Video analysis for the evaluation of vaginal births

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Retrospective evaluation of the birth process is the responsibility of each obstetric team in the event of complications, for teaching purposes and for improving their own skills. Nonetheless, the delivery itself is an intimate, personal and private procedure. However, patients increasingly demand a high and flawless quality of service [1]. Modern small surveillance devices can therefore help by allowing video surveillance without use of obtrusive devices that may interfere with the patient's sense of privacy. The will to record events for audit, teaching, and quality assurance and improvement reflects the current increasing demand for professional perfectionism, despite the intimacy of the delivery itself, in my opinion.

In the outstanding manuscript of Kimmich et al., published in *Swiss Medical Weekly* [2], the authors were able to present for the first time to my knowledge an efficient video recording method for the purposes of audit, teaching, and quality assurance and improvement of a normal vaginal delivery. In their prospective observational study they were able to record on video 100 vaginal births in vertex presentation, using a small camera (GoPro® Hero 4 Black, GoPro Incorporation, USA). Special attention was paid to evidence-based standardised parameters, namely, aseptic technique, techniques of episiotomy and of delivering the baby, and communication between the delivering woman and the staff. Analysis by a senior consultant revealed errors involving aseptic technique in 7 to 13% of the cases, improper perineal support in 7%, lack of visualisation of various birthing techniques in 5 to 22%, errors of episiotomy technique in 1 to 28%, poor communication in 11%, and errors in vaginal operative delivery technique in 21 of 39%.

This project itself presented a tremendous challenge to the authors. The biggest challenge was the will to expose mistakes and violations of protocols in order to learn from them. This has been the subject of a series of publications and debates [3]. Not only did the authors have to deal with the disapproval of patients, but they also had to deal with the scepticism, fear and resistance of their own personnel. Concern about the intrusive nature of video recording and personal concern has been described in other similar studies [4]. Given the intimate nature of the recorded material, the successful completion of this project is a big step in its own right.

With increasing medicolegal liability, a blame culture, patients' expectations and obstetricians' concern about their own reputation, spontaneous reporting of medical errors

and violations is generally not accepted. Fear and lack of belief that reporting errors will lead to improvement results in hiding adverse effects and errors. In addition, medical personnel believe that "errors and mishaps are caused by carelessness for which the responsible individual should be punished" [3]. Irrationally trying to avoid risks in order to escape reporting medical errors results in an increase in the rate of unnecessary caesarean deliveries and loss of obstetric skills [5]. On the contrary, reporting errors may lead to system improvements and therefore decreased medicolegal liabilities [6]. Unlike the current belief, external transparency fosters trust, collaboration, and a higher level of credibility and quality improvement between patients and their medical staff [1]. In the light of these facts, this project is a breakthrough in a very intimate and sensitive medical topic in a field shrouded with increasing medicolegal allegations [1].

With use of this method in addition to others, normal vaginal delivery can now be objectively evaluated and risks can be outweighed. As an example, a series of studies showed that digital examination is subjective and has a high degree of error. This fact was not proven until using a more objective imaging method, namely, intrapartal ultrasound, was used [7]. Thus, this manuscript may stimulate fundamental reconsideration of the management of normal vaginal delivery. As an example, quality control in obstetrics nowadays retrospectively evaluates the perinatal outcome [1, 8]. With video recording in the labour ward and other more objective methods, certain parameters may offer a better explanation for these perinatal outcomes.

As reported by the authors, video recording has been introduced in various fields of medicine for various purposes. Regarding vaginal birth, video recording was introduced only in birth simulation training and teaching programmes [8]. The manuscript of Kimmich et al. is therefore the first of its kind to describe to record normal vaginal deliveries using a standardized evidence-based program to detect and learn from mistakes [11]. In the years to come, it would be very interesting to study the effect of this surveillance method on the rate of complications, such as high degree perineal tears, hands off versus hands on methods.

The article of Kimmich et al. also reported a 21% rate of improper positioning of the cup during vacuum extraction, inappropriate direction of pulling in 23% and handling of the cup in 39% of cases. Similar results were presented in other studies [9]. Improper positioning and handling of the cup is also associated with cup detachment, failure of

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vaginal operative delivery and maternofetal complications [10]. Surveillance was proven to have a positive effect on vaginal operative deliveries. In another similar study, a schematic record of the cup placement on the fetal head was completed after each vacuum extraction. After implementation of this surveillance method and following a structured evidence-based training programme for vacuum extraction, fewer tractions per vaginal operative delivery, and fewer perineal injuries and episiotomies were recorded, with the same number of vacuum extractions in similar intrapartal situations [11]. It would therefore also be very interesting to find out whether video recording has the same effect on perinatal outcomes after vaginal operative deliveries. The effect of incorporating such video recordings into teaching programmes for future obstetricians and medical students should also be evaluated.

Since this study was monocentric, another, multicentre trial should be started. The project should focus on the perinatal effect of using this surveillance method. The behaviour of obstetricians with and without surveillance should be studied and analysed at a multicentre level. The authors reported problems during the introduction of video recording in the labour ward. It would be interesting to express the problems by use of standardised questionnaires for patients and medical personnel in different centres. As mentioned above, as a result of the emergence of this method, a heated and endless discussion will start. Using a multicentre approach to validate the effectiveness of this method may support the results of this magnificent effort.

In conclusion, this article is a breakthrough in the surveillance of normal vaginal deliveries. It has broken the taboo of the personal privacy, as well as uncontrolled practice, of vaginal delivery. Given its controversies, it will open up a wide and heated debate about current practices. Future studies may validate video recording in the labour ward and routinise it in obstetric practice. Obstetric procedures may be objectively evaluated, standardised and improved by this and other surveillance methods, instead by blind retrospective analysis. It may also offer a good chance to revise breech and twin delivery training to reduce unnecessary caesarean deliveries. Although many obstetricians may think that surveillance could endanger their careers, it might, on the contrary, improve the perinatal outcome and therefore save their reputations, reduce medicolegal allegations and improve their practice. It is therefore worth starting a comprehensive debate about this observation technique in our intimate labour wards.

Disclosure statement

No financial support and no other potential conflict of interest relevant to this article was reported.

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