

Posthumous Sperm Retrieval after Brain Death from Anaphylaxis-Induced Cardiac Arrest: An Ethics Case Report

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Abstract

Posthumous sperm retrieval (PSR) is a technically feasible but ethically complex procedure that arises most often after the sudden death or brain death of a young man. This case report describes a 27-year-old male who suffered anaphylaxis to peanut ingestion, resulting in a prolonged ventricular fibrillation cardiac arrest, subsequent brain death, and central diabetes insipidus. His surviving spouse requested posthumous sperm extraction for the purpose of future assisted reproduction, citing the couple's active efforts to conceive. Urology confirmed the technical feasibility of the procedure and noted that retrieved sperm would require cryopreservation for subsequent use via intracytoplasmic sperm injection (ICSI). However, the hospital ethics committee ultimately deemed the request inappropriate in the absence of prior written consent from the decedent. This report reviews the clinical course, the ethical and legal frameworks governing posthumous gamete procurement, and the existing literature on this evolving topic.

Keywords

Posthumous Sperm Retrieval, Anaphylaxis, Ethics

1. Introduction

Advances in assisted reproductive technology have made posthumous sperm retrieval and subsequent conception a medical reality. Since the first reported case of PSR in 1980, requests for gamete procurement from deceased or brain-dead individuals have increased, raising profound ethical, legal, and psychosocial questions [1]-[3]. The terminology in this literature varies: "perimortem" procurement refers to retrieval from a patient who is imminently dying but has not yet been

declared dead, while “postmortem” procurement refers to retrieval after declaration of death by either circulatory or neurologic criteria [3]. In this report, the patient was declared legally dead by neurologic criteria (brain death) prior to the spouse’s request; accordingly, the case is analyzed throughout as posthumous sperm retrieval after legal death by neurologic criteria.

The central tension in these cases lies between the surviving partner’s desire for genetic continuity and the deceased individual’s reproductive autonomy particularly when no prior written directive exists. This case illustrates the clinical and ethical challenges that arise when a young, brain-dead patient’s spouse requests sperm extraction in the acute aftermath of an unexpected death.

2. Case Presentation

A 27-year-old male with a known history of peanut allergy presented to the emergency department after accidental ingestion of peanuts at a social gathering. Despite immediate bystander administration of intramuscular epinephrine via auto-injector, the patient developed progressive cardiovascular collapse consistent with severe anaphylaxis. En route to the hospital, he suffered cardiac arrest with an initial rhythm of ventricular fibrillation.

Advanced cardiac life support was initiated per standard protocols, including repeated doses of intravenous epinephrine, aggressive isotonic fluid resuscitation, and multiple defibrillation attempts. The patient remained in refractory ventricular fibrillation for approximately 45 minutes before return of spontaneous circulation (ROSC) was achieved.

Upon admission to the intensive care unit, the patient was comatose and mechanically ventilated. Neurological examination revealed absent brainstem reflexes, including absent pupillary light reflexes, absent corneal reflexes, absent oculocephalic and oculovestibular reflexes, and no respiratory drive on apnea testing. Within 24 hours of admission, the patient developed central diabetes insipidus (DI), manifesting as polyuria with urine output exceeding 2 liters per hour, hypernatremia, and low urine osmolality. Desmopressin (DDAVP) was administered with an appropriate response, consistent with hypothalamic-pituitary axis failure secondary to brain death.

Formal brain death evaluation was performed by the neurology and ICU attending physicians in accordance with institutional protocol and the American Academy of Neurology (AAN) 2023 Consensus Guideline for determination of brain death/death by neurologic criteria. All prerequisites were met, clinical examination confirmed the absence of brainstem function, and apnea testing was positive. The patient was declared dead by neurologic criteria.

Clinical Timeline. The following timeline summarizes the key events relevant to both sperm viability and the ethical decision-making process:

- **Hour 0:** Accidental peanut ingestion at a social gathering; bystander epinephrine administered.
- **~Hour 0.5:** Cardiac arrest (ventricular fibrillation) en route to hospital; ACLS

initiated.

- **~Hour 1.25:** Return of spontaneous circulation (ROSC) after approximately 45 minutes of resuscitation.

- **Hours 1 - 24:** ICU admission; coma with absent brainstem reflexes on serial examinations.

- **Hour 24:** Onset of central diabetes insipidus; DDAVP initiated.

- **Hour 36 - 48:** Formal brain death evaluation completed; patient declared dead by neurologic criteria.

- **Hour 48 - 52:** Family meeting; spouse informed of brain death determination and requests posthumous sperm retrieval.

- **Hour 52 - 56:** Urology consultation confirms technical feasibility of retrieval.

- **Hour 56 - 72:** Ethics committee convened; request deemed not ethically appropriate. Mechanical ventilation was withdrawn per organ donation protocols.

The patient's wife, a 26-year-old woman, was informed of the determination of brain death. During the family meeting, she disclosed that the couple had been actively trying to conceive and requested that sperm be extracted from her husband for future assisted reproduction. She expressed that this was consistent with her husband's wishes, though no written documentation existed to confirm this.

Urology was consulted and confirmed that posthumous sperm retrieval was technically feasible. Methods available included testicular sperm extraction (TESE), epididymal aspiration, or electroejaculation, all of which have been shown to yield viable sperm even up to 36 hours after death. Because sperm retrieved postmortem typically has limited motility, the urologist noted that cryopreservation for subsequent use via intracytoplasmic sperm injection (ICSI) rather than conventional insemination would be the appropriate reproductive strategy.

The hospital ethics committee was consulted to evaluate the appropriateness of the request. The committee's deliberation was structured around four ethical principles:

1) Reproductive autonomy of the decedent. The committee considered whether the deceased had expressed, in any form, his wishes regarding posthumous reproduction. No written advance directive, fertility clinic consent form, or other documentation existed. The spouse's testimony that the couple was actively trying to conceive was acknowledged as circumstantial evidence of a shared reproductive desire but was not considered equivalent to the decedent's autonomous authorization of posthumous gamete use.

2) Substituted judgment. The committee evaluated whether the spouse's account of the decedent's wishes met the standard of substituted judgment, that is, whether a reasonable determination could be made that the decedent would have consented to posthumous sperm retrieval and use if asked. The committee concluded that while the couple's active efforts to conceive were suggestive, they did not constitute clear and convincing evidence of the decedent's specific intent regarding posthumous reproduction, a context qualitatively different from conception during life.

3) Bodily integrity. Extracting gametes from a deceased individual involves an invasive procedure performed without the individual's contemporaneous consent. The American Society for Reproductive Medicine (ASRM) has noted that some may object to this as a violation of bodily integrity, particularly when no gametes had been previously frozen, and no prior reproductive planning with a fertility center had occurred.

4) Program discretion. The ASRM Ethics Committee has consistently held that programs are not obligated to participate in posthumous gamete procurement, and that institutions should develop written policies addressing the circumstances under which they will or will not participate. The committee noted that the institution lacked a formal policy on posthumous sperm retrieval, which contributed to the decision to err on the side of caution.

After weighing these considerations, the ethics committee determined that the procedure was not ethically appropriate in this case, primarily due to the absence of prior written consent from the decedent authorizing posthumous gamete retrieval and use.

3. Discussion

Posthumous sperm retrieval is a well-established urological procedure. A systematic review by Ovics *et al.* (2022) identified 148 reported cases of perimortem or postmortem sperm acquisition, with successful retrieval in 113 cases (76%) [1]. A variety of techniques have been described, including testicular biopsy, epididymal aspiration, vasal irrigation, and electroejaculation. Shefi *et al.* (2006) demonstrated that viable, motile sperm can be obtained up to 36 hours after death, with two cases resulting in live births following ICSI using sperm retrieved 30 hours postmortem [2]. More recently, Barda *et al.* (2025) reported successful retrieval in 25 of 28 cases (89%) with viable sperm obtained up to 37 hours postmortem under optimal conditions, noting a time-dependent viability decline of approximately 2% per hour [4].

The most widely cited ethical requirement is respect for the reproductive autonomy of the deceased. The ASRM Ethics Committee has consistently held that posthumous gamete retrieval and use are ethically justifiable when written documentation from the deceased authorizing the procedure is available. In the absence of such documentation, the ASRM acknowledges that programs open to considering such requests should do so only when the request is initiated by the surviving spouse or partner, and emphasizes that programs are not obligated to participate. Importantly, the ASRM notes that retrieval of gametes does not commit a center to their later use for reproduction, suggesting that a staged approach retrieval and cryopreservation now, with deferred decisions about use pending further counseling and a bereavement period may serve as a compromise that preserves future options without irreversibly committing to posthumous reproduction [3]. This staged approach represents a middle ground between permissive frameworks (which would allow retrieval and use based on presumed or substituted consent)

and restrictive frameworks (which require explicit written authorization for any retrieval). In this case, the ethics committee adopted the more restrictive position, weighing the absence of written consent as the decisive factor [3].

Consideration must be given to the welfare of a child who would be born without a living father. While studies have not demonstrated adverse outcomes in children conceived posthumously, the psychosocial implications remain an area of ongoing discussion [3].

The surviving wife's grief and desire for genetic continuity with her deceased husband represent legitimate interests. Tremellen and Savulescu (2015) have argued that the welfare of the living widow and prospective child should be the primary ethical focus, and that presumed consent may be more appropriate than requiring explicit written consent, particularly when the couple was actively trying to conceive. They contend that a deceased man can benefit from posthumous conception through continuation of his genetic lineage and fulfillment of his widow's wishes [5].

A survey of 75 major U.S. academic medical centers found that, among the 41 institutions providing data, only 11 (26.8%) had formal policies regarding posthumous sperm retrieval. Of those, 4 required prior written consent, while 6 allowed verbal or inferred consent from the surviving life partner. One policy prohibited the procedure entirely, and five included a bereavement period. Lack of legal guidance was cited as the most common barrier to policy adoption [6].

The legal framework governing posthumous reproduction varies significantly by jurisdiction. In the United States, no federal statute specifically addresses posthumous sperm retrieval, and state laws are inconsistent [3]. Kahan *et al.* (1999) recommended that urologists focus on the express intent of the decedent and limit postmortem sperm retrieval to cases with documented written requests, noting that in the absence of an affirmative directive, no other relative or guardian should authorize retrieval [7].

Internationally, Israel has adopted a notably permissive stance, allowing posthumous sperm retrieval even at the request of the deceased's parents, a policy that expanded further following the October 7, 2023 conflict [3]. This contrasts with more restrictive approaches in much of Europe and North America. The European Society of Human Reproduction and Embryology (ESHRE) and the ASRM both emphasize the primacy of the deceased's documented wishes.

In this case, several factors supported the wife's request: the couple was legally married, they were actively trying to conceive (suggesting a shared reproductive desire), and the request was initiated by the surviving spouse all of which align with the ASRM's conditions for considering posthumous gamete procurement even without written documentation. The technical feasibility was confirmed by urology, and the time-sensitive nature of sperm viability added urgency to the decision. However, the ethics committee's decision, while defensible, is not the only ethically supportable position. Some ethicists argue that the couple's active efforts to conceive constitute strong circumstantial evidence of the decedent's reproduc-

tive wishes, and the staged approach described above could have preserved the option for future use without requiring an immediate commitment to posthumous reproduction [3] [5].

4. Conclusion

This case highlights the intersection of reproductive technology, medical ethics, and the law in the setting of sudden brain death in a young man. While posthumous sperm retrieval is technically feasible and can result in live births, the ethical permissibility of the procedure remains contingent on the decedent's documented wishes, institutional policy, and jurisdictional legal frameworks. The absence of written consent from the deceased was the decisive factor in the ethics committee's determination. This case underscores the need for healthcare institutions to develop proactive policies on posthumous gamete procurement, and for clinicians to consider discussing reproductive wishes with patients as part of advance care planning, particularly in young adults. As the ASRM recommends, programs should develop written policies regarding the specific circumstances in which they will or will not participate in posthumous gamete procurement.

Ethics Approval and Consent for Publication

Written informed consent for publication was obtained from the patient's surviving spouse (next of kin), including consent for the publication of clinical details in a de-identified format. No identifying information is included in this report.

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Author Contributions

Conceptualization, P.G. and B.S.; writing—original draft preparation, B.S.; writing—review and editing, P.G.; visualization, P.G.; supervision, P.G. All authors have read and agreed to the published version of the manuscript.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

References

- [1] Ovics, S.O., Baram, S., Nothman, S., Weiss, A. and Beck-Fruchter, R. (2022) Perimortem and Postmortem Sperm Acquisition: Review of Clinical Data. *Journal of Assisted Reproduction and Genetics*, **39**, 977-986. <https://doi.org/10.1007/s10815-022-02427-x>
- [2] Shefi, S., Raviv, G., Eisenberg, M.L., Weissenberg, R., Jalalian, L., Levron, J., *et al.* (2006) Posthumous Sperm Retrieval: Analysis of Time Interval to Harvest Sperm. *Human Reproduction*, **21**, 2890-2893. <https://doi.org/10.1093/humrep/del232>

- [3] Pollens-Voigt, J., Taylor, L. and Marks, A. (2024) Ethical and Practical Considerations of Perimortem Gamete Procurement for Palliative Care Providers. *Journal of Pain and Symptom Management*, **67**, e94-e98. <https://doi.org/10.1016/j.jpainsymman.2023.08.026>
- [4] Barda, S., Dekalo, S., Mendelson, T., Marom, R., Veredgorn, Y., Bashi, T., *et al.* (2025) Posthumous Sperm Retrieval in the Context of Armed Conflict. *Human Reproduction*, **40**, 2056-2065. <https://doi.org/10.1093/humrep/deaf172>
- [5] Tremellen, K. and Savulescu, J. (2015) A Discussion Supporting Presumed Consent for Posthumous Sperm Procurement and Conception. *Reproductive BioMedicine Online*, **30**, 6-13. <https://doi.org/10.1016/j.rbmo.2014.10.001>
- [6] Waler, N.J., Clavijo, R.I., Brackett, N.L., Lynne, C.M. and Ramasamy, R. (2018) Policy on Posthumous Sperm Retrieval: Survey of 75 Major Academic Medical Centers. *Urology*, **113**, 45-51. <https://doi.org/10.1016/j.urology.2017.10.048>
- [7] Kahan, S.E., Seftel, A.D. and Resnick, M.I. (1999) Postmortem Sperm Procurement: A Legal Perspective. *Journal of Urology*, **161**, 1840-1843. [https://doi.org/10.1016/s0022-5347\(05\)68822-2](https://doi.org/10.1016/s0022-5347(05)68822-2)