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Postmortem Sperm Retrieval and Assisted Reproduction: Issues without Solutions?



استرجاع الحيوانات المنوية بعد الوفاة والمساعدة على التناسل: عرض قضايا بدون حلول؟

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Abstract

The issue of request for post-mortem sperm retrieval [PMSR] for reproductive purposes has gained momentum in the recent past in India and other countries. There are various methods for post-mortem retrieval of sperm. Modern medicine has progressed to a stage where posthumous gamete retrieval with subsequent reproduction has become a possibility. However, very little has been discussed regarding guidelines or ethical, social, and medical issues related to such a procedure. The procedure is a boon for families who might have become saddened by the untimely death of their son. The procedure can be useful for not only the spouse of married individuals but also to their parents. Also, such a procedure can be very helpful to the parents of their unmarried son, who was their sole support. However, there is no discussion of using such PMSR techniques in married as well as unmarried individuals if requested by close relatives. The present paper discusses the issues regarding PMSR in deceased individuals and the various issues that may arise.

المستخلص

اكتسبت مسألة طلب استرجاع الحيوانات المنوية بعد الوفاة للأغراض التناسلية زخماً في الماضي القريب في دول مثل الهند وغيرها. حيث أن هناك طرق مختلفة لاستعادة الحيوانات المنوية بعد الوفاة، وخصوصاً مع تقدم الطب الحديث إلى مرحلة أصبح فيها استرجاع الأمشاج بعد الوفاة مع الاستنساخ اللاحق أمراً ممكناً. ومع ذلك، فقد أجريت مناقشات قليلة جداً فيما يتعلق بالمبادئ التوجيهية والقضايا الأخلاقية والاجتماعية والطبية المتعلقة بهذا الإجراء، حيث يعد هذا الإجراء نعمة للعائلات التي قد تكون حزنت بسبب وفاة ابنها المفاجئ. ويمكن أن يكون الإجراء مفيداً ليس فقط عند المتزوجين ولكن أيضاً لأولياء الأمور، كما يمكن أن يكون مثل هذا الإجراء مفيداً للغاية أيضاً لأباء ابنهم غير متزوج، والذي كان سندهم الوحيد. ومع كل ذلك، لا يوجد نقاش لاستخدام تقنيات استرجاع الحيوانات المنوية بعد الوفاة لحالات المتزوجين وغير المتزوجين أو إذا ما تم طلب هذا الإجراء من أناس قريبين وعزيزين على الميت. تتناول هذه الورقة القضايا المتعلقة بطلب استرجاع الحيوانات المنوية بعد الوفاة للأفراد المتوفين والقضايا المختلفة التي قد تنشأ عنه.

Keywords: Forensic Science, Forensic Medicine, Medical Ethics, Sperm, Reproduction, Posthumous Extraction.

الكلمات المفتاحية: علوم الأدلة الجنائية، الطب الشرعي، الأخلاقيات الطبية، الحيوانات المنوية، التناسل، الاسترجاع ما بعد الوفاة



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1. Introduction

Post-mortem sperm retrieval [PMSR] for the purpose of reproduction was first reported by Rothman [1980] [1]. The first successful fertilisation with subsequent birth was reported in 1998-99 [2]. Some countries have laws that prohibit the procedure of PMSR. Barring few sporadic Medical institutes of USA (like newyork hospital guidelines) or countries like Israel, there are no guidelines for PMSR and future pregnancies. Recently, there was a request from the parents of an unmarried male for PMSR. He suffered a fatal road traffic accident and was brought to our tertiary health care centre for post-mortem examination. He was the only son of his parents. The deceased's parents requested the doctor on duty to preserve the sperm of their son so that they could have grandchild in the future. An earlier similar request was also received at one of the leading institutes in New Delhi. The request was made by the wife of the deceased. However, the request was denied because currently in India there are no clear guidelines available for the procedure of post-mortem sperm retrieval and subsequent use for assisted reproduction [PMSR-AR] [3]. With the rise of nuclear families and more and more parents having one or two offspring, the request for such procedure is expected to rise in the future [4]. PMSR-AR raises various ethical, social, medical and legal issues in both married and unmarried males.

2. Ethical Issues

Is it ethical to retrieve sperm from a dead person? Can PMSR be done in unmarried individuals? What is the role of consent in such procedures? Without the consent of the husband, can the consent of a wife or parents be considered? What should be the period for which the sperm can be stored? Can there be any restriction to decide on whom the insemination should be done? Cases have been recorded where the request by spouses or partners or their parents have been done after the unexpected death of the

individual [1, 2].

2.1 Current Scenario in Different Countries

The most widely acclaimed case was Alain Parpalaix of France who was suffering from cancer. His wife obtained an order from a court of law that she can be inseminated with her husband's sperm by PMSR. However, after this case France passed legislation forbidding posthumous insemination [5]. Similarly, in the USA a boyfriend had instructed one sperm bank to allow his girlfriend to be inseminated with his sperm and later committed suicide. Later, the girlfriend was permitted to be inseminated with his sperm on the basis of a court order [6]. Countries like Germany, Sweden, Canada, and the state of Victoria in Australia have legislation prohibiting posthumous assisted reproduction [7, 8]. In Israel, there are laws allowing the parents of the deceased to retrieve sperm and select the female recipient for future fertilization without prior consent from their son [9]. Also, they allow posthumous assisted reproduction for the wife within one year of her husband's death. In the UK, The human fertilisation and embryology act 1990 does not prohibit post-mortem storage and use of spermatozoa but requires prior written consent of the deceased. Currently the USA and Belgium allows PMSR-AR [10].

2.2 Why PMSR-AR is Important?

Usually, marriage is a state of being united to a person of the opposite sex as husband or wife in a consensual and contractual relationship recognised by law. Social and cultural factors, may pressure a married individual to have children as soon as possible after marriage. A mother or father may die unexpectedly and thus be deprived of children? Would be grandparents may find themselves in a situation where thier only son dies without having children. Therefore, in such situations PMSR-AR can become very important for the family of the deceased to recover



from the loss of their beloved son by having his progeny in future.

2.3 What About the Child Born by PMSR-AR?

Most ethical research regarding PMSR-AR suggests that it would not be in the interest of child to be reared by single parent or any other i.e. living grandparents, brothers, sisters, etc. It may be harmful on the part of a single parent household [11].

The question of single parenting may arise when the child born by PMSR-AR is suffering from any gross genetic defect or disability. The child born by PMSR-AR will have more advantages like early relief from grief, sense of hope in living, garnering love which will get reciprocated etc. to his parents than the disadvantages that are not too serious in nature. A mother bearing a child itself is more satisfying experience to her who already had suffered a trauma due to the death of her husband.

However, one caution must be noted here that if a person known to have severe disease condition which is likely to be transferred to the future offspring causing such a serious threat to the mere existence of the upcoming child than PMSR-AR might be avoided.

In case of deceased being unmarried, then, though the future child might be the supporting pillar of their grandparents but what about his own existence in absence of his biological father and mother. Can the child be able to face the problems of being nurtured by parents who are actually his father's father or mother's mother? As the child is being born with known facts of being the gene of already dead parent, this voluntary act may sometimes be held valid.

2.4 Right of the Child to be Born Free of Serious Impediments to the Wellbeing

A child born with serious disability unknowingly with-

out anybody's fault is not a violation of child right. But, if knowingly harming or causing PMSR-AR leading to child be born with serious handicap violates the right of the child to be born free of serious impediments to his wellbeing [11].

2.5 Circumstances of Death

This is a bit tricky part for issues of PMSR-AR. It is accepted fact that to allow PMSR-AR the death should have occurred unexpectedly and suddenly. However the fact must be to take note of the circumstances by which death occurred. If a history sheeter having involved in crime or terrorism against general public die during violence, then PMSR-AR request in such cases will not be desirable. Because in such cases it will be indicating a more egocentric motivation by the consenting kin to have "Baby souvenir" of their deceased individual which later can be motivated for avenging the death of his father. However, certain circumstances like soldier dying in combats while in service towards nation, PMSR-AR can be a great boon to his family to recover from the grievances of the loss in some sense. So whether the death is by any culpable act of deceased or due to heroism PMSR-AR is requested to carry on the legacy of the deceased. Even, the deceased who may have died due to any fatal accidents or due to any incurable natural disease or by means of suicide can also be considered for PMSR-AR. However said this PMSR-AR will have more pronounced effect on the near and dear of the deceased than the legacy of the deceased itself.

2.6 Role of Consent in PMSR-AR

For retrieving a sperm after death of an individual, role of consent is very important. Whether the man has given consent during the lifetime? Whether it was an explicit consent or an inferred consent?



Explicit consent means written or verbal consent that had been documented by the health care provider. Such type of consent has been given validity by Human fertilisation and embryology act of UK for PMSR. However, Israel, Belgium and USA do not have forbid PMSR-AR without explicit consent of the deceased [10].

Another type of consent is inferred consent which is been currently utilised in various medical procedures where the patient is not in a position to give explicit consent. For e.g.- patients on ventilator in vegetative state are considered for organ donation through inferred consent of relatives. Such consent is given in the belief that the patient if remained alive would have given his consent for the said procedures. On similar grounds adopted for organ donation, consent from next to kin can be taken for PMSR-AR, which seems to be relevant and practicable. However one must understand that organ donation is for a noble purpose and the relatives are doing selfless service by giving consent on behalf of the dying person. But, in PMSR the consent given by the relatives are not selfless but rather selfish. So we have to be cautious in interpreting the inferred consent.

However, some might oppose to such ideas of inferred consent by the patient relatives. They might believe that the patient after his death will not be interested in the body or body part of self. Some may even object the idea of cutting one's body and removing any body parts for any purpose when alive. So, such issues must be sort out by taking due note of the wishes of the patient when alive from their relatives.

2.7 Now Question is Who can Give Inferred Consent?

If married, the deceased wife had the right over making decision for PMSR-AR. Because it is her procreative freedom and which must be respected first.

In unmarried cases, the deceased family members can

give consent for such procedures. If by doing PMSR-AR the deceased relatives get emotional support from the grievance of the loss of their beloved such decision must be respected and the physician might carry the procedure.

The Revised Uniform Anatomical Gift Act [RUAGA] in USA provide legal framework for determining who can give request for PMSR-AR [12]. According to them spouse has decision making priority before parents and parents have decision making priority over unmarried cohabiting partner.

In countries like India, no such guidelines or case law exists. Bearing a child is a personal affair of that person. PMSR-AR will blur the boundaries of such personal privilege. In fact PMSR-AR will infringe the autonomy of person to decide about reproduction. Considering Indian scenario, marriage is an institution legally permitting to have sexual relationship and to procreate. So the Doctors facing such request for PMSR should reasonably infer the situation and decide. Moreover, Doctors should be careful because usually such request needs urgent attention.

Countries like India and others having more patriarchal society, the wishes of a woman including wife have less or somewhat second say in family decisions. As consent of wife is given priority over parents of the deceased for PMSR-AR, so it will be very interesting to see what the authority of consent given by wife is? Whether such consent given by wife is free from coercion or fear should be noted. Consent given under fear/ coercion should not be considered valid. If the wife complaint in future regarding forced consent by family than the further procedure of PMSR-AR should be abandoned.

In absence of any law or guidelines, if Doctor decides to go for PMSR-AR, then such procedure will help the requesting spouse/parents in two ways. Firstly retrieval of sperm can give emotional support to the grieving family and provide a reason to live and led a life to rear their pro-



spective child/grandchild. Secondly the prospective child/grandchild will be their emotional and physical support in older days.

2.8 Should Physician Carry Out PMSR-AR if Requested?

As a man of science the physician has to deal with situation by judging and weighing the merits/ demerits of procedures to be adopted for PMSR-AR. If such request is being made by family members encountering unexpected death of their loved one, then the physician has to take decision whether to carry forward or not.

A physician is free to choose either to go forward or decline such request. As PMSR-AR is not a medically necessary procedure. However, in ethically justifiable cases the physician can agree to do it. However, a physician who conscientiously opposes such procedure is free to decline to perform it as per the principle of conscientious objection [13].

3. Legal Issues

The important issue is would a child born by PMSR be legitimate in legal sense? In countries like India, there is Indian Evidence Act 1872, which states that a child born after 280 days of dissolution of marriage [by death or divorce] is illegitimate [14]. Furthermore, as per Indian Council of Medical Research [ICMR] guidelines, the sperm should be cryopreserved for 6 months before first insemination [15]. Now, these ICMR guidelines are for the living sperm donor and during that period the sperm donor is checked for HIV, and Hepatitis B and C testing. However, in PMSR-AR the donor is already dead. So, now on the basis of count of days, the child can technically become illegitimate. Sec 16 of Hindu marriage act deals with the issues of legitimacy of child [16]. However, it must be noted that issue of illegitimacy after dissolution of marriage has been rule out in one of the Supreme court judgement in *Revanasiddapa vs Mallikarjun*. It stated that regarding sec 16 [3] of Hindu

marriage act that, 'the child born in illegitimate relationship/ void marriage is innocent and is entitled to all the rights to property to which his parents are entitled whether ancestral or self-acquired property' [17]. Thus, it can be stated that even if the child is born within or outside the ambit of marriage is having right to inheritance. So, the child born through PMSR-AR has definite say and right to inherit in given circumstances.

According to Guardians and Wards Act, 1890, in India, Muslims, Christians, Parsis and Jews and all Hindu, Buddhists, Sikhs and Jains by religion can opt for guardianship of a child whether legitimate or illegitimate [18]. Adopted children have the right to inherit property from their adoptive parents. A valid adoption cannot be nullified by any party.

Similarly according to the Indian succession act 1925 section 27, "Persons held for purpose of succession to be similarly related to deceased [19]. For the purpose of succession, there is no distinction-- [a] between those who are related to a person deceased through his father, and those who are related to him through his mother; or [b] between those who are related to a person deceased by the full blood, and those who are related to him by the half-blood; or [c] between those who were actually born in the lifetime of a person deceased and those who at the date of his death were only conceived in the womb, but who have been subsequently born alive. "However, there is no discussion about the child born from various methods of assisted reproductive technology [ART]. This suggests that a child born through PMSR cannot inherit [3]. After PMSR the child will be born through surrogacy for which the new born will be related to deceased in half blood. Section 27[a] suggests that the person is related to the deceased through his father. The child born by PMSR can be adopted legally by their guardian/ grandparents for preventing the issue of illegitimacy. It will be similar to the situation when child's mother and father die in a mishap and their grandparents or



other legal guardian nurtures them.

3.1 Issues related to PMSR-AR with Surrogacy

Again another set of issues like contract with surrogate mother, money to be paid, health of surrogate mother and child developing inside the womb, risk of pregnancy and many more will arise. Similarly issues like child born with physical or mental infirmity? Legally if the grandparents refuse to accept such child then the surrogate mother and her husband are obliged to keep such child since she had given birth to the child [20]. Such issues can be resolved in contracts between the future parents and the surrogate mother in advance before undertaking the procedure of fertilization.

4. Social Issues

PMSR-AR will be great benefactor to the widowed wife in married individual and to grandparents in case of unmarried male. Child born through PMSR-AR will offer considerable help and hope to the life of aging grandparents and to widowed wife, but best interest of child remains paramount. In case of PMSR-AR in unmarried male the situation is somewhat different, as grandparents will rear the offspring. With the increasing age of grandparents will it be possible for them to rear a child with due care and responsibility? Is it possible for the old grandparents to rear a child without actual parents, in case PMSR-AR of unmarried male or in absence of widowed wife in married? How will they explain under what circumstances child was born? If baby born with some physical or mental deformity then how could the old grandparents handle a child? Is it possible for grandparents to connect with a child born with PMSR-AR and surrogacy? What about sex selection while surrogate insemination? Considering the typical Indian mentality, the grandparents will have a tendency to beget a male baby. How to stop such sex selection? In Indian scenario, preconception and prenatal diagnostic test act can be useful to curb this problem. However, with such PMSR-

AR surrogacy born child may at time offer a ray of hope to lead a life for a cause. In today's era most of the families are nuclear families. Such procedure may infuse new hope in the life of these older people. However, an age limit can be imposed for such older parents for PMSR on similar grounds followed for adoption of child by older couple in adoption laws. Similarly, it is important to mention that the child is not the one in a family alone. The child is a person in the society. This is particularly important for having a scenario which is necessary for the child's social security when grandparents of the old age were gone.

5. Medical Issues

The first successful conception using sperm retrieved post-mortem was reported in 1998, leading to a successful birth the following year. Sperm have been extracted through a variety of means, including removal of the epididymis, irrigation or aspiration of the vas deferens,

and rectal probe electro-ejaculation [21]. The advancement made in ART procedures has made PMSR-AR feasible. However, timing of sperms obtained by PMSR for insemination has serious concerns because the sperms are obtained from dead body. Review of medical literature suggests that the PMSR should be performed within 24 hours after death so as to acquire motile or viable sperms [21]. Several cases of successful pregnancies with PMSR have been noted in western literature. However, considering Indian environment we cannot place much reliance over 24 hour postmortem period for PMSR. In a recent Indian study conducted at Nagpur, it was noted that within a period of 6 hours postmortem interval [PMI], 90% sperm viability was found and as PMI increases; viability decreases to 33% by 18-24 hour PMI [22]. So to obtain healthy sperm through PMSR, it is necessary to obtain sperms in early PMI; preferably within 6 hours PMI. Similarly with the onset of rig-



or mortis in muscle, the sperms present in epididymis are ejected out due to contraction of dartos muscle. Therefore if epididymis is harvested the small quantity of sperms may be obtained. Aspiration of vas is another method. Other technique includes testicular aspiration. But question arises with reference to maturity of testicular sperms. In the study of Tumram et al it was stated that sperms can be retrieved from penile tract of the dead by squeezing the penis in sufficient quantity. The sperms present in the penile tract are usually sufficiently matured and ready to survive the hardships of the hostile environment of the vaginal tract [22]. Such PMSR sperms from penile tract can possibly bore more fruitful results for future fertilization procedures. So, the methods of various PMSR methods need attention. Special training of the health care professional about the procedures of retrieval, storage and insemination is a need of hour for the future. Such training should be followed in similar lines as to the sperm donation in living donor. All aseptic precautions must be followed and proper labelling and preservation of the posthumous sperm be carried out till reaching to the sperm bank. Cosmetic correction of genitals should be done if extensive exploration is carried like testis removal etc.. the samples should be cryopreserved before future utilisation.

5.1 Period for Preservation of Sperm for PMSR-AR

There should be a time limit framed for storing sperm obtained by PMSR. Also, the method of disposition either by subsequent assisted reproduction or destruction must be made with the consenting kin of relative in advance. On amount of death or incompetence of the next of kin then the decision of disposition of such sperm of PMSR must be made in advance. The entire documentation should be ready before hand with every physician adopting such PMSR-AR methods. For ART procedures ICMR guide-

lines provides that the sperm should be cryopreserved for a period of 6 months [15]. No such guidelines are available for PMSR. It can be suggested that in similar vein as per ICMR guidelines for ART, the sperms from PMSR can be cryopreserved for 6 months or more.

6. Some Guidelines in Existence in Different Parts of World

Cornell guidelines [USA][23]

- Consent of the deceased must be presumed and consent of retrieval be only provided to the wife of the deceased.
- The death must be sudden and for reason not due to any communicable disease or one known to affect sperm viability
- Retrieval must be done within 24 hours of death. Cryopreservation must be available locally.
- There should be waiting period of 1 year before wife being inseminated and further the sperm should be screened for communicable diseases.

6.1 ESHRE Task Force on Ethics and Law of Posthumous Assisted Reproduction [24]

- Written consent of deceased person before PMSR. Consent should be obtained at time of storage and before the start of IVF.
- Thorough counselling of surviving partner during decision making period is necessary.
- A minimum waiting period of one year after death should be imposed.

6.2 In Countries Like India

- Currently no guidelines available.

6.2.1 Proposed Guidelines by these Authors [Bardale-Tumram Guidelines]



- Explicit consent of the deceased by physician regarding PMSR-AR is desirable when deceased was alive.
- In case of unexpected death without anticipation and in cases where prior consent of the deceased not taken then the consent of next to kin must be regarded. For eg- consent of wife in case of married individual or parents in case of unmarried individual be taken. However, consent of both wife and parents are desirable.
- Retrieval must be done within 12 hours of death of the patients. Facility of cryopreservation must be present locally.
- Waiting period of one year should be given before PMSR-AR is carried out. This period should be utilised for counselling and preparation of the consenting party.
- Screening of the individual for communicable disease should be mandatory. Similarly, screening of sperms for any communicable disease should be mandatory before PMSR-AR.
- In case of cohabitation without marriage consent of parents should be taken before hand of the cohabitating partner.
- Establishment of social security when parents of the proposed child were gone.

7. Conclusion

As there is no law of land, can such procedure be allowed? If the intentions and motives of the spouse/parents/guardian are good and the procedure is carried out as per standard protocol, there should not be any hindrance in collection of PMSR and its possible future use in fertilization. In conclusion it can be added that considering the increasing requests receiving for PMSR, it is high time to

have a meaningful discussion over these issues and have a proper law or guidelines. Such law or guidelines will help the Doctor to handle the entire issue smoothly when faced with such request.

Conflict of Interest

None

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