

Erectile Dysfunction and Male Infertility

Medical Background and Halachic Aspects

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Special Sensitivity

Medical knowledge about male infertility and medical technology for treating the problem has lagged many years behind the impressive developments of knowledge and treatment of female infertility. However we have recently witnessed impressive developments in the treatment of male infertility, developments that are liable to make notable changes in the recommended solutions for couples lacking children. These developments, which are still at an early stage, have both medical and *halachic* implications. It should be remembered that medical treatment of male infertility has sensitive aspects from the point of view of *halacha* in two respects:

- (a) There is at times a connection between tests and treatment and the ban on wasting sperm.
- (b) There may be a connection between the tests and treatment and the bans on castration and sterilization.

The fundamentals of the *halachic* ban on wasting sperm are in general known, and will be discussed briefly below. However, the ban on the wasteful emission of sperm also has legal aspects, deeply sensitive aspects, and probably also significant educational aspects. The emission of sperm for the purpose of tests or medical treatment therefore involves practical decisions of *halacha*.

Less well known are the fundamentals of *halacha* with respect to castration, sterilization and *petsua dakka*. We have here three distinct laws, all of Torah authority:¹

¹ And not merely rabbinic laws.

- (i) There is a ban on sterilizing (by castration or other means) of any male human or male animal.²
- (ii) A *petsua dakka* is not allowed “to enter God’s congregation,” *i.e.* to marry a Jewess.³
- (iii) It is forbidden to disqualify a person from marrying by rendering him a *petsua dakka*.⁴

What is meant by *petsua dakka*? We may take as a starting definition that it describes a person who has been rendered sterile as a result of some sort of injury, not necessarily caused by another person. The third law then appears to merely duplicate the first in certain cases. However, as we shall see, this definition, though approximate, is not accurate. According to some opinions, a person who has been sterilized is not necessarily, in all cases, a *petsua dakka*; and a person can become a *petsua dakka* without becoming sterile. Thus while (i) and (iii) undoubtedly overlap, each can apply without the other. This has a bearing on our discussion.

Any surgical operation that is liable to interfere with a man's reproductive organs certainly has implications which may well be affected by the laws mentioned, and can raise *halachic* problems that are far from simple.

In order to understand the laws of *petsua dakka* it is first necessary to understand something of the anatomy of the sperm path.

² Leviticus 22:24. The verse is not too clear and appears to refer only to animals and only in the Land of Israel, but is interpreted (not extended) by the rabbis to refer to sterilizing any male human or animal anywhere in the world, not necessarily by surgical castration. See Talmud *Shabbat* 101b, *Chagiga* 14b; *Shulchan Aruch, Even Ha'ezer* 5:11-12; *Be'ur Hagra* *ibid.* §25; *Nishmat Avraham* *ibid.* §11.

³ Deuteronomy 23:2. (See *Shulchan Aruch, Even Ha'ezer* 5:1) Again, this only applies to a male. The Torah refers to *petsua dakka* and *kerot shofechah*; we will use the former term to include the latter, as the technical difference between them is not relevant here.

⁴ This is not a specific law in the Torah, but a specific instance of a general law. Performing a physical act that disqualifies a person from marrying a Jewess constitutes in itself an injury, quite independent of any physical injury that may be caused. Causing a person injury, even such as this, is forbidden (See Rabbenu Yonah, *Pirkei Avot* 1:1).

Anatomy of the Sperm Path as a Basis for the Laws of *Petsua Dakka*

Sperm cells are created in the testes,⁵ collected in a system of fine tubes and passed to the epididymis. From here they pass through the vas deferens, a tube that leads the cells from the scrotum, via the inguinal canal, into the pelvic cavity. The vas deferens pass through the abdominal cavity (from both sides) via the prostate, and join the urethra (the duct for urine) between the bladder and the beginning of the penis. The doctor can generally feel the beginning of the vasa in the scrotum, but where it is difficult to feel this with a physical examination, a more comprehensive search of the state of the vasa is required.

Shulchan Aruch defines *petsua dakka* as one whose testes are injured.⁶ This implies that any traumatic striking of the testes can produce a legal status of *petsua dakka*.⁷ *Shulchan Aruch* continues “A male⁸ can be disqualified [from marrying a Jewess] by defects in any of three organs: the penis, the testes, and the ‘paths in which the sperm matures’, which are called ‘the testicle cords’.” (The ‘testicle cords’ referred to are known medically as vasa efferentia, epididymis and vas deferens).

The immediate practical implication is that tying and cutting the vas deferens in the scrotum contravenes the Torah's ban on sterilization, and anyone so treated is classed as a *petsua dakka* and restricted regarding marriage. In legal phraseology, he is “disqualified from entering the congregation.” This is the basis of the objection in Jewish law to sterilization by cutting the vas.⁹

Most elderly men are affected to some extent by benign prostatic hyperplasia, and a significant proportion of these people are required to undergo an operation to remove the prostate. Until recently, urologists used to tie the vasa at the same time as they removed the prostate in order to prevent infection from penetrating into the testes. Cutting the vas within the scrotum or the pelvis apparently creates a status of *petsua dakka*. These people relied on the decision of *Sefer Mitzvot Gadol*, however, according to

⁵ Referred to in the Torah as *eshech* (Lev. 21:20) and in the Mishna as *beitsah*.

⁶ *Shulchan Aruch, Even Ha'ezer* 5:2.

⁷ *Ibid.* 5:1.

⁸ A woman is not prevented from marrying on account of any interference with her reproductive organs. The law applies only to males.

⁹ *Nishmat Avraham*, 3:5:8:12 (2, 6).

whom any action performed for medical reasons does not create a *petsua dakka*.¹⁰

Chazon Ish here introduced an important new *halachic* principle:¹¹ anything affecting the sperm ducts within the abdomen does not create a disqualified *petsua dakka*; the laws of *petsua dakka* in the Torah apply only if the damage is within the scrotum where the vasa can be felt by hand. According to this opinion, there is no need to rely on the decision of *Sefer Mitzvot Gadol*. Whatever happens to the vasa within the abdomen does not create a disqualification, even if not done for medical reasons (such as the result of a war wound or other injury). But despite Chazon Ish's clear decision, the issue is not all that simple, as we shall see from the case of the patient from Pumpedita.

The Patient from Pumpedita

An interesting medical case is described in the Talmud.¹² An inhabitant of Pumpedita had an obstruction in his sperm duct, as a result of which the sperm emerged “in the place of the urination”. Rabbi Bivi considered that his reproduction ability was not affected, but Rabbi Papi expressed his view very strongly to the contrary: he maintained that sperm that deviated from its normal place did not mature properly and would be sterile.

The commentators disagree over the medical interpretation of what actually happened. Chazon Ish gave an explanation that is not consistent with our knowledge of anatomy.¹³ He wrote, in self-justification, that this is an example of a case where “nature has changed,” and that human anatomy was different in Talmudic times. The view of Chazon Ish presents many difficulties. Consequently Rabbi Padwa, in *Cheshev Ha'efod*, explained the story in a way that does not require belief in a change in human anatomy since the period of the Talmud. He considers that the sperm duct of the patient from Pumpedita became perforated somewhere within the abdomen, and the sperm found an alternative route to the urethra.¹⁴

¹⁰ *Sefer Mitzvot Gadol*, Negative laws 119, quoted by Chatam Sofer, *Responsa, Even Ha'ezer* 1:17.

¹¹ Chazon Ish, *Ishut*, 12:7.

¹² *Yevamot* 75b.

¹³ Chazon Ish, *Ishut*, 12:7.

¹⁴ *Cheshev Ha'efod Responsa* 2:8, quoted by *Nishmat Avraham, Even Ha'ezer* 5:3.

Rabbi Auerbach found great difficulty in accepting this explanation.¹⁵ How, in talmudic times, could they conduct an accurate diagnosis of a deep wound within the abdominal cavity?

All these problems can be resolved by means of a simple explanation of what occurred at Pumpedita. There was a retrograde ejaculation of sperm into the bladder, as a result of which the sperm did not come forward and emerge during intercourse, but came out later when urinating. On this explanation the obstruction referred to was not a mechanical obstruction but a functional one, and “the issue of the sperm in the place of the urination” means the emergence of the sperm was at the time of urination.

This is exactly what occurs after a prostate operation, and when it happens there is no need for special equipment to diagnose it. The patient simply notices that the sperm does not emerge from the body until he urinates subsequent to intercourse.

Rabbi Papi's strong objection also makes more sense in the light of modern medical knowledge. Sperm cells that reach the bladder are in general sterile, mainly because they are affected by low pH of the surrounding urine.¹⁶

Rashi and most of the early authorities (*Rishonim*) explain the talmudic discussion surrounding the case as being concerned with the laws of *petsua dakka*. That would imply that a status of *petsua dakka* can be created even by a functional problem within the abdomen, contrary to the opinion of Chazon Ish. However, Rabbi Eliezer of Metz claims that the discussion in the Talmud is not concerned with the disqualification of *petsua dakka*, but merely with that particular person's ability to procreate and his paternity of the children.¹⁷ If we accept that opinion, there is no rebuttal of the view of Chazon Ish that damage to reproductive organs within the abdomen does not disqualify as *petsua dakka*.

The first question addressed to Rabbi Daichovsky concerns surgical damage to the sperm ducts in the course of treating a patient who suffers from infertility as a result of a physical obstruction in those ducts. The surgical technique requires the

¹⁵ See *Nishmat Avraham*, *ibid*.

¹⁶ In rare cases where the urine is not acidic but basic, the sperm cells can occasionally be fertile. This can be used to justify the rejected opinion of Rabbi Bivi. In practice the urine can be made basic by medical means.

¹⁷ *Yere'im* §29. Quoted in part in *Beit Shemuel, Even Ha'ezer* 5:9.

obstructed portion of the duct to be removed first, and the two loose ends to then be joined together. The first incision apparently creates a status of *petsua dakka*,¹⁸ but the remainder of the operation repairs the damage. Does the surgical repair also “repair” the *halachic* damage and cancel the disqualification of *petsua dakka*?

The *Rishonim* disagree as to whether, when an animal is slaughtered for food, repairing the damage to a *triefa* (in the technical sense of an animal that is injured before or during the slaughtering) can render it kosher.¹⁹ Fundamentally a similar question can be asked in the case of *petsua dakka*.²⁰ The main question is whether or not the incision may be made in the first place, since in a surgical operation there can never be an absolute certainty that the subsequent repair will be successful.

Testing the Fertility of the Sperm

Although *Shulchan Aruch* describes wasteful emission of sperm as being one of the most serious of all the sins of the Torah,²¹ there is disagreement among the Early Authorities as to whether this is indeed banned by the Torah or merely by the Rabbis.²² Not by chance, there are also many sensitive effects of the ban on wasting sperm, as with other laws connected with behavior likely to influence the continuation of the human race.²³ The kabbalists have considered the matter at length,²⁴ but I have not studied kabbala. This sensitive subject also has many educational implications. Educators know that the period in the life of an adolescent in which he forms his attitude can influence the entire duration of his life. For this reason, legal authorities in the past, as in the present, have dealt with the matter with appropriate caution.

¹⁸ That is, if the opinion of *Sefer Mitzvot Gadol* quoted above is not accepted.

¹⁹ Nachmanides (Ramban) *Chullin* 76a, and Rashba *ibid*.

²⁰ See *Yevamot* 76a, that repairing damage does cancel the disqualification of *petsua dakka*.

²¹ *Even Ha'ezer* 23.

²² *Responsa Torat Chesed* 2:43. See also entry *Hash'chatat Zera* in *Talmudic Encyclopedia*.

²³ See *e.g. Minchat Chinnuch* 209.

²⁴ See M. Kasher, *Torah Shelemah*, Genesis 38:10, note 45. See also Professor Ta-Shema *Haniglah Shebannistar* p.35: This topic is reiterated many times in the *Zohar*, and stressed in Exodus 3:72.

The essence of the discussion is a basic disagreement among the Early Authorities as to the source of the ban on "wasting". According to Tosafot, the ban is derived from the duty to reproduce.²⁵ Emission of sperm for the purpose of enhancing reproduction, such as to conduct tests or to provide treatment for infertility, would in that case fall outside the scope of the ban. On the other hand, many other Early Authorities considered that the ban on wasting sperm is unconnected with and independent of the law to reproduce, but is based on a Baraita which derives it from the ban on adultery.²⁶ Adultery is certainly not permitted even for the purpose of reproduction.

Two of the leading authorities of the last generation, Rabbi Israel Z. Gustman and Rabbi Moshe Feinstein, disagreed on the practical law. The former, who was already in his youth a Rabbinical judge in Vilna at the time of *Achiezer*, gave a clear decision that the ban on wasting sperm is rooted in the idea that it prevents reproduction. In his opinion, where sperm has to be emitted for the requirements of reproduction, this is permitted ab initio, and not merely post facto.^{27,28} Rabbi Feinstein, a leading *halachic* authority in the U.S.A. for three generations, gave his decision that any emission of sperm which is not connected with the woman's body is within the sphere of the ban on adultery, with all the consequent legal implications.

Rabbi Feinstein's decision, as well as the special sensitivities mentioned above, have raised great doubts which affect the new testing technologies listed by Professor Bartov.

When investigating male infertility it is often necessary to test the sperm. The basic test is not expensive, and the sperm is investigated using a normal light microscope. This will clarify the situation in some cases; in other cases, more comprehensive and

²⁵ *Sanhedrin* 59b, s.v. *Veha*, and likewise Rabbenu Tam in *Yevamot* 12, s.v. *Shalosh*.

²⁶ *Tosafot* *ibid.* Also Ramban, Ran, Rashba *Niddah* 13a. Baraita is in *Niddah* 13b.

²⁷ During Passover 5738 (1978) I asked Rabbi Gustman, on behalf of an observant young couple, a medical-*halachic* question, the reply to which was dependent on the source of the ban on wasting sperm. Rabbi Gustman permitted the action, which was to have future implications concerning the ability to procreate. Two weeks later he called me and asked me to return to the couple and reassure them that the permission was ab initio and not merely post facto. Some time later, he repeated this request.

²⁸ *Responso Iggerot Moshe, Even Ha'ezer* 1:70 and 3:14. See also *Nishmat Avraham*, part 3 (*Even Ha'ezer*) 23:1 p. 112, quoting Rabbi Auerbach.

complex tests may be necessary. The latter may include biochemical or microbiological tests, examination by an electron microscope, and so on. The normal accepted procedure is to first perform the simple test, and then if necessary subsequently perform further tests which require additional emission of sperm.

An alternative possibility is to send the patient to Professor Bartov's laboratory for comprehensive testing at the start. One examination includes all the tests required, with just one emission of sperm. The disadvantage of this is the extremely high cost of this comprehensive test, for the Torah is known to take pity on our financial constraints.

Hence the question arises whether it is preferable to start with a cheap and simple test, and to conduct the more expensive comprehensive tests only if they are found to be necessary, or to undergo the expensive comprehensive tests at the outset in order to prevent "unnecessary" emission of sperm.

Medical Treatment of Impotence²⁹

Impotence at any age affects family relationships ("domestic peace"),³⁰ but at a young age it can also be a direct cause of childlessness. A further connection between impotence and fertility has recently been discovered, though not as yet fully understood: men who have undergone medical treatment for impotence have often found that their fertility rate has also improved as a result.³¹

To understand the physiological system of erection we need to look at a cross-section of the penis (see illustration on p. 123 *supra*). In the upper section one can clearly see the two corpora cavernosa which cause the erection, the arteries which supply blood to the corpora, and the elastic membrane (tunica albuginia) which covers the corpora and whose function plays a positive part in establishing a normal erection. In the lower section we see in the form of an ellipse the corpus spongiosum in the middle of which is the urethra from which emerges, as appropriate, urine or semen.

²⁹ See M. Halperin *Infertility on Account of Vaginismus and Impotence in Female and Male Fertility* (eds. J. G. Schenker and A. Alhalal, Akademon 1996) ch. 26 pp. 399-410.

³⁰ Talmud *Shabbat* 152a.

³¹ See following section, pp. 235-237.

For a normal erection to take place, the blood flow to the corpora cavernosa has to be elevated up to four times the regular flow, this combines with a significant reduction in the venous drainage of the cavernous sinuses. This result is achieved by relaxing the smooth muscles in the cavernous arterial walls, the arterioles that emerge from them, and the cavernous sinuses. As a result of the increase in both the pressure and quantity of blood within the corpora cavernosa, the latter become longer, wider and straighter, in exactly the same way as a balloon becomes wider and straighter when the quantity and pressure of air being forced into it is increased. When this mechanism is not working properly a man will suffer from impotence. Previously such a defect in the mechanism was attributed in most cases to psychological causes. It is now known that in over 80% or even 90% of instances where a man suffers from impotence the primary trouble is organic (physical); but this is usually augmented by a secondary psychological cause arising from the man's personal insecurities regarding his situation.

Up to the late eighties, the only way to treat a man suffering from severe organic impotence was by implanting a prosthesis in the penis to replace the original corpora cavernosa. The impressive development of the early nineties has been the discovery of medical treatment for organic impotence. This new treatment includes injecting medicines that enlarge the blood vessels which supply the corpora cavernosa. Millions of patients throughout the world have been able to once again enjoy reasonable sexual functioning with the development of the injection treatment. Some of them have been freed completely from requiring the injections following the treatment, while others still require self-injection before each intercourse. Compared with the old-fashioned method of implanting a prosthesis, the medical treatment constitutes a real breakthrough. During the late nineties some oral medications were developed, the PDE5 inhibitors. Nevertheless, many patients are still in need of intracavernoseus injections.

The implication regarding a good relationship (which the Talmud refers to as "domestic peace") is clear. The Talmud³² describes a medical situation characteristic of old age. Rabbi Judah

³² Ibid.

the President asked Rabbi Simon ben Chalafta why he did not visit him on the Festival, to which Rabbi Simon replied:

Rocks have become high,
Those near have become far,
Two have become three,
That which creates domestic peace has become
defunct.

This wonderfully describes an extensive damage to the blood vessels which affects several body organs, including the limbs, the heart and the penis. Such a damage makes it difficult to climb even small heights (“rocks become high”), to walk even a small distance (“those near become far”), requires the support of a cane (“two become three”) and removes the ability of the organ that “creates domestic peace” to function.

Today functional impairment can be overcome in most cases, on condition that the treatment is applied correctly taking care to avoid complications. The final result enables normal family life to continue.

Professor Bartov correctly mentioned impotence as one of the causes of infertility among young couples. The problem exists but can be dealt with by the new method. Following the treatment, some of those who are treated are cured as a result of two mechanisms: relaxation of the smooth muscle on the wall of the contracted blood vessels, and absorption of small lumps following increased blood flow around them. Others are able to live normal sex lives conditional on self-injection before intercourse.

A basic *halachic* question that arises in connection with treatment for impotence is that of the Sabbath. I am asked daily by observant Jews who undergo treatment “What about treatment on the Sabbath? May the medicine be injected on the Sabbath into the corpora cavernosa?”

The corpora cavernosa are in some ways very similar to the hollows in the veins, because their sinuses too are filled with blood, but there is a difference. The normal procedure with intravenous injections is to first draw a little blood, in order to verify that the needle has penetrated the vein. Such drawing of blood is not necessary when injecting into the corpora cavernosa.

In order to give a *halachic* decision on such a matter, it is first necessary to define the legal (*halachic*) status of a patient suffering from impotence. He is clearly not one whose life is in danger, but

he might possibly be classified as “one who is ill but whose life is not in danger” who is allowed to have medical treatment on the Sabbath. Or perhaps he is not classified as “ill” at all, and the rabbinical ban on receiving medical treatment on the Sabbath applies to him. *Shulchan Aruch* defines “one who is ill but whose life is not in danger” as one who, while not in danger, is bedridden as a result of his illness.³³ Rabbi Isserles, in the name of *Maggid Mishneh*, broadens the definition to include one who suffers from pains that affect his entire body, even if he is not bedridden.³⁴ All this appears to imply that one who suffers from impotence is not considered “ill” in this sense, despite the fact that we are considering marital duties (“conjugal rights”), “domestic peace,” the duty to enjoy the Sabbath, and sometimes also the duty to reproduce.

Medical Treatment to Restore Creation of Sperm in the Testes

During the mid nineties we have learned that there is a connection between impotence and the problem of male infertility which is much more involved than the obvious one. Professor Bartov has pointed out that a significant proportion of the problems of male infertility arise from a defect in the creation of sperm cells in the testes.

Like any other organ, the testes require two things: a good supply of blood, and good drainage of waste.

When the uni-directional valves of the veins of the testes are damaged, drainage is incomplete and a reflux of venous blood occurs from the abdomen to the scrotum, instead of the required flow from the scrotum to the abdominal great veins. As a result, the veins inside the scrotum are dilated and a varicocele is created. This defect causes further elevation of temperature of the testes and the forcing of toxic substances around the testes. These substances, which originate in the veins of the kidney, contract the arterial blood-vessels that supply blood to the testes and are liable to affect the ability of the testes to produce normal sperm cells.

We may ask ourselves what would happen if we were to rectify the flow of blood to the testes in men suffering from sperm cells not

³³ *Orach Chayim* 328:17.

³⁴ *Shemirat Shabbat Kehilchata*, part 1 §33.

being produced properly in the testes. The question is of considerable interest, especially with regard to men who do not suffer from varicocele, although the flow of blood to their testes is reduced. The discussion on this question became practical when it was found that some of the treatments provided against impotence also happened to increase the flow of blood to the testes, and even to increase the size of the testes themselves.

The following case speaks for itself. A man of 34 was married for 12 years without children. The reason for his infertility was severe OTA syndrome. Dozens of treatments of artificial insemination (AIH) did not produce pregnancy, nor did four attempts at in-vitro fertilization (IVF). At one stage the man also started to suffer from impotence and was given injections in the cavities. The size of his testes was measured before the injection,

	Volume of right testicle in cc	Percentage Change (right)	Volume of left testicle in cc	Percentage Change (left)
Before Treatment	8.4		6.4	
After the first ICI	8.8		7.3	
Increase in volume after 1st ICI		$\Delta = 4.8\%$		$\Delta = 14\%$
1 Week after 1st treatment	9.5		7.9	
Increase in volume during week		$\Delta = 13\%$		$\Delta = 23\%$

Table no. 1: Effects of ICI (intra-cavernous injection) on testicular volume

half an hour after the injection, and again a week later. Table 1 indicates the changes in size of the testes as a result of treatment. This effect was found merely by chance, because the purpose of the injections was to treat impotence, not infertility. We said to ourselves that if the physiological logic held and we had indeed

succeeded in increasing the flow of blood to the testes, we might well expect to see an improvement in the production of sperm in the testes.

The result was amazing. Within three and a half months his wife became pregnant, naturally and for the first time in twelve years of marriage. The results speak for themselves. She gave birth to a healthy boy, and subsequently, without any further treatment, to two further children.³⁵

The effect of enlargement of the testes was found to have recurred in dozens of cases where this was checked, and in a significant number of cases the enlargement of the testes remained even after treatment was stopped.

It must be pointed out that this phenomenon is not easy to explain on the basis of our knowledge of anatomy, according to which there should be no connection between the supply of arterial blood to the testes and the supply of arterial blood to the corpora cavernosa. But it is difficult to argue against clear experimental facts, and there seems to be some connection between small blood vessels in the corpora cavernosa and the testes. Apart from the case described, there were other cases in which an improvement in the quality of the sperm was found after treatment for impotence, but until well-controlled research has been conducted no decisive statements can be made regarding the efficiency of this treatment for fertility, or about the appropriate indications. In any event, the relevant *halachic* problem acquires a new dimension: if it becomes clear that injecting materials that dilate the blood vessels leading into the testes can improve the chances of birth, may this treatment be continued also on the Sabbath?

The third question is therefore a double one. Is injection into the cavities allowed on the Sabbath for the purpose of fertility? Is it permitted for the sake of “domestic peace,” fulfilling marital obligations, or for properly celebrating the Sabbath?

Source: **The First international Colloquium on Medicine, Ethics & Jewish Law,**

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³⁵ To date, 1995.