

Ejaculation failure on the day of oocyte retrieval for IVF: Case report

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Unexpected ejaculation failure on the day of oocyte retrieval for IVF occurs once or twice a year in our Reproductive Medicine Unit, where ~500 oocyte retrievals are performed each year. Two clinical situations which occurred in 2001 are presented. In the first case, sperm were finally obtained by epididymal aspiration and resulted in the fertilization of five oocytes by ICSI. The transfer of two fresh embryos did not result in a pregnancy and the three supernumerary zygotes were cryopreserved. The male patient presented an anxio-depressive episode necessitating psychiatric hospitalization 1 week after the oocyte retrieval. In the second case, no sperm were obtained and the four oocytes were therefore lost. The couple went through a crisis in their relationship and tried another cycle of IVF 10 months later, after the preventive cryopreservation of a sperm sample. On the day of oocyte retrieval the patient was unable to produce a fresh sample but three zygotes were obtained through ICSI using the back-up cryopreserved sperm. Two embryos were transferred but no pregnancy ensued. The clinical decision-making processes for these two cases are described, as well as the measures employed to help prevent these unfortunate situations.

Key words: anejaculation/counselling/ejaculation failure/IVF/oocyte retrieval

Introduction

In our Reproductive Medicine Unit, an average of 500 oocyte retrievals for IVF are performed each year. Ejaculation failure on the day of oocyte retrieval has occurred in five cases between 1998 and 2002. To our knowledge, reports in the literature of such cases and their management are scarce. The techniques described for sperm recovery in this situation include the prescription of 50 mg of sildenafil after 1 h of attempted sperm collection (Tur-Kaspa *et al.*, 1999; Jannini *et al.*, 2004), fine-needle testicular sperm aspiration (Watkins *et al.*, 1996) or epididymal sperm aspiration (Lin *et al.*, 1999). If no sperm can be obtained, resorting to cryopreservation of the oocytes or to sperm donation would be the only possibilities to save the situation. However, oocyte cryopreservation is still at an experimental stage (Boldt *et al.*, 2003; Van der Elst, 2003) and the use of donor sperm as an emergency measure is unlawful in Switzerland where a 4 week delay for reflection is mandatory before any type of assisted procreation treatment.

In cases of recognized ejaculatory difficulties, the following methods of sperm recovery for IVF have been reported: sex therapy (Jannini *et al.*, 2002b; Elliott, 1993), vibrostimulation (Elliott, 1993; Saleh *et al.*, 2003), prostatic massage (Fahmy *et al.*, 1999; Hovav *et al.*, 2000), rectal probe electroejaculation (Ohl *et al.*, 2001; Hovav *et al.*, 2002), vasal

sperm aspiration (Chiang *et al.*, 2000), percutaneous epididymal sperm aspiration (Lin *et al.*, 1999), and testicular sperm aspiration (Watkins *et al.*, 1996; Belker *et al.*, 1998). These techniques are, however, generally not put forth as emergency measures.

In our team, possible difficulties associated with sperm procurement are discussed with the patients on several occasions: during the initial medical consultations, during the pre-IVF counselling session with the nurses and/or counsellors, and in the andrology laboratory when the patient produces the first sperm sample for diagnostic purposes. If a problem is detected, the possibility of cryopreserving sperm for back-up use is discussed and carried out before initiating the treatment.

In the two following cases the oocyte retrieval followed pituitary down-regulation and ovarian stimulation. Both men had previously been able to obtain sperm samples by masturbation for analyses and former treatment but they failed on the day of oocyte retrieval.

Case A

Both partners were 34 years old and had been trying to attain a pregnancy for >4 years. They described their sexual function as regular and harmonious. The first sperm analysis was normal and the couple had already attempted five intrauterine

inseminations with no success. There was no indication that obtaining a sperm sample was difficult during this period. The partners opted for IVF in their case of idiopathic infertility. They refused the offer of routine pre-IVF counselling. Two days before oocyte retrieval the couple contacted the Unit, concerned that sperm could not be obtained by masturbation as Mr A had been unable to attain an erection in recent weeks. He attributed this to his depressive state due to severe professional problems and had consulted a psychiatrist 2 weeks previously. He did not indicate the IVF treatment nor his impotence to the psychiatrist, and was prescribed antidepressant medication (fluoxetine, 20 mg per day). At first, the IVF physician and a counsellor attempted to attenuate his stress by offering a round-the-clock laboratory service ready to accept a sperm sample at any time. Non-toxic condoms and a prescription of sildenafil (50 mg to be taken 1 h before intercourse) were also given. The IVF physician, the biologist, the urologist and the counsellor discussed other possibilities for retrieving sperm, and epididymal aspiration was retained in case of failure. Taking into account the psychological fragility of the patient and the high stress level, intracavernosal injection was not indicated. The following day on announcing the failure of the sildenafil attempt, Mr A asked the IVF physician which other methods could be employed to obtain his sperm. After extensive explanations he requested the epididymal aspiration. This was successfully performed under general anaesthesia in parallel to the oocyte retrieval. Fifteen mature oocytes were retrieved and were all injected using ICSI according to our protocol (Wisard *et al.*, 1999). Oocytes appeared very fragile and nine of them degenerated rapidly upon injection with no technical explanation. Five oocytes were fertilized and two embryos were transferred 48 h after oocyte retrieval. The three remaining zygotes were frozen for future use. Four days after transfer, Mrs A was hospitalized with acute abdominal pain and investigated for possible ovarian hyperstimulation syndrome or ovarian torsion. Neither diagnosis was confirmed and, on returning home, her husband presented severe anxiety and insomnia. He was admitted to a psychiatric hospital the next day for an acute anxiety-depressive disorder and was treated there for 3 months. He was able to resume his professional activities after 6 months. The couple waited a full year before considering further treatment. They then requested a cycle to transfer one frozen-thawed embryo, wishing to avoid the potential stress of a twin pregnancy. No pregnancy was attained and the couple entered another period of reflection.

Case B

Mrs B was aged 33 years old and her husband 48 years. The couple had been trying to attain a pregnancy for 2 years. Investigations showed an oligoteratozoospermia ($1.5\text{--}3.0 \times 10^6$ sperm/ml) necessitating ICSI. No specific dysfunction was found on the woman's side. It was noted that the husband required >30 min to obtain his first sperm sample. In a discussion with the laboratory technician, he attributed this to 'first time anxiety'. As he did not anticipate major

difficulties for the next sperm collection, no sperm were cryopreserved. The couple refused the routine pre-IVF counselling session. On the day of oocyte retrieval, four mature oocytes were retrieved and the husband was unable to produce a sperm sample. In a first discussion with the laboratory staff, reassuring information was given as well as a few hours rest before another try, a non-toxic condom, and a visit to his wife in a private hospital room. In the following discussions, the aggravation of the anxiety emanating from both partners developed into a marital conflict and the surgical retrieval of sperm was not proposed. In the evening, it was concluded that the oocytes were lost to use and the couple departed on bad terms with each other. After 10 months they came back with a new request for IVF. The physician proposed a counselling session to evaluate the situation of the couple but the partners refused. They had resumed a more serene relationship and felt more comfortable together, also in their sexuality. The husband accepted to cryopreserve a back-up sperm sample to be used if necessary. The stimulated cycle allowed for the retrieval of four mature oocytes but a fresh sperm sample could still not be obtained by masturbation. The four oocytes were injected using the cryopreserved sperm sample and three were fertilized. Two embryos were transferred and the third was frozen for future use. The implantation failed and the couple decided to take a break before thinking of further treatment.

Discussion

Two cases of stimulated IVF cycles in which ejaculation failure occurred on the day of oocyte retrieval are described. This is a rare occurrence in men who previously could obtain a sperm sample by masturbation and it raises questions as to which clinical attitude is appropriate in this acute situation.

In case A, the patient was taking fluoxetine (20 mg per day) and therefore the origin of his ejaculatory failure should be considered mixed: psychogenic and iatrogenic (Angst, 1998; Jannini *et al.*, 2002a). Clearly, the option to discontinue antidepressant medication to diminish the possible negative effect on ejaculation must be appraised in each specific situation.

If a patient has difficulty in producing a sperm sample by masturbation, the following non-invasive methods for facilitating sperm procurement can be proposed: help from the partner, sexual intercourse with a non-toxic condom (Elliott, 1993), the prescription of sildenafil (Tur-Kaspa *et al.*, 1999; Jannini *et al.*, 2004), penile vibration (Elliott, 1993; Saleh *et al.*, 2003) and the viewing of a sexually stimulating video (van Roijen *et al.*, 1996). For patients having failed to produce a sample after a masturbation trial of over an hour, Tur-Kaspa *et al.* (1999) reported the obtainment of sperm samples when they prescribed 50 mg sildenafil before a new attempt. Saleh *et al.* (2003) collected data from 405 men with normal sexual functions who obtained a first sperm sample without difficulty but who were informed that the analysis of their semen was abnormal. When a second sample was requested 2 weeks later, 46/405 (11%) failed to obtain sperm by masturbation. The application of a mechanical

vibration to the glans penis with a vibrator allowed nine of these 46 men (20%) to obtain a sample.

The invasive methods for obtaining sperm include vigorous massage of the prostate, rectal probe electroejaculation and surgical aspiration. These are generally employed after an attempt of sexual therapy and extensive explanations. One could question if they should also be applied in acute situations, as they often require anaesthetic procedures and operating room facilities. The ejaculation failure could furthermore be symptomatic of a repressed ambivalence concerning the wish for a child, a conflict within the couple, or an underlying psychiatric disorder. If so, invasive techniques should not be employed and psychological assistance to identify and work through the problem should be prescribed (Boivin and Kantenich, 2002).

Couples A and B had refused pre-IVF counselling, whereas 80% of the couples in our Unit accept this preventive and supportive measure (Emery *et al.*, 2003). Both couples later acknowledged having had active difficulties in their marital relationship prior to the IVF, but had decided to present a unified front to the team in order to focus on the desired pregnancy. It is doubtful that mandatory counselling could have helped them to work out their marital problems (Hammer-Burns and Covington, 1999; Boivin and Kantenich, 2002; Strauss, 2002), but it may have led to discussing sperm procurement problems.

In conclusion, ejaculation failure on the day of oocyte retrieval is a rare event, occurring in about one case in 500 retrievals in our Unit. If non-invasive methods to obtain a sperm sample fail, invasive techniques should be used with caution and within the scope of each team's experience. The cryopreservation of oocytes is unsuitable as it is still at an experimental stage, and resorting to donor sperm requires more consideration by the partners and cannot be carried out at such short notice. The main implements of prevention are the detection of sperm procurement problems before IVF, followed by an offer for psychological assistance and a firm recommendation for sperm cryopreservation before treatment.

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Submitted on February 19, 2004; accepted on June 3, 2004