

# A sperm aspiration technique in the armamentarium of options to help in extreme testicular trauma—a war experience



Over the past 15 years and even before, modern warfare has changed with improved body armor and survival of soldiers, but extremity and pelvic injuries from dismounted improvised explosive devices (IEDs) have become more prevalent, with an increased of extensive and permanent damage to reproductive organs (1).

Wounded warriors have put their lives on the line for their country and have often sacrificed their lives and health for protecting others. In that light, injury to their reproductive abilities is an extreme sacrifice for IED survivors, often potentially taking away their own hopes of future family building. Over the past 4–5 years, the United States Senate and House of Representatives have continued to debate the issue of providing federal coverage for infertility treatment to military service members that have sustained combat-related reproductive injuries. That is why this topic and the timing of the research by Healy et al. (2) is so important to reproductive providers, the American Society of Reproductive Medicine, and health policy makers.

The research is admittedly a small case series of six male soldiers who sustained significant genital injuries from dismounted IED injuries. In the acute phase of their injuries (up to 12 days after injury) they were able to make it back to a tertiary military facility in the U.S. to undergo transrectal seminal vesicle aspiration (SVA) of sperm to subsequently undergo assisted reproductive techniques with the use of IVF-ICSI with 38%–47% fertilization rates and one live birth out of three IVF/frozen-embryo cycles (2). The authors ingeniously tried this known technique when normal sperm recovery techniques, such as testicular sperm aspiration or biopsy, were not possible owing to the severity of genital/testicular injuries. In the absence of testicles or adequate tissue, sperm can be found in the seminal vesicles and is a normal physiologic phenomenon even before the act of ejaculation (3). This SVA technique is well established for cases of ejaculatory duct obstruction and other types of male infertility (4, 5). Male infertility specialists trained in this technique are able to have this option available in their armamentarium of choices.

Although interesting for the use in such terrible cases of trauma, the question that has long been asked is why soldiers are not able to cryopreserve sperm before deployment, as cancer patients routinely do before surgery and or chemotherapy. The authors address this and state: “Currently, pre-deployment sperm cryopreservation may be performed at the soldier’s discretion. The military medical system does not provide routine direct financial coverage for cryopreservation of gametes. Reasons for this include legal issues such as who is going to pay for storage and for how long, and if soldiers die in combat, does the family have the right to use their sperm? Also, if all men froze sperm before deployment, it is only a small minority that would actually need to use it. In addition, before the most recent combat experiences during Operation Iraqi Freedom and Operation Enduring Freedom, many wounded warriors would

not have survived these complex pelvic wounds. However, with the tremendous advances in early medical care in the combat zone, there has been an increased survival rate for our soldiers. Fortunately, military policies are changing. In January 2016, Secretary of Defense Ashton Carter pushed a pilot program for active-duty service members that would cover the cost of freezing sperm and eggs”. This answers the issue. Cryopreservation of sperm before deployment would potentially be better for those who are healthy before deployment rather than in an acute inflammatory state after injury, want it and can afford it, have it performed privately not through the military, and understand the need to use the sperm with assisted reproduction technology (ART) of some kind if used (again usually privately paid). This also potentially highlights another issue about the use of sperm posthumously, which was discussed by the authors briefly from a physiologic but not an ethical standpoint. This is beyond the scope of the paper as well as the present commentary, but represents another discussion based on living-will/informed-consent forms, even for subjects in this study, where the ability of subjects to consent to freeze their sperm is not known. The concept is already well known, and written consents are obtained by ART centers for all cases where gametes, male or female, are cryopreserved.

Although this was a small study with limited ART experience, the fact that this option is, sadly and happily, available for military couples that have sacrificed so much, and potentially their own families’ futures, is why this work deserves to be highlighted—medically as well as from a health policy standpoint. As stated by the authors, the research and views in their paper are their own and do not reflect the official policy or position of the Department of the Army, Department of Defense, or the U.S. Government. It is rewarding to see that the research was supported in part by the intramural research program of the Program in Reproductive and Adult Endocrinology, National Institute of Child Health and Development, a branch of the National Institutes of Health of the United States.

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