of technical equipment intended to monitor the behaviour or performance of employees must be agreed with the employee representative (§87 Abs 1 no. 6 BetrVG). These legal hurdles will continue to restrict the use of video recordings in future.

Overcoming conservative training possibilities and supplementing them with digital innovations can at least theoretically be used and even abused by patients for medicolegal claims on grounds of the resulting existence of complete, patient-oriented video documentation. Should a doctor have assessed the situation differently? In retrospective and with knowledge of the starting point, it is easy to judge medical treatment. Alone the existence of video documentation opens the door to compensation claims in the definition of medical error similar to the potential of the introduction of video evidence in professional football. The consequences in medicine, however, have a completely different importance. Especially in obstetrics, the verifiability of an objectifiable standardised approach is often affected by a high uncertainty factor compared with other areas of specialisation owing to the patient collective (mother and child), the often individual approach, and the dynamic processes. As a result, the fear of compensation claims diminishes the acceptance of video documentation among physicians. Similar phenomena have also been observed with the introduction of the so-called morbidity and mortality conference (M & M) [3]. M & Ms have a long tradition of continuing education for physicians, especial-

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ly in English-speaking countries. In Germany and Switzerland, this instrument for quality management has recently been “rediscovered”. The approach requires of practitioners commitment to an open error culture. Just this appears to be in need of upgrading in German-speaking countries [4]. Here too then, the present work by Kimmich et al. deserves the utmost respect; it shows that the obstetric department of the University Hospital Zurich is a pioneer in the open handling of potential sources of error and risk management in its field.

In endoscopic surgery, video recordings have a particularly long and relevant tradition. There is a global need and, now, a not inconsiderable market dealing with video recordings of individual operations or individual steps in operations and making them available to the general public for didactic and educational purposes. The quality of an operation seems to be measurable and is also used, for example, for certification purposes or as an admission requirement for surgically based studies. In addition, video recordings and live video transmissions are now the soul of surgeons’ conferences, but they are repeatedly put to the test and contrasted with potential equivalent alternatives. This is above all because, even in such a context, compliance with medical-ethical principles cannot be guaranteed to the extent required when using the latest medical technology developments in direct exchange with the audience. Video recordings, digital techniques and video-based interactions have, however, undisputed benefits in endoscopic surgical training. In the Kiel School of Gynaecological Endoscopy, video recordings are being used with great success as a fixed component of a multilevel training concept in surgical training courses. For example, endoscopic suture techniques are thus structured and systematically taught. Surgical processes and procedures are learned from the model and video-documented. Video recordings can then be analysed and discussed with professional guidance. This approach has been shown to significantly enhance the individual learning curve [5]. In the next step, what has been learned is applied to real conditions. These conventional training methods are already being developed further. New advances in medical technology and digital innovations are increasingly providing virtual “exercise rooms”. This development is important because it counteracts demographic change and foreseeable resource constraints in the healthcare system, while ensuring professional training for physicians [6, 7]. Additionally, digital education offers the opportunity for global networking, international exchange and the alignment of medical practice among physicians worldwide. It will therefore form an indispensable pillar in future because of its high quality and demonstrable benefits for the training of doctors. It is to be hoped that on the basis of work such as that of Kimmich and her colleagues sustainable methods can be developed in future so that they can be similarly implemented in the training curricula of obstetrics.

In conclusion: physicians of all clinical disciplines will inevitably have to deal with video documentation in future in order to meet the demands of patient associations, politicians and insurance companies for a high degree of transparency in medical treatment. Even relatives themselves are today sometimes filming medical treatment with smart phones, in some circumstances unasked and unnoticed by the attending physician. In obstetrics, we see that such private videos of child-birth are being shared and exchanged on social networks. It may be precisely this natural use of modern media that is responsible for the increasing willingness and openness of patients to video documentation, as the present work by Kimmich shows. Nevertheless, there is some legal uncertainty regarding the use of video documentation. The medical-ethical aspects must also be discussed. For the FIFA World Cup 2018, FIFA has accepted video evidence as an option in its rules. It is to be hoped that the use of video recording and digital possibilities in medicine will not be limited by medicolegal issues. The great strength of video technology lies in providing information about medical knowledge and practice. For the benefit of the patient, new technical achievements should be implemented in concepts of continuing medical education.

#### Disclosure statement

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#### References

- 1 Kimmich N, Zimmermann R, Kreft M. Video analysis for the evaluation of vaginal births: a prospective observational study. *Swiss Med Wkly.* 2018;148:w14634. doi: <http://dx.doi.org/10.4414/smw.2018.14634>.
- 2 Alkatout I. Kommunikative und ethische Aspekte der Arzt-Patienten-Beziehung in der Extremsituation [Communicative and ethical aspects of physician-patient relationship in extreme situations]. *Wien Med Wochenschr.* 2015;165(23-24):491–8. Article in German. doi: <http://dx.doi.org/10.1007/s10354-015-0385-2>. PubMed.
- 3 Orlander JD, Barber TW, Fincke BG. The morbidity and mortality conference: the delicate nature of learning from error. *Acad Med.* 2002;77(10):1001–6. doi: <http://dx.doi.org/10.1097/00001888-200210000-00011>. PubMed.
- 4 Bundesärztekammer. Methodischer Leitfaden. Morbiditäts- und Mortalitätskonferenzen (M & MK). 2016 p. 1. Auflage.
- 5 Spille J, Wengers A, von Hehn U, Maass N, Pecks U, Mettler L, et al. 2D Versus 3D in Laparoscopic Surgery by Beginners and Experts: A Randomized Controlled Trial on a Pelvitrainer in Objectively Graded Surgical Steps. *J Surg Educ.* 2017;74(5):867–77. doi: <http://dx.doi.org/10.1016/j.jsurg.2017.01.011>. PubMed.
- 6 Ellessawy M, Wewer A, Guenther V, Heilmann T, Eckmann-Scholz C, Schem C, et al. Validation of psychomotor tasks by Symbionix LAP Mentor simulator and identifying the target group. *Minim Invasive Ther Allied Technol.* 2017;26(5):262–8. doi: <http://dx.doi.org/10.1080/13645706.2017.1303516>. PubMed.
- 7 Ellessawy M, Skrzipezyk M, Eckmann-Scholz C, Maass N, Mettler L, Guenther V, et al. Integration and Validation of Hysteroscopy Simulation in the Surgical Training Curriculum. *J Surg Educ.* 2017;74(1):84–90. doi: <http://dx.doi.org/10.1016/j.jsurg.2016.06.007>. PubMed.