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COMMENTARY


Processing, selecting and ritualizing: ambivalent relationships to semen



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Abstract Two articles on human immunodeficiency virus (HIV) and reproduction have recently been published in *Reproductive BioMedicine Online*, both describing developments that increase reproductive options for HIV-positive men. A study of a semen-processing technique used at a South African hospital found that two out of 103 processed samples tested positive for HIV DNA and none for RNA, indicating 98.1% and 100% effectiveness, respectively. The authors recommend semen processing followed by viral validation of processed sperm samples when providing assisted reproduction treatment to couples with an HIV-positive male partner. The other article reviews developments such as semen processing, antiretroviral (ARV) therapy and pre-exposure prophylaxis (PrEP), which have all reduced the risk of HIV transmission in the context of reproduction. The author also notes, however, that research on fertility in the context of HIV focuses almost exclusively on heterosexual couples, and has overlooked the links between reproduction, HIV and homosexuality. This article analyses the ambivalent role of semen – associated with both reproduction and infection – and how reproductive medicine and health care in different ways seek to ‘get hold’ of sperm. By taking this analytic approach, sex and parenthood can be thought of as two different but related kinds of intimacy and kinship. 

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Introduction

Two articles recently published in *Reproductive BioMedicine Online* outline emerging development in assisted reproduction treatment for human immunodeficiency virus (HIV)-positive men. One article (Fourie et al., 2014) describes the efficacy of a technique to remove HIV from semen samples in a South African clinic. The other article (Pralat, 2014) takes a broader view, looking at how the areas of HIV and assisted reproduction techniques in biomedicine have affected each other, and how reproduction, HIV and homosexuality are historically linked. In particular, this article describes the ambivalent role of semen – associated with reproduction on one hand, and infection on the other – and how reproductive medicine and health care in different ways seek to ‘get hold’ of sperm.

Fertility, conception, and HIV

For some time now, there has been a strong focus on the prevention of mother-to-child transmission of HIV, with impressive successes. Comparatively less attention has been paid to fertility where the potential father is HIV positive. As Pralat (2014) outlines, ‘sperm washing’ techniques were developed in the late 1980s in Italy to reduce the risk of HIV transmission to children when using the sperm of HIV-positive men. The study by Fourie et al. (2014) from South Africa demonstrates how this technique has been further refined. The authors describe semen processing to remove HIV by discontinuous density gradient centrifugation in combination with the use of a polypropylene tube insert. The procedure, which is described in detail in the paper involves collection of semen samples, their decontamination through centrifugation, and cryopreservation of the purified sperm samples.

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Fourie et al. (2014) note, based on other studies, that even among men on antiretroviral (ARV) therapy with undetectable virus in blood plasma, semen samples can contain cell-free virus [HIV-RNA] or cell-associated virus (HIV-DNA), and the 'infectious potential of semen, even from men receiving (ARV therapy), should therefore not be underestimated.' In that study, 32.7% of men with undetectable blood plasma HIV-RNA viral load had HIV-RNA detected in their semen samples. The risk of HIV transmission, however, is not estimated. Also of note is that HIV may not be completely eliminated through decontamination techniques, and that re-contamination of the processed sperm can sometimes occur. Of the 103 processed samples, only two retested positive for HIV-DNA and none for HIV RNA, which indicates 98.1% and 100% effectiveness, respectively. This is impressive compared with a review of studies conducted before August 2005 using a range of techniques, in which up to 20% of samples in some studies tested positive for HIV after processing (WHO, 2007). The authors recommend semen processing followed by viral validation of processed sperm samples be carried out when providing assisted reproduction to couples in whom the male partner is HIV positive.

As noted by Fourie et al. (2014), viral validation of semen and sperm is expensive and may not be possible in some countries owing to a lack of pathology services. In such cases, where untested sperm is used, they recommend semen decontamination, followed by single sperm washing and fertilization through intra-cytoplasmic sperm injection (ICSI).

Also, although this technique can reduce the presence of HIV, there is the question of whether such interventions are necessary in the current era of ARV therapy. A landmark clinical trial demonstrated a 96% reduction in risk of HIV transmission to sexual partners in HIV discordant couples where the HIV-positive partner initiated ARV therapy (Cohen et al., 2011). Also, the more recent announcement of preliminary results from an observational study in Europe showed that there were no infections to date among couples in whom the HIV-positive partner has an undetectable viral load (Rodger et al., 2014). So HIV-positive men may also be able to have children with much reduced risk of infection through intercourse, especially if intercourse is limited to around the time of ovulation. As Pralat (2014) frames this question, the choice between sperm washing and (timed) intercourse 'is also about who should be left in charge of controlling the virus: the clinic, by manipulating infected semen in the laboratory, or the patient, by being fully compliant with their [ARV therapy] regimen?'

Also, the use of pre-exposure prophylaxis (PrEP) (Grant et al., 2010) has further reduced the risk of sexual transmission of HIV, including for sero-discordant couples seeking to conceive. The clinical practice guidelines issued by the Centers for Disease Control and Prevention recommend (with a moderate rating) that PrEP be discussed in these circumstances (US Public Health Service, 2014), and, if accepted, should be administered for a month before and after attempts to conceive. For couples who have no other fertility issues, PrEP may be an important tool in addition to continued ARV therapy (and viral suppression) of the male partner.

Selected sperm and non-heterosexual fatherhood

Pralat (2014) also reviews research on gay men's experiences of becoming parents through surrogacy. This literature highlights the importance these men attach to having a biogenetic connection, which is not enabled through some other routes to parenthood, such as adoption. I would argue, however, that biogenetic connection is not straightforward for these men, and some of these studies show the complex strategies men undertake, especially those in couples, to negotiate which partner's sperm will be used (Murphy, 2013). These men also make decisions about whether to reveal this information to others, and, if using both partners' sperm, whether they will choose to know which one is the biogenetic father.

The last decades have seen not just dramatic shifts in the visibility and acceptance of non-heterosexual fatherhood, as noted by Pralat (2014), but also increased parenthood desires and expectations among gay men (Murphy, 2013). Far from contributing to an increase in children living with non-heterosexual parents, however, Pralat (2014) draws on findings from research in the USA that shows the increase in openly non-heterosexual parenting is not even replacing the decrease in the number of lesbians and gay men coming out after having children in heterosexual relationships.

As Pralat (2014) points out, fertility in HIV treatment is almost always assumed to be an issue for heterosexual couples, or I would add, for HIV-positive women. He also correctly notes that little research has focused on the reproductive aspirations of HIV-positive gay men, either by the assisted reproduction route, or by the gay and lesbian parenting field. Although surveys of gay men in the USA indicate a high proportion of men who both desire and expect to become parents (Rabun and Oswald, 2009), I am not aware of any research that explores parenthood desire among HIV-positive gay men, although I know from my own research that there are HIV-positive men seeking to become parents in this way. Also, at least some surrogacy agencies in the USA actively target HIV-positive men as clients. So, although HIV-positive men are not sought out by sperm banks, despite a shortage of sperm (i.e. the 'real banking crisis'), and neither is gay men's sperm in general sought out, except in rare campaigns such one from Australia noted by Pralat (2014), gay men with HIV are also now able to become biogenetic parents through surrogacy.

Sex and the surplus of 'bad' semen

One of the most interesting and perceptive contributions by Pralat (2014) is in the final section of his paper, where he provides an analysis of bare-backing subcultures among gay men. The overall decrease in sex with condoms (both intentional and unintentional) suggests that, in some respects, gay men can be seen as living 'post-AIDS', or rather post-HIV, lives, even as paradoxically HIV infections in gay communities are returning to levels not seen since the 1990s.

Pralat (2014), however, notes that, although increasing attention has been given by research to 'bare-backing' subcultures in which the exchange of semen between gay men is highly prized and where bare-back sex meets important

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