Protecting fertility clinics against sperm-related fraud: a call to action

Kristy Cho¹ · Jacob Ruiter² · Michael H. Dahan²

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In the treatment of infertility, patients commonly undergo artificial intrauterine insemination (IUI) or in vitro fertilization (IVF). As these procedures involve the manipulation of gametes outside of the body, cases of unintended parentage have been reported. These cases have been published in non-medical and medical journals [1, 2], and the fear of gametes mix-up is a serious concern. These cases can be complicated by emotional harm, legal actions, and custody battles [1]. Although most often reported as the consequences of medical error, there may be other scenarios leading to genetic parentage of different individuals than those seeking care. In hopes of promoting procedural improvements, this article aims to point out possible scenarios which have not been previously reported, but through which fertility clinics are open to malpractice litigation.

One scenario involves fraud perpetrated by three individuals, a couple seeking care and a sperm donor unbeknownst to the clinic. Consider a situation in which sperm from another third-party individual is brought in by the male partner but claimed as his own. This sample could be brought as a home-produced specimen or into a collection room and placed into the collection vial. The intended female partner is then inseminated, or IVF occurs, and a child is conceived. At a later date, DNA testing shows non-paternity of the male partner. The couple then claims that the fertility clinic mixed up the sperm. Unless no other procedure involving sperm (such as IUI, IVF, and

even semen analysis) was performed on that day, the fertility clinic would encounter difficulty mounting a defense. Such a lawsuit could lead to a very substantial award payment, likely topping 10 to 20 million dollars, in America.

A second scenario exists when a couple with male factor infertility is undergoing care with insemination and the female patient has a concurrent extramarital affair. It is more likely that the normal sperm of the male in the affair will fertilize the women than the sperm of her husband with poor parameters. It is possible that the husband will later have the genetics of the child tested and this could also result in a lawsuit for mixing up of sperm. This is a realistic scenario without fraudulent intent on the part of the male, all be it non-disclosure on the part of the female. The incidence of non-paternity was reportedly 30% in US and European populations when paternity testing was requested [3]. However, the rates of non-paternity cited in publications are variable depending on the region, demographics, and the indication for testing [3, 4]. In a UK study of genetic markers for multiple sclerosis, the non-paternity rate was found to be 1.5% [5]. Furthermore, a more recent review article concluded that men participating in genetic and lineage studies have lower rates of non-paternity, around 1.7–3.3% [6].

Numerous articles have been published on the topic of gametes misidentification. Rienzi et al. studied procedural errors which may impact gametes traceability and concluded that sample misidentification leading to wrong sperm used at procedure was very rare [7]. However, this group did not study the process of sperm importation. Furthermore, the revised guidelines for good practice in IVF laboratories published by ESHRE clearly recommend procedures for patient identification and gamete labeling, but there is no recommendation regarding biologic verification of identity [8].

Ultimately, these scenarios have not been reported and are difficult to identify based on current protocols for sperm collection and storage. One solution would be the collection of a patient signed and dated glass-slide containing sperm

✉ Michael H. Dahan
dahanhaim@hotmail.com

¹ Department of Obstetrics and Gynecology, University of British Columbia, Suite 930-1125 Howe Street, Vancouver, BC V6Z 2K8, Canada

² Department of Obstetrics and Gynecology, MUHC Reproductive Centre, 888 Boul de Maisonneuve E #200, Montreal, QC H2L 4S8, Canada

obtained at the time of specimen delivery. This slide would be kept in case genetic identification is later required. Although some of the specimen required for insemination would be lost, the sample used in procedures could be directly traced to the patient. A second option would be to keep the supernatant after sperm processing. With this method, the plaintiff could still claim that the actual specimen administered in IUI was mixed up. However, if the paternal genetics of the child are inconsistent with any of the specimens from that day, it would argue against a medical error. The amount of seminal fluid needed to be stored would have to be determined and would likely decrease with time as DNA recovery techniques improve. However, as current standard go, reproductive technology centers are at risk of a major lawsuit, with little chance to prove that a medical error did not occur.

Compliance with ethical standards

Conflict of interest The authors declare that they have no conflict of interest.

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