Involuntary childless couples in family practice
Recommendations for patient management

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An unfulfilled wish for a child is a major life-event which is not easy to cope with. Involuntarily childless patients often mention psychological and social problems. General practitioners may realize the necessity to help these patients but may find it difficult to identify them. Patients signal their need for help, which they do not find from their friends or families and so they turn to their family doctors who are therefore the first advisers on medical solutions for involuntary childlessness. Despite this important role in infertility management, they often do not seem to be prepared for it. Especially in countries where the treatment of infertility is viewed as a specialist domain, family physicians may have the feeling that they are not able to help in the care of infertile couples. It should be recognized, however, that family physicians do have an important role in supporting the couple during the treatment, informing them about risks and chances of treatment and supporting them if treatment fails or is not possible.

Introduction

Family physicians, in Europe usually called general practitioners (GPs), are important for involuntary childless couples for several reasons (1):

- The family physician usually represents the first contact between those looking for help and specialists from the professional health care system. This qualifies the family physician as ‘gatekeeper’ ensuring fast and adequate access to specialized medical services (2).
- Many family doctors not only treat individual patients but also care for other family members simultaneously over a long period of time thus fostering openness and trust in the doctor-patient relationship and gaining insight into the patient’s family situation and value system (3).
- Very often patients feel “lost” in reproductive medical clinics and specialized practices and complain about lack of information and care (4). Some clinics offer qualified psychological care; however, patients usually have a negative or skeptical view of such offers. In contrast, the family physician is a well-known and accepted partner.
- In addition to the biological/medical causes, mental and social factors as well as
conflicts in the relationship or financial aspects can be significant for an unfulfilled wish for a child. Some couples cannot undergo medical treatment or, for instance, reject artificial reproductive technologies (ART). These patients who (must) remain permanently childless are left out of the prospects of reproductive medicine. Their needs for information and help can be very high and are best met by their family doctor.

Whether the family physician fulfills these different tasks in the contact with childless people depends on his or her knowledge of infertility and its treatment options, the readiness to care for these patients, and the patient's or couple's expectations toward their family doctor.

In the following, we provide some of the crucial information family physicians should have when caring for childless people:

1. The definition of infertility.
2. Findings on the psychological responses to involuntary childlessness.
3. Basic diagnostic and therapeutic options in male and female infertility.
4. A short overview on artificial reproductive technologies.
5. Patientsí expectations toward their doctor.

1. Definition

Infertility, whether male or female, is defined by the World Health Organization (WHO) as the inability of a couple to achieve conception or bring a pregnancy to term after a year or more of regular, unprotected sexual intercourse. Infertility refers to any problems in conception; whereas sterility suggests a definite biological cause of a couple’s childlessness. Some authors prefer the terms subfecundity or subfertility to emphasize that a woman can sometimes adapt to an intangible and indefinite loss (a child that never was) for which mourning rituals and social support (a child that never was) for which mourning rituals and social support, and to a breakdown in communication between the couple. Guilty thoughts about infertility often relate to feelings of being punished by higher powers followed by grief which is seen to be the most compelling feeling experienced, especially in cases of permanent infertility. It involves the loss of a life goal, of a potential child, the loss of genetic continuity and the loss of the pregnancy experience itself. The impact of infertility can be understood as a mourning process. Infertile people have to adapt to an intangible and indefinite loss (a child that never was) for which mourning rituals and social support systems are usually not available.

Reviewing descriptive studies on infertility, Straus (8) concluded that about 10-50% of all infertile patients report psychological distress, manifested mainly in functional somatic symptoms, depressive reactions, emotional instability, diminished self-confidence, sexual problems and conflicts arising from their desire for a child.

2. Psychological responses to infertility

Infertile couples pass through quite similar stages of reactions and feelings (7). After the initial shock and surprise many couples deny the existence of their infertility. Anger is a later response to the helplessness and loss of control often experienced during the investigation and treatment of infertility. Feelings of failure, embarrassment, shame, and stigmatization may lead to social isolation, i.e. a withdrawal from potential sources of social support, and to a breakdown in communication between the couple. Guilty thoughts about infertility often relate to feelings of being punished by higher powers followed by grief which is seen to be the most compelling feeling experienced, especially in cases of permanent infertility. It involves the loss of a life goal, of a potential child, the loss of genetic continuity and the loss of the pregnancy experience itself. The impact of infertility can be understood as a mourning process. Infertile people have to adapt to an intangible and indefinite loss (a child that never was) for which mourning rituals and social support systems are usually not available.

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3. Basic diagnostic and therapeutic options in male and female infertility

A variety of procedures can be used to diagnose the cause of infertility in a couple (9). These range from simple blood tests to more complicated analytical methods. A careful history and physical examination can identify symptoms or signs suggesting a specific cause for infertility and thereby help to focus subsequent diagnostic evaluation on the factor(s) most likely responsible. In addition to the cause itself, other factors - such as the age of the woman or problems shared by both partners – might also influence the choice of treatment.

3.1 Male infertility

Male infertility is not a disease but rather a sign or a symptom of an underlying disorder. Most frequently this underlying disorder is an abnormality of the testes or of the spermatogenesis. Reasons may be reversible, irreversible or idiopathic. Reversible causes include varicocele, obstruction, ejaculatory dysfunction, endocrine disorders, anti-sperm antibodies and infections. Irreversible etiologies include chromosomal abnormalities, cryptorchism, viral orchitis, and torsion. In a large number of patients (25-30%), it is not possible to determine the cause of the problem. So, in about half of the males, the reason for male infertility is unknown or untreatable while for the other half some treatment might be successful.

Any management of the treatment of male infertility should include all efforts to eliminate or, at least, to minimize endogenous as well as exogenous factors which negatively influence fertility. In the first place, male fertility treatment should enhance the fertility potential and allow the couple to conceive on their own. If the cause of male infertility is reversible, specific therapies may help. However, in many cases no specific cause can be found but empirical treatments are still used. Most controlled clinical trials have
demonstrated that they are not beneficial. Sperm defects or disorders are the most common causes of male infertility. The vast majority of cases of male infertility are due to a low sperm count. Often poor motility and a high rate of abnormal sperm are associated with a low sperm count. When no sperm whatever is found in the semen, testicular failure or failure to ejaculate may be the cause. Testicular failure may be the result of an injury, a late complication of mumps, or damage to the blood supply to the testicle. Alternatively, the problem may have a hormonal cause, with the pituitary gland failing to stimulate the testes to produce sperm. The inability of the testes to produce sperm, despite hormonal stimulation, can be caused by undescended testes, cellular defects within the testes and congenital chromosomal abnormalities such as Klinefelter's syndrome. Diagnostic procedures of the male always starts with an andrological inspection. The patient's habitus as well as the pattern of virilization should be noted because changes could point to genetic abnormalities. The testes should be palpated for consistency and size because a reduction of seminiferous tubules and germinal elements occurs as testicular atrophy. A decreased testicular size correlates with impaired spermatogenesis. Semen analysis remains the most important examination of the laboratory evaluation. A sperm density of 20 mil/ml is the minimal requirement. The motility of sperm is highly correlated with fertility; normally at least 25 % should show a forward progressive motility with high speed and 30 % with moderate speed. Increased FSH levels normally indicate an irreversible disorder of spermatogenesis for which no treatment is possible. Hypothalamic or pituitary dysfunction leads to low peripheral levels of testosterone and an absence of spermatogenesis. Chromosomal analyses are indicated in patients whose history and physical findings suggest a genetic background.

3.2 Female infertility

The main causes of female infertility are ovarian dysfunctions and disorders of the tubes and uterus (9, 10). Frequently two or even all three causes can be found in one patient. Disorders of the menstrual cycle are the first indications of ovarian dysfunctions. Most women with ovulatory disorders, however, seem to have a normal menstrual cycle, even though they are suffering from anovulation or corpus luteum deficiency. Most important for the diagnosis of ovulatory disorders are the basal body temperature (BBT) and results of hormone analyses (FSH, LH, prolactin, estradiol, testosterone, DHEAS, TSH). High serum levels of FSH and LH very often result in a lack of oocytes. Nearly 1% of women of reproductive age suffer from this kind of eclinacterium praecoxi. Because a so-called intermittent ovarian failure may show the same hormonal constellation, hormone diagnosis should be repeated several times to confirm the original diagnosis. If the cycles are ovulatory and the andrological prerequisites are normal, the tubal functions must be examined. Today the gold standard for the examination for tubal patency is ultrasound tubal investigation, by means of transvaginal hysterosalpingocontrast sonography (HSCS). Malfunctions of the uterus, which are of congenital or exogenous origin, negatively influence implantation or early embryonic development.

3.3 Treatment options

Several treatment options are offered to couples depending on the type of infertility that has been diagnosed. Treatment options for male infertility include the administration of drugs and surgery. However, they have proved to be successful only for specific types of male infertility. In a large number of cases the reason why men have fertility problems remains unexplained and the treatment methods applied are empirical and therefore useless. The vast majority of female patients can be successfully treated by the administration of hormones. Surgery can also be a means to repair damage to the reproductive organs, such as those caused by endometriosis and infectious diseases. Beside these therapeutic options, which can sometimes also be offered by GPs, a large group of patients require more complex medical intervention. Assisted reproductive technologies refer to several different methods designed to overcome barriers to natural fertilization such as anatomical problems.

4. Artificial reproductive technologies (ART)

Despite long lasting attempts to cure infertility by means of cycle monitoring, operations and medical drugs including hormonal treatment, results were poor. Before 1980, infertility due to bad sperm quality was treated by performing insemination with the patients own or donor sperm. This first ART was followed by in vitro fertilization (IVF) in the early eighties and intracytoplasmic sperm injection (ICSI) in the early nineties (11). With IVF, a therapy for infertile women with tubal sterility has been developed which shifts the place of fertilization from the fallopian tube to the test tube. Couples must meet certain minimum requirements which include that the female has an uterus and regular ovulations while the husband must have normal sperm quality. The success rate of this technique depends significantly on the age of the female and on the number and developmental stage of transferred embryos. ICSI has been developed for those couples in which the male suffers from severe andrological pathologies or has a complete or non-reconstructable obstruction of the ductal system. Because the only factor limiting ICSI is the viability of the spermatozoon, ICSI can be performed if the patient suffers from severe oligozoospermia, azoospermia, dysfunction of ejaculation, dysfunction of the acrosome, teratozoospermia and on
patients with testicular cancer. ICSI only requires a living sperm cell which might be immobile, tailless or morphologically abnormal and which may or may not have undergone the acrosome reaction. When ICSI is used there is no longer a correlation between the severity of the andrological subfertility and fertilization and pregnancy rates. In absolutely azoospermic men, a testicular biopsy allows retrieval of spermatozoa directly from the testes which can be stored in a frozen state and serve as back-up to be used for any number of future ICSI procedures without the husband having to undergo further invasive surgery or aspirations.

5. The role of family physicians in infertility management

Many infertile couples never seek professional help. Some may believe their condition is caused by somatic disorders, whereas others may not be sure if they really desire a child (12). In any case, most patients would like their doctor to initiate a discussion about their childlessness during consultation (13).

5.1 Screening and referral

By regular collection of family medically-oriented case histories, family physicians could discover possible fertility disorders early and indicate an appropriate referral and medical diagnosis so that professional help could be obtained in time. Family doctors are trained to be screeners who send patients to the right specialist or to make sure that there are no other causes of infertility which are easily correctable. If no medical problems are found, the couple is encouraged to keep trying for another three to six months. During this time, the male gives two semen samples for sperm analysis. Furthermore the couple is informed about the optimal time for sexual activity. If conception still does not occur, the family physician refers the couple to an infertility specialist or, depending on his diagnosis, to a gynaecologist, an urologist, an endocrinologist and/or a psychiatrist.

Even in health systems where family doctors do not practice gynaecology, a basic diagnosis including the patients history (Table 1) may disclose causes of infertility and helps the family physician to decide whether the patient requires an early referral or can be treated in family practice.

5.2 Exploring the couple’s attitudes and motives

Family physicians may assist infertile couples to become aware of their motives for having a child. In cases involving a presently unfulfilled desire for a child, questions about the attitudes and motives of the patients, as well as the (suspected) causes of the childlessness, are highly useful, preferably in a general discussion with both partners. Key questions could be:

* How long have you wished to have a child?
* Do you have any idea why you are childless?
* What physical and psychological problems do you have?
* Which one of you suffers most because of childlessness?

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<tr>
<th>Table 1 - Initial evaluation of the infertile couple</th>
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<tbody>
<tr>
<td><strong>Male</strong></td>
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<tr>
<td>Urogenital illness/operations</td>
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<tr>
<td>Problems in erection and ejaculation</td>
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<tr>
<td>Indications of genetic factors</td>
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<tr>
<td><strong>Female</strong></td>
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<tr>
<td>Irregularities in her menstrual cycle</td>
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<tr>
<td>Abdominal operations/illness</td>
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<tr>
<td>Suspected pelvic inflammations</td>
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<tr>
<td>German measles – antibody status</td>
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<tr>
<td><strong>Further evaluations</strong></td>
</tr>
<tr>
<td>Sexually transmitted diseases</td>
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<tr>
<td>Knowledge of fertile days</td>
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<tr>
<td>Psychosomatic symptoms</td>
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<td>Prior psychiatric or psychotherapeutic treatments</td>
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5.3 Guiding the couple through fertility clinics

If available, family physicians may also provide couples with information about the quality of licensed clinics, including the number of patients treated, treatment options, live birth rates as well as addresses of counseling and patient support groups. Such information is provided, for example, by the HFEA in Great Britain (14, 15) and by different internet portals (e.g., Ferti.Net [16]). A close liaison between the family physician and the fertility clinic protects patients from getting lost in the technological maze that modern clinics sometimes generate. Such cooperation may also include delegating those treatments that can easily be administered by the family physician. This may especially help couples who have difficulties with tight schedules at the clinics.

5.4 Informing the patient about success and risks of infertility treatment

Both diagnosis and treatment of infertility can be very stressful physically and emotionally. This is especially true because the outcome can never be predicted. Therefore, family physicians should inform patients not only about chances of success but also about possible risks and side effects of ART (Table 2). Providing a sound, neutral explanation of possibilities and limits of ART as well as its latest development is a very important task for the family doctor.

Table 2 - Risks and side effects of artificial reproductive technologies (ART)

- Hyperstimulation and multiple births as a consequence of hormonal stimulation (especially with gonadotrophins).
- Increased rate of malformations, premature births, infant mortality, and long- term morbidity because of multiple pregnancies.
- Risk of malformations and genetic aberrations because of ICSI (controversly discussed).
- Success of ART (baby-take-home rate) in IVF or ICSI not higher than around 20 % (i.e., at most 20 live births in 100 treatment cycles).

5.5 Protecting the patient against premature interventions

Today most inquiries from involuntarily childless patients are about IVF and ICSI. Infants conceived by these techniques have a slightly higher risk of a major birth defect as naturally conceived infants. ARTs also account for a disproportionate number of low-birth-weight infants. At present, it is not known whether these risks are due to the underlying reasons of infertility or to the procedures used to overcome them (17, 18).

A real concern is that the increased marketing of fertility services will lead to their use by couples who, in previous years, would have waited longer before seeking help. We can expect that such marketing will attract at least some couples who would have conceived without ART (19). The family physician is the appropriate person to discuss the pros and cons of waiting or getting treatment with the couple.

5.6 Supporting the couple

The unfulfilled desire for a child places strains on the couple’s relationship and sexuality. Family doctors can contribute to the couples understanding of their infertility. As couples often do not have experienced advisors available to them, even an offer of a consultation or talk from the family physician can alleviate the strain. Above all, this applies to couples who can not communicate with each other effectively and to women who are solely blamed for the infertility. Joint and/or individual discussions with the family doctor can be the first step in becoming aware of relationship conflicts.

5.7 Continuous care

When infertility remains for a long period, the family doctor can be an ongoing dialogue partner. In this way, he or she can at least try to prevent possible secondary diseases resulting from the mental or social stress of not having children. In an open discussion with the couple this means:

- Addressing hopes and ambivalence connected with the desired child,
- Examining intellectually the consequences of both successful and unsuccessful treatments, and
- Considering alternatives.

Even if most couples who remain childless learn to come to terms with their situation and develop alternative perspectives, it may be helpful for them if their family physician supports this learning process. In some patients, however, the wish for a child is so strong and life-defining that they suffer from their childlessness not only during their reproductive years but also when they realize that they will never become grandparents in a biological sense. In contrast to clinical or specialized practice, talking with these patients about their suffering, at least from time to time, should be included in the family physicians consultations (1).
5.8 Situation of men

According to Hjelmstedt et al. (20) only one out of seven women asked had not spoken with anyone about her problem of infertility; for men, it was one out of two. As men, in contrast to women, often have no one to talk to, an offer of a consultation or talk from the family physician can alleviate the strain caused by involuntary childlessness.

REFERENCES


