CASE REPORT

Successful treatment of idiopathic anejaculation with electroejaculation after microsurgical vas aspiration

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This case report describes a couple suffering from infertility secondary to psychogenic anejaculation, which was refractory to all conservative treatment modalities. A first trial of microsurgical vas aspiration in combination with in-vitro fertilization (IVF) resulted in a pregnancy. After 2 years, three more trials of microsurgical vas aspiration in combination with either IVF or subzonal insemination (SUZI) resulted in embryo transfer without pregnancy. Finally, after 3 years, spermatozoa obtained by rectal probe stimulation under general anaesthesia were cryopreserved. A second intracytoplasmic sperm injection (ICSI) procedure using these cryopreserved spermatozoa also resulted in a second pregnancy. Although sperm concentration was in the normal range, in all samples obtained by either rectal probe electrostimulation or microsurgical vas aspiration, motility was <30% in all but two samples.

Key words: electroejaculation/idiopathic anejaculation/microsurgical vas aspiration

Introduction

Different treatment modalities such as psychotherapy, sympathomimetic drugs, androgens and penile vibratory stimulation have been proposed in order to obtain an ejaculate in patients suffering from idiopathic anejaculation (Murphy and Lipshultz, 1987). Unfortunately, a lot of these patients are refractory to most of these non-invasive treatment modalities. Therefore, a couple suffering from idiopathic anejaculation is often referred to a fertility centre for more invasive treatment procedures. Both electroejaculation (Denil et al., 1996; Hultling et al., 1997) and microsurgical vas aspiration (Sperm Microaspiration Retrieval Techniques Study Group, 1994; Belker et al., 1994; Schoysman et al., 1994) were recently shown to be successful when combined with assisted reproductive techniques. Moreover, it is well established that intracytoplasmic sperm injection (ICSI) is more effective than in-vitro fertilization (IVF), at least in combination with rectal probe ejaculation in the treatment of infertile spinal cord-injured men (Hultling et al., 1997). This case report presents a unique couple resistant to all available non-invasive treatment options who were first successfully treated in a fertility centre with microsurgical vas aspiration in combination with IVF and were later successfully treated in another fertility centre with electroejaculation in combination with ICSI.

Case report

A 31 year old man consulted a first fertility clinic together with his 25 year old wife in 1989. At that time, they were suffering from 2 years of primary infertility secondary to idiopathic anejaculation. The man had occasional nocturnal emissions but never experienced ejaculation during either coitus or masturbation. His clinical and hormonal investigation was entirely normal.

A trial of penile vibratory stimulation was offered as first line treatment but this treatment resulted only in psychogenic inhibition of erections and was therefore quickly stopped. His family doctor then prescribed weekly testosterone enanthate injections at a dose of 250 mg i.m. for 6 weeks. However, this treatment only resulted in a greater sexual drive. The patient was not able to ejaculate into a seminal pouch during coitus. A trial with an s.c. injection of physostigmine induced only side-effects such as orthostatic hypotension and nausea.

The following drug that was prescribed with the purpose to induce ejaculations was oral imipramine in a daily dose of up to 75 mg. Because this drug also failed, he was finally referred to a psychiatrist and sexologist. However, the couple returned to the fertility centre because intensive psychotherapy, sex therapy and even hypnotherapy turned out to be unsuccessful. Because electroejaculation was not available at that time in the first fertility centre, he was referred to another fertility centre.

In this centre, microsurgical vas aspiration in combination with IVF was immediately offered as an option. During the first procedure in 1991, the left vas deferens was aspirated and 25 x 10⁶ spermatozoa/ml were obtained with 70% motility (20% grade A motility). Three oocytes were fertilized in an IVF procedure. Two 4-cell embryos were transferred, his wife became pregnant and delivered a healthy child at the beginning of 1992.

In 1993, the couple returned to the same fertility centre for a second child. During 1993, three other microsurgical procedures were tried. During the first two procedures, the left vas deferens was aspirated and respectively 16 and 32 x 10⁶ spermatozoa/ml with respectively 25 (grade A 5%) and 40%...
(grade A 10%) motility were obtained. During the first procedure, four oocytes were fertilized and two 4-cell embryos transferred. In the second procedure, two oocytes were fertilized and again two 4-cell embryos were transferred. No pregnancy resulted. During a final microsurgical vas deferens aspiration procedure, both the patient’s left and right vas deferens were aspirated. At the left site, $20 \times 10^6$ spermatozoa with only 10% (grade A 0%) motility were obtained. No spermatozoa were obtained at the right side. Four oocytes were fertilized in an IVF procedure in combination with subzonal injection (SUZI). Despite a final transfer of one 4-cell and one 3-cell embryo, no pregnancy resulted.

Finally, the couple returned to the first fertility centre at the end of 1995 for a second opinion. At this centre, they offered rectal probe electroejaculation under general anaesthesia as described by Kiekens et al. (1996). At the beginning of 1996, two procedures were performed. In the first procedure, an ejaculate of 3.2 ml with a concentration of $36 \times 10^6$ spermatozoa/ml and with a poor motility of 18% (1% grade A) was obtained. The second procedure resulted in an ejaculate of 2.1 ml with a concentration of $55 \times 10^6$ spermatozoa/ml again with only 18% motility (4% grade A). After Percoll gradient centrifugation, both ejaculates were cryopreserved.

During an IVF procedure in combination with ICSI, one oocyte was fertilized, and one embryo was transferred. During a second ICSI cycle four oocytes were fertilized. A transfer of two 2-cell and one 4-cell embryo resulted in a second pregnancy. A summary of these different procedures are given in Table 1.

### Table 1. Schematic overview of consecutive attempts with microsurgical vas aspiration (MSVD) and rectal probe electroejaculation (EE) of a single couple suffering from idiopathic anejaculation in combination with either in-vitro fertilization (IVF), subzonal insemination (SUZI) and intracytoplasmic sperm injection (ICSI) in two different fertility centres. All procedures resulted in transfer of embryos. Finally, two pregnancies resulted. For more details, see text.

<table>
<thead>
<tr>
<th>Date</th>
<th>Procedure</th>
<th>Concentration ($10^6$/ml)</th>
<th>Motility (% grade A)</th>
<th>Transfer</th>
<th>Pregnancy</th>
</tr>
</thead>
<tbody>
<tr>
<td>10/05/91</td>
<td>left MSVD</td>
<td>25</td>
<td>70 (25)</td>
<td>two 4-cell embryos</td>
<td>yes</td>
</tr>
<tr>
<td>15/05/93</td>
<td>left MSVD</td>
<td>16</td>
<td>25(10)</td>
<td>two 4-cell embryos</td>
<td>no</td>
</tr>
<tr>
<td>28/08/93</td>
<td>left MSVD</td>
<td>32</td>
<td>40(20)</td>
<td>two 4-cell embryos</td>
<td>no</td>
</tr>
<tr>
<td>20/11/93</td>
<td>left MSVD</td>
<td>20</td>
<td>10(0)</td>
<td>one 3-cell embryo</td>
<td>no</td>
</tr>
<tr>
<td></td>
<td>right MSVD</td>
<td>0</td>
<td></td>
<td>one 4-cell embryo</td>
<td>no</td>
</tr>
<tr>
<td>08/01/96</td>
<td>EE</td>
<td>36</td>
<td>18(1)</td>
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<td>no</td>
</tr>
<tr>
<td>26/02/93</td>
<td>EE</td>
<td>55</td>
<td>18(4)</td>
<td>one 2-cell embryo</td>
<td>yes</td>
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<tr>
<td>21/06/96</td>
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</tr>
<tr>
<td>18/09/96</td>
<td>ICSI</td>
<td></td>
<td></td>
<td>two 4-cell embryos</td>
<td>yes</td>
</tr>
</tbody>
</table>

### Discussion

This unique case history of a patient suffering from idiopathic anejaculation refractory to all other treatment modalities for anejaculation shows that it was possible to successfully obtain spermatozoa with electroejaculation years after repeated successful microsurgical aspiration of both vas deferentia. Sperm concentration was in the normal range both in the fluid aspirated of the vas deferens but also in the ejaculates obtained with rectal probe electroejaculation. Sperm motility, however, was <30% in the two ejaculates after electroejaculation and in two of the four aspirates of the vas deferens. The poor sperm motility in the ejaculates obtained by electroejaculation may be related to the earlier repeated aspirations of the vas deferens. However, it has been reported that sperm motility is frequently poor in ejaculates obtained with electroejaculation without prior vas deferens aspiration both in spinal cord-injured patients (Denil et al., 1992) and in patients with idiopathic anejaculation (Kiekens et al., 1996). Despite this poor sperm motility, sufficient spermatozoa were available for cryopreservation and repeated elective use in an IVF programme in combination with ICSI. Recently, similar cases were successfully treated with ICSI of thawed spermatozoa obtained by earlier rectal probe electroejaculation in our centre. Contrary to microsurgical vas aspiration, rectal probe electroejaculation creates the opportunity to try multiple IVF-ICSI procedures, without the need for surgical (re)intervention. Therefore, elective rectal probe electroejaculation followed by cryopreservation of the ejaculate is now the treatment of choice in patients with idiopathic anejaculation refractory to penile vibratory stimulation. Vasal aspiration should probably be only performed when microsurgical expertise is available to avoid the risk of iatrogenic obstruction.

### References


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