

# *Hemophilia and Circumcision*

## *From Observation to Classification: Connecting a Talmudic Presumption to a Modern Diagnosis*

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The Talmud makes a presumption about some baby boys that it considers so strong that its presence leads to a legal injunction barring circumcision. Can the advancement of medical knowledge modify the application of the presumption and possibly nullify the prohibition?

The *mitzva* of circumcision, *Brit Milah*, is one of the hallmarks of the Jewish people and its performance has been observed meticulously over the millennia, often at great sacrifice. Only a serious danger to the life of the infant by performance of a *brit* would lead the *halachic* authorities to forbid the procedure. Lacking the sophisticated diagnostic tools of modern medicine the rabbis had to depend upon simple but careful clinical observations. Their clinical laymen's conclusions have subsequently been clarified and understood precisely from a medical point of view. In the present paper we examine the specific observations and conclusions of *Chazal* and the impact that changes in medical information may have on these *halachic* decisions.

### A Talmudic mystery

The Talmud teaches that if a woman had two or three sons who died from circumcision, subsequent boys should not be circumcised due to a *chazaka* (presumption) that future boys will also die:<sup>1</sup>

<sup>1</sup> The dispute concerns how many instances must occur before we establish a *chazaka*, or presumption, that her sons die from circumcision (rather than as a result of random and unrelated events) and therefore forbid the circumcision of any subsequent son. *Chazaka* is a very important *halachic* concept. We accept a presumption that an event will occur again because it has occurred a sufficient number of times for us to believe that it will continue to happen. Jewish law treats *chazaka* as fact unless there is some evidence to suggest that the presumption is not valid. But how many times must an event occur for us to presume that it will continue to occur? Rabbi Yehuda Ha'nasi, author of the *Mishna*, argues that two unusual occurrences

“...if a woman had her first son circumcised and he died, and she had the second one circumcised and he died, she should not have the third son circumcised. These are the words of Rabbi Yehuda Ha'nasi. Rabbi Shimon ben Gamliel, however, said: “She may circumcise the third son, but must not circumcise the fourth son...”<sup>2</sup>

The Talmud then makes a similar presumption regarding the sons of several sisters:

“...It once happened with four sisters from Tzipori that the first had her son circumcised and he died, the second sister had her son circumcised and he died, the third sister had her son circumcised and he also died, and the fourth sister came before Rabbi Shimon ben Gamliel and he told her, “You must not circumcise your son.” Perhaps if the third sister had come [to Rabbi Shimon ben Gamliel], he would have ruled the same? If so, why did Rabbi Chiya bar Abba bother to recount the story? Perhaps Rabbi Chiya bar Abba was teaching us that events occurring to sisters can create a *chazaka*.”<sup>3</sup>

The reason the rabbis even consider the concept of *chazaka* or “presumption” in these cases is because death from circumcision is a very rare occurrence in any individual case, so certainly the possibility of some familial abnormality is raised when several sons from the same family die from the procedure.

create a *chazaka*, while Rabbi Shimon ben Gamliel, another scholar, argues that three events are necessary. The question of whether two or three events create a presumption is the topic of the Talmud's discussion. In cases of potential danger, the standard assumption is that two events create a presumption. (*Beit Yosef, Yoreh Deah* 263:2 and *Mishneh Torah, Laws of Circumcision* 1:18)

<sup>2</sup> *Yevamot* 64B.

<sup>3</sup> *Ibid.*

Does it matter why the sons died from circumcision? Is there any information that we might seek that would make it possible to exclude a subsequent son from this presumption? Perhaps the rabbis recognized a medical condition without a name that caused babies to die from circumcision which we could identify as the underlying reason for the *chazaka*.

### What did the rabbis see?

What details can be gleaned from the Talmud's brief debate that might point towards a diagnosis? The early commentaries are very specific that the Talmud is dealing with a condition that only affects several boys from one mother or one boy each from several sisters.<sup>4</sup> Most commentators point out that the boys must be the offspring of the same mother, *even if there were different fathers*.<sup>5</sup> However, if they were the offspring of the same father, but different mothers, then most *rishonim* (early medieval commentators) rule that there is no presumption that circumcision would be dangerous for future boys. For instance, the medieval Talmudic commentator, Rabbi Menachem Ha'Meiri, specifically states that our discussion only applies to the mother and the sisters "because the issue is in the woman."<sup>6</sup>

<sup>4</sup> As mentioned above, the Talmud also brings the case of several sisters, each of whom had a son that died from circumcision. No such case is brought regarding the sons of brothers. As Rashi, the preeminent medieval commentator writes, "just as the woman herself creates a *chazaka* on herself with three occurrences, so too one occurrence to each of three sisters creates a *chazaka* on each sister."

<sup>5</sup> Rashi, Tractate *Yevamot* 64B; Meiri, Tractate *Yevamot* 64B; Maimonides, *Mishneh Torah*, Laws of Circumcision 1:18; *Tur*, *Yoreh Deah* 263; *Shulchan Aruch*, *Yoreh Deah* 263 (the *Shulchan Aruch* also includes different mothers, will be discussed shortly).

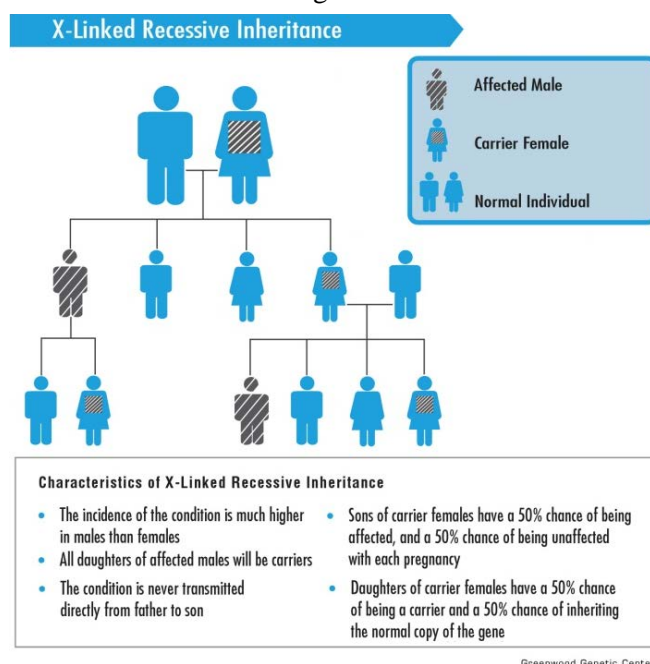
<sup>6</sup> Rabbi Menachem Ha'Meiri, *Yevamot* 64B.

The notable exception is the late 13<sup>th</sup>/early 14<sup>th</sup> century commentator, Rabbenu Manoach, who applies the *chazaka* also to the sons of the same father and different mothers.<sup>7</sup> Since Jewish law almost always errs on the side of caution with respect to danger to life, some other commentators, such as *Beit Yosef*, *Yoreh Deah* 263, include offspring of the same father and different mothers, not necessarily because they believe it to be correct, but lest the minority opinion of Rabbenu Manoach be correct.<sup>8</sup>

Are there any indications as to the nature of the condition itself? The Talmud records the deaths without explaining their specific cause, but we are left with a few clues as to the etiology of the deaths. At the end of the discussion regarding brothers dying of circumcision, the Talmud suggests that the condition is related to a blood abnormality when it states: "The *chazaka* concerning death from circumcision makes sense since there is a family with thin (loose) blood and a family with thick blood..."<sup>9</sup>

The disorder is clearly a hematological condition that affects boys, but is caused by a problem in the mother, but not the father. There is a presumption that

Figure 1



<sup>7</sup> For a possible explanation of the reason for Rabbeinu Manoach's ruling, see footnote 14 *infra*.

<sup>8</sup> This may be inferred from the fact that while the final ruling of Rabbi Yosef Karo in the Code of Jewish Law (*Shulchan Aruch*, *Yoreh Deah* 263:2) incorporates the dissenting opinion that feared for the offspring of the same father and different mothers, Rabbi Moshe Isserles, in his gloss to Rabbi Karo's ruling, makes clear that the inclusion of different mothers has a questionable basis in Jewish law, but that we always err on the side of caution. As Rabbi Isserles writes: "And there are those who disagree and think that [the creation of this type of *chazaka*] does not apply to a man, but only to a woman (*Chiddushei Aguda*, *Perek Rabbi Eliezer D'mila*), but it appears that in questionable danger to life we are lenient [to err on the side of caution]."

<sup>9</sup> *Yevamot* 64B.

the underlying cause (but not the disease itself) may be found in sisters, but not brothers, and in mothers, but not fathers.

At this point it would appear that we may have an answer. An abnormality that is carried only by women, but strikes only boys is almost certainly an X-linked recessive condition (see Figure 1).<sup>10</sup> That the cause of death is due to a familial excessive bleeding disorder is clear from the Talmud and explicitly stated by at least one 14th century commentator.<sup>11</sup>

### A mystery solved-maybe!

It is at this point that the keen analytic abilities of the rabbinic scholars become apparent. The Talmud describes a very specific form of blood abnormality that is carried only by women, but strikes only boys and would potentially cause death in a child who was circumcised. The Talmud's description seems to coincide precisely with the disease hemophilia.

The first modern description of hemophilia was in 1803 by a Philadelphia physician named John Conrad Otto, who described "a hemorrhagic disposition existing in certain families."<sup>12</sup> He recognized its hereditary nature and that it only affected males. Yet, while not having an official medical name until many centuries later, it is obvious that the earliest description of hemophilia A was much earlier – in Talmudic times when diseases did not necessarily yet have names!<sup>13</sup> In fact, medical textbooks attribute the

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rabbis of the Talmud with the first recorded description of hemophilia A!<sup>14</sup>

Yet one problem remains. Hemophilia is an incurable disease. While clotting factors can be replaced when necessary, no child "outgrows" hemophilia. Yet, a second Talmudic discussion seems to call into question our diagnosis of hemophilia.<sup>15</sup>

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hemophilia A since it is so much more common, although both the presentation and Jewish legal ramifications would be the same for hemophilia B.

<sup>14</sup> See: Goodman, R., *Genetic Disorders Among the Jewish People*, Johns Hopkins University Press, Baltimore 1979, p. 57. See also the descriptions of hemophilia A by the Canadian and United States Hemophilia Societies (<http://www.hemophilia.ca/en/2.1.2.php>):

"Hemophilia was recognized, though not named, in ancient times. The Talmud, a collection of Jewish Rabbinical writings from the 2nd century AD, stated that male babies did not have to be circumcised if two brothers had already died from the procedure."

While it is empirically the case that X-linked conditions such as hemophilia A are carried by the unaffected mother who contributes the X chromosome to the male offspring, (the father contributes only a Y chromosome), without knowledge of modern genetics, the rationale for why the rabbis would ascribe the cause of a hematologic abnormality to the mother alone is a matter of speculation.

A possible explanation involves understanding another Talmudic passage. The Babylonian Talmud (*Nidda* 31A) states:

"... There are three partners in [the creation] of man: God, the father, and the mother. The father contributes the white [components], from which develop the bones, the sinews, the nails, the dura [lit. brain] of the skull, and the white of the eye. The mother contributes the red [components], from which develop the skin, the flesh, the hair, the black of the eye (the pupil)..."

The *Turei Zahav* (Rabbi David HaLevi Segal, 1586-1667) and the *Vilna Gaon* (Elijah ben Shlomo Zalman Kremer 1720-1797) comment that Rabbi Isserles attributes the creation of the *chazaka* "only to a woman" because "the blood comes from the mother," based on a version of the above Talmudic passage that includes blood in the list of red components derived from the mother.

Rabbi Moshe Feinstein (*Iggerot Moshe, Yoreh De'ah*, 1:154) uses the same source in discussing why some commentators (such as *Rabbenu Manoach*) include the third male offspring of a man from different mothers in the prohibition of circumcision, speculating that the difference of opinion revolves around which text of the above quoted Talmudic passage a commentator possessed. Depending on whether a commentator had the text of the above Talmudic passage which included the blood among the "red" components contributed to the child by the mother would affect whether they would rule that the presumption of a hematological cause for a child's death from circumcision would be inherited exclusively through the mother or also through the father.

<sup>15</sup> For a discussion of alternative diagnoses that may be included in the rulings of the Talmud and commentaries, see Fred Rosner, "Hemophilia in the Talmud and Rabbinic Writings," *Annals of Internal Medicine* 70 (1969):833-837 and Steinberg, A., *Encyclopedia of Jewish Medical Ethics*, Feldheim Publishers, New York, 2003, p. 208-209.

<sup>10</sup> Illustrations from Genetic Counseling Aids, 4<sup>th</sup> Edition, Copyright 2002, permission for use granted by Greenwood Genetic Center.

<sup>11</sup> Rabbi Avraham ben Yitzchak of Montpellier (*Avraham Min Hahar*), *Yevamot* 64b, opening words, *gabei mila* (concerning circumcision): "...It is because of the family, for there are families whose children close to birth have thin/loose blood that is not absorbed into their limbs, and it all comes out if there is a small wound..."

<sup>12</sup> Otto, J.C., 1803, An account of an hemorrhagic disposition existing in certain families, *Med. Responsitory* 6:1.

<sup>13</sup> Hemophilia A and hemophilia B are both X-linked recessive conditions of various severities. In hemophilia A, factor XIII is lacking. In hemophilia B, a fairly rare disorder that appears to have been passed down by Queen Victoria to several royal families in Europe, factor IX is lacking. While both will manifest predominantly as bleeding disorders, it is presumed that the Talmud is discussing

## What did Rabbi Natan see?

The Talmud describes two cases of specific hematological abnormalities in infants that required postponement of circumcision.<sup>16</sup> In both cases, Rabbi Natan allowed a baby boy, whose two brothers had died of circumcision, to be circumcised once his particular blood abnormality had abated! One of the cases sounds very similar to our previously discussed case:

And Abbaye said: mother told me regarding a baby that is red – that it is because its blood is not absorbed; wait for him until his blood is absorbed and [only then] circumcise him. [If the baby is] *yarok* (yellow or green) then the reason is because his blood has not fallen into him (he is anemic); wait until his blood falls in (he is full blooded) and then circumcise him. For we learn in a *Baraita*, thus said Rabbi Natan: One time I was traveling to the seaside villages and a woman came before me that had circumcised her first son and he died, [she circumcised her] second son and he died, and she brought the third [son] before me. I saw that he was red and I said to her: wait on him [to circumcise him] until his blood is absorbed. She waited until his blood was absorbed, and circumcised him, and he lived. And they called him Natan the Babylonian after me.

A key question arises from this narrative. In each case, why was Rabbi Natan willing to circumcise the third child at all? If the death of two sons creates the presumption that subsequent sons will die from circumcision, he should have forbade circumcision regardless of the condition of the third son! We see that despite the initial ruling that once a *chazaka* is created, no succeeding sons could be circumcised, Rabbi Natan was willing to allow circumcision when he understood the underlying reason for the first sons' deaths.<sup>17</sup> More importantly, Rabbi Natan presumes that the hematologic abnormality will resolve!

This concept is of great *halachic* importance. Rabbi Natan's recommendation to circumcise a child whose brothers died of circumcision once the medical contraindication has resolved strongly supports the thesis that we may evaluate at least some of the

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a result of circumcision may be performed if it is postponed to assure the health (literally strength) of the baby, arguing that based on *Yevamot* 64B there is no Talmudic basis for such a leniency. He brings a lengthy discussion regarding Rabbi Natan's justification for allowing circumcision of such a third son. Among the possibilities he entertains are:

"Perhaps it was different in that case, since we saw in [that child] that his blood was not yet absorbed, we say that probably also the first children were red, but that they [the people who had examined the first two sons] did not take notice, for behold, even on this third son it was [only] Rabbi Natan who noticed the situation [that the third son was red]. But for a woman who has her first and second sons circumcised and they had no signs of weakened strength (they appeared completely healthy) and they died, we say that there is a *chazaka* (presumption) that her sons die because of circumcision and the third [son] should not be circumcised at all."

"It is possible to say that perhaps Rabbi Natan who allowed circumcision [of the third son] after his blood was absorbed concurred with Rabbi Shimon ben Gamliel that three occurrences create a *chazaka* (presumption). And therefore, he was not particularly regarding the earlier deaths and only because this child's blood was not yet absorbed did he forbid circumcision in the proper time (8<sup>th</sup> day) and thus he instructed to wait until his blood was absorbed."

Rabbi Natan agrees that a *chazaka* (presumption) is created after two lethal events, but "we must conclude that because of the death of the first ones, he was concerned only that the [third son] not be circumcised on the 8<sup>th</sup> day, but that after he became strong, it would be permitted. (Therefore, the Talmud in *Yevamot* 64B is claiming that the *chazaka* that sons die because of circumcision applies only to circumcision performed on the 8<sup>th</sup> day. DE) And when Rabbi Natan directed that they wait, certainly he also warned that [the boy] be healthy and strong [before circumcision is permitted]. For presumably, he did not allow circumcision, the instant that he was no longer red, for presumably [the boy] was still weak since his blood was not absorbed until now."

In a footnote to this responsum, based on the *Maharsha* on *Chullin* 47B, the author's son writes: "And according to this [explanation], one could say that Rabbi Natan allowed circumcision of the third son after his blood was absorbed because there was no *chazaka* from the first two sons that they died from circumcision, but rather [they died] because they were [circumcised while still] red. But if there had been a *chazaka* that they died because of circumcision, without the [additional] reason that they were red, then we would say that there is a presumption (*chazaka*) that they died [only] because of circumcision and that the third son should not be circumcised at all, as my father wrote. However, the words of the *Maharsha* are difficult, since the key point is lacking. For the Talmud (*Shabbat* 134A) should have mentioned that the first two died because they were also red. So certainly, we must say that *Tosofot* understood that since Rabbi Natan mentioned [that] the first [son was circumcised and] died and the second [son was circumcised and] died, that it comes to teach us that two occurrences create a *chazaka*. And even so, Rabbi Natan permitted circumcision of the third son after his blood was absorbed, for he was not particular (he did not think that the *chazaka* applied) except regarding circumcising [a red baby] in the proper time (8th day). But after he is healthy, there is no longer a *chazaka* (i.e. the formerly red baby is no longer included in the *chazaka*) and it is permitted to circumcise as my father, the great scholar and genius, ruled."

<sup>16</sup> The same narrative appears in *Shabbat* 134A and *Chullin* 47B.

<sup>17</sup> See Rav Yechezkel Halevi Landau, Responsa *Nodeh B'yeduda*, *Mehadora Tinyana*, *Yoreh Deah* 165 (and gloss from the author's son). Rabbi Landau is uncomfortable with the ruling of Maimonides (as well as the *Tur*, *Shulchan Aruch*, and *Nimukei Yosef*) that circumcision of the third son of a woman whose first two sons died as

medical presumptions in the Talmud and disregard them if we know that their underlying cause does not apply to an individual case.<sup>18</sup>

This suggestion is strengthened by the ruling of Maimonides regarding delaying circumcision in the cases discussed in the Talmud. We find that while the Talmud states that subsequent sons should not be circumcised, Maimonides, in a decision accepted and later codified unchanged by *Tur* and *Shulchan Aruch*, rules that regarding circumcision of the third son:

“A woman had her first son circumcised and he died because of the circumcision which weakened his strength. And she also had her second son circumcised and he died as a result of the circumcision. Whether the second son was from her first husband or from her second husband, she should not circumcise the third son on the 8th day. Rather, she should postpone it until he has grown and his strength is established. One may only circumcise a child who is totally free of illness, for danger to life overrides everything. And it is possible to circumcise at a later time, but it is impossible to restore the life of a single soul of Israel forever.”<sup>19</sup>

Other commentators are puzzled by the decision of Maimonides to allow a subsequent son to be circumcised at all.<sup>20</sup> What of the presumption that he will die from the circumcision? While it is possible that Maimonides believed that the child would outgrow his “weakness,”<sup>21</sup> it is equally plausible to

suggest that Maimonides is simply suggesting that we wait until the child has proven that he is healthy and therefore does not suffer from whatever undetectable condition caused the “weakness” in the siblings who had died.

A crucial distinction must be recognized to understand the apparent contradiction between the case in *Yevamot* that categorically forbids subsequent circumcision of a boy whose brothers died of circumcision and the cases in *Shabbat* where Rabbi Natan allows subsequent circumcision if the underlying hematologic abnormality is recognized and expected to resolve. It *must* be the case that, unlike the boys brought to Rabbi Natan who manifested visible signs of blood abnormalities, the boys in the first cases manifested *no* recognizable signs of a bleeding disorder (or any other significant illness) at birth or it would have been forbidden to circumcise them even if they had no brothers or cousins who had died from circumcision.<sup>22</sup> As Maimonides rules above, it is universally accepted that a sick child may not be circumcised under any circumstances.

This distinction is implicit in the ruling of Maimonides and we might suggest that Maimonides has combined the cases of *Yevamot* and *Shabbat* to create a single ruling that applies to both types of cases. It goes without saying that if the baby is visibly

<sup>18</sup> This idea must be very carefully applied, since the *Shulchan Aruch* (*Yoreh Deah*, 116:5) states, “One should avoid all things that might lead to danger because a danger to life is stricter than a prohibition. One should be more concerned about a possible danger to life than a possible prohibition.” Since Jewish law is more strict with issues of danger than issues of prohibition, when the Rabbis of the Talmud have declared something dangerous, even if the reason is not known or confirmed empirically, the practical *halachic* ruling is usually still concerned with the possibility of danger.

<sup>19</sup> Maimonides, *Mishneh Torah*, Laws of Circumcision 1:18.

<sup>20</sup> *Kesef Mishneh* (Laws of Circumcision 1:18), commenting on the first part of this ruling, explains that Maimonides is referring to the case in *Yevamot* involving a baby with no symptoms, but with the presumption that the baby boy is from a family that has thin/loose blood for whom timely circumcision will endanger the baby’s life.

<sup>21</sup> Rosner, F., *The Medical Legacy of Moses Maimonides*, Chapter 12: Hemophilia, KTAV Publishing House, Hoboken, 1998, pp. 139-148; and Rosner, F., *Medicine in the Bible & the Talmud*, Augmented Edition, Yeshiva University Press, KTAV publishing House, Hoboken, 1995, pp.43-49.

<sup>22</sup> See *Beit Yosef*, *Yoreh Deah* 263:2: “A woman who had her first son circumcised and he died... And certainly we are dealing even with a case where there is no [recognizable] illness, since there is a family with thin/loose blood (even though no illness is visible in the child before circumcision). For if there was any [visible] illness, why would we require three occurrences? Even if the child were the first [of the sons to be circumcised], the law would be the same [that circumcision would not be permitted due to illness]. And therefore Maimonides and the Rav (Rabbenu Asher – the *Tur*) write that ‘he died because of the circumcision which weakened his strength’ to say that there was absolutely no illness [recognizable] at the time of circumcision.”

See also *Kesef Mishneh* (Laws of Circumcision 1:18) who comments that the case in *Yevamot* involves a baby with no symptoms, but only with the presumption that the baby is from a family that has thin/loose blood for whom timely circumcision will endanger the baby’s life.”

ill, he should not be circumcised. In the cases such as those of Rabbi Natan, if the visible signs of a hematological disorder resolve, the child is no longer ill and may be circumcised.

But what of the cases in *Yevamot* where no abnormalities are present at birth, but two brothers have died from circumcision? How could Maimonides possibly suggest allowing even a delayed circumcision if we are correct that the child has hemophilia? The answer may be quite simple – on average, hemophilia affects only half of the male offspring of a woman who carries the gene (see Figure 1). Since the clotting abnormality may be expected to manifest from infancy if the baby suffers from severe or even moderate forms of hemophilia, the absence of the disease can be confirmed in early childhood if the boy grows up asymptotically.<sup>23</sup>

While two previous siblings may have died from the disease in infancy after circumcision, there is still only a 50% chance that the next

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male child will be affected. Therefore, rules Maimonides, postpone the circumcision until “he has grown and his strength is established.” That is, wait until the child has grown and has not manifested the signs of hemophilia, for surely no child completely avoids even the mild injury that would clearly indicate a bleeding disorder. If the child truly matures without signs of excessive bleeding (which would certainly occur if the child had hemophilia), then he is unaffected and may be safely circumcised.

It is logical that Maimonides ends his brief discussion of these cases with the words, “One may only circumcise a child who is totally free of illness, for danger to life overrides everything. And it is possible to circumcise at a later time, but it is impossible to restore the life of a single soul of Israel forever.” That is, one may only circumcise a child free of illness, so if there are visible signs of a bleeding issue, the circumcision must be postponed until they resolve. And if there are no visible signs of a bleeding issue, but there are previous siblings that died from bleeding during circumcision, one must wait until it is clear that each subsequent male sibling does not manifest signs of a bleeding disorder.<sup>24</sup>

### **Are there *halachic* ramifications?**

There are two possible approaches to the Talmud’s ruling in *Yevamot* regarding circumcision, each yielding different practical *halacha*. We may reject the identification of a specific medical condition as the diagnosis in the Talmudic text and assert that while the cause for the *chazaka* was known to the early rabbis, it is by definition unknowable to us. Therefore, since only the Talmudic rabbis knew the exact reason for their presumption, but we do not, we would be required to apply the ruling of the rabbis exactly as it had been promulgated in the Talmud with no exceptions. Were this the case, then once two sons have died from circumcision, no succeeding sons may have a circumcision, regardless of any specific

<sup>23</sup> The degree of trauma necessary to cause a clinically important bleeding episode in a hemophiliac depends on the severity of the disease. A “cut” is rarely a problem since in this type of mild injury the hemostasis is achieved mainly by the action of platelets and vasoconstriction which are generally unaffected in hemophilia. The symptoms of hemophilia are dependent on the level of activity of the clotting factor in question. Less than 1% activity will have classical symptoms. Less than 5% activity will have symptoms only in the face of significant trauma (such as tooth extraction). Patients with severe hemophilia fare the worst, with the common major symptom being intra-articular bleeding, causing a painful, crippling and deforming condition. It would be reasonable to expect that a child with severe or even moderate hemophilia would be recognizable as symptomatic at a very young age. Only those with the mild form might pose a barrier to recognition of the disorder in the growing child unless challenged by a major physically traumatic episode. While it is not unusual for a child with mild hemophilia to go undiagnosed until the age of 5-6, the cases in the Talmud which resulted in death would almost certainly have been at least moderate in severity. Therefore, it would be expected that a boy with such a compromised ability to clot would manifest very young

(For a description of the classification of hemophilia severity, see White GC 2nd, Rosendaal F, Aledort LM, *et al.*, Definitions in hemophilia. Recommendation of the scientific subcommittee on factor VIII and factor IX of the scientific and standardization committee of the International Society on Thrombosis and Haemostasis. *Thromb Haemost.* 2001; 85:560).

<sup>24</sup> *Shulchan Aruch, Yoreh Deah* 263:2 rules similarly. While apparently conflating the cases of *Yevamot* and *Shabbat*, the *Shulchan Aruch* is likely applying the *halacha* (Jewish law) similarly to both types of cases.

medical information about the child in question. However, this would also imply that we may add no additional cases beyond the exact case presented in the Talmud.

On the other hand, we may postulate that a *chazaka* is sometimes created by a set of circumstances which are potentially identifiable. We could assert that the rabbis were seeing a phenomenon whose presence they could identify, but whose underlying cause they did not know. Were this to be the case, then if we can reliably identify the underlying cause of the presumption, then we may be able to understand in which situations the *chazaka* applies and in which it does not. We may be able to exclude some similar cases from the *chazaka* and broaden the application of the presumption to more cases than the specific set of circumstances described by the Talmud.

***While halachic principles are immutable, the application of halacha to new medical knowledge may yield different practical outcomes.***

A decision must be made between these two alternative interpretations because the ruling of the Talmud must be applied in the appropriate way. While sometimes the ruling derived from a given Talmudic case is the former restrictive approach, other times when the answer is deemed to be the latter approach, we are able to elucidate the *halacha* in much clearer terms. In light of the rulings of *Maimonides*, *Tur*, and *Shulchan Aruch* noted previously, modern Jewish legal decisors take the latter approach, accepting the possibility of defining the illness and applying Jewish law with that understanding.

### **What are the *halachic* ramifications?**

What is the *halachic* significance of our contention that hemophilia is the mysterious hematological condition described in the Talmud?

The practical applications of our journey into the Talmudic mystery of the baby boys illustrate a basic rule in Jewish law: while *halachic* principles are

immutable, the application of *halacha* to new medical knowledge may yield different practical outcomes.

If our identification of hemophilia as the blood abnormality of the Talmud is correct, then several practical applications should follow. Independent of the general prohibition of circumcising a sick baby, a child with known hemophilia should not be allowed to undergo circumcision, regardless of any prior familial deaths from circumcision. Additionally, in a family of known hemophiliacs, even if prior babies have died from circumcision, a baby should be able to be circumcised on the eighth day, without waiting to see if he grows up to be healthy, if there is a blood test showing normal blood coagulation.<sup>25</sup>

In *Nishmat Avraham*, a medical-*halachic* commentary on the *Shulchan Aruch* (Code of Jewish Law), Dr. Abraham Abraham states unequivocally that the case of the two boys who died after circumcision concerns hemophilia and clearly rules:

“The blood in affected males cannot clot normally and therefore bleeding will continue and can reach life-threatening proportions. Such a male can obviously not be circumcised until the defect is (albeit temporarily) treated. Diagnosis of the condition is fairly simple and the baby cannot be circumcised, even if his older brothers have been circumcised without any problem.”<sup>26</sup>

In his book, *Medicine in the Bible and the Talmud*, Dr. Fred Rosner presents a similar opinion of Rabbi Moshe Feinstein:

“For practical purposes in this day of hematological sophistication, where antihemophilic globulin (factor VIII) assays can establish the diagnosis of hemophilia at or shortly after birth, one is not permitted to circumcise any child so diagnosed even if he did not have older siblings who exsanguinated after this operation. A positive diagnosis established by the finding of low to absent antihemophilic globulin levels in the plasma of a newborn infant is equivalent by Jewish

<sup>25</sup> Rabbi Shlomo Zalman Auerbach *zt”l*, reported in Abraham, A., 2003, *Nishmat Avraham, Yoreh Deah* 263:2, Mesorah Publications, Brooklyn, p. 206-207 (Vol. II, English Edition.).

<sup>26</sup> *Ibid.*

law to a history of two siblings having died after circumcision. A woman whose brothers bled to death after circumcision cannot have her child circumcised until the coagulation profile of her son is shown to be normal.”<sup>27</sup>

A second issue arises which is more complex. If hemophilia is the case of the Talmud, may a baby with hemophilia be circumcised, despite the cases in the Talmud and the prohibitive ruling of the *Shulchan Aruch*, if clotting factors are given to correct the coagulopathy?<sup>28</sup> There are two ways to approach the issue. Maybe the baby is considered to have an illness, even if clotting factors temporarily alleviate the coagulation deficiency entirely. Alternatively, perhaps the baby boy is not considered sick if he clots normally during the period of the circumcision. Analysis of this issue drives home the need for very accurate information before deciding a *halachic* issue.

***Rabbi Feinstein clearly accepted that if clotting factors could eliminate the risk of circumcision, the child would no longer be considered ill with respect to the general prohibition of not circumcising a sick child***

In his book, *Pioneers in Jewish Medical Ethics*, Dr. Rosner describes the evolution of this question. He explains that Rabbi Moshe Feinstein refused to allow circumcision of babies with hemophilia throughout the 1960s even after the development of clotting factors for hemophilia, stating firmly that until “they were cured,” circumcision would have to wait. Dr. Rosner writes that:

“[h]is logic is that even with the advent of blood products to replace the missing clotting factor, the risk of bleeding following circumcision is still substantially greater in a hemophiliac child than in a normal infant... In more recent years, with the availability of blood-clotting hemophilic factor concentrates, the risk of circumcision decreased significantly, so that Rabbi Feinstein permitted it.”<sup>29</sup>

We see the evolution of Rabbi Feinstein’s thinking. At no time did the *halachic* issues change. What changed was the technology available to make the circumcision safe for a child with hemophilia. Rabbi Feinstein clearly accepted that if clotting factors could eliminate the risk of circumcision, the child would no longer be considered ill with respect to the general prohibition of not circumcising a sick child and the specific prohibition of circumcising a baby with a *chazaka* that he will die following circumcision.<sup>30</sup>

<sup>27</sup> Rabbi Moshe Feinstein quoted in Rosner, F., *Medicine in the Bible & the Talmud*, 1995, p. 48 as a personal communication dated October 12, 1966.

<sup>28</sup> An alternative suggestion for safely circumcising a boy with hemophilia would be to utilize a laser. Such a procedure raises multiple questions, including whether:

- A laser fulfills the requirement of “*koach adam*” (a human act).
- A physical cutting with an instrument is necessary to fulfill the requirement of “*mila*” (literally, cutting).
- The lack of bleeding would invalidate the ritual circumcision due to the lack of *dam brit* (covenantal blood).
- The use of a laser would preclude the proper performance of “*peri’ah*” (required removal of the mucus membrane that lies under the foreskin which is usually performed as a separate step in the ritual circumcision).
- The inability to perform meaningful *metzitza* (suctioning blood from the site of circumcision) would invalidate the circumcision.

The acceptability of using a laser for circumcision was first discussed by Rabbi Yitzchak Yaakov Weiss in Responsa *Minchat Yitzchak*, 8:89 and 9:89. See also Walfish, J., 1995, “*Brit mila* (circumcision) utilizing a laser,” *Assia* 56 (14:4), 19, pp. 10-19 (republished in *Sefer Assia* volume 11, 2008, pp. 183-191). For an extensive analysis of the permissibility of utilizing a laser for circumcising a boy with hemophilia, see Bleich, J.D., “Laser Circumcision,” *Tradition* 43:3, 2010, pp. 89-109.

<sup>29</sup> Rosner, F., Rabbi Moshe Feinstein – Circumcision, in Rosner, F., ed. *Pioneers in Jewish Medical Ethics*, Jacob Aronson, Northvale, NJ, 1997, pp. 87-88.

The same sentiment is echoed as late as 1979 in Goodman MD, R., *Genetic Disorders Among the Jewish People*, Johns Hopkins University Press, Baltimore., 1979, p. 57:

“Even with modern-day treatment it is not recommended that a newborn hemophiliac male be circumcised, for the risk of his bleeding after the operation is substantially greater than that faced by a normal infant. A woman who has a family history of hemophilia cannot have her son circumcised until coagulation studies show her son to be perfectly normal. Thus, by Jewish Law, one must today withhold circumcision and abide by the wisdom enunciated by Maimonides: “One may circumcise only a child that is totally free of disease, because danger to life overrides every other consideration.”

<sup>30</sup> In the early 1980’s, there was an additional health issue that had it been known, might have changed the decision of whether it was permissible to use clotting factors to allow circumcision. The development of clotting factor from pooled plasma appeared to be a miraculous medical development, offering a normal life expectancy to hemophiliacs. But much of the clotting factors produced in the early 1980’s were not safe. From the beginning of the AIDS epidemic



Dr. Abraham describes a similar ruling of Rabbi Shlomo Zalman Auerbach, as well as the objection of the renowned *posek*, Rabbi Yehoshua Neuwirth, author of *Shmirat Shabbat K'Hilchata*:

“The missing factor can be injected before and after the *brit* and *Rav Auerbach zt”l* told me that it would be permissible to circumcise such a baby. *Rav Neuwirth shlita* wrote to me asking why this is not considered a disease and, although treatment is available, the disease remains. *Rav Auerbach zt”l* answered that as long as the baby does not bleed unnaturally he is not considered ill.”<sup>31</sup>

Dr. Abraham describes that Rabbi Auerbach went even further. He permitted (and required if possible) the circumcision to be performed on a *Shabbat* that is the eighth day after the baby’s birth if the intravenous catheter for cryoprecipitate infusion was either placed before *Shabbat* or inserted by a non-Jew. However, Rabbi Auerbach also ruled that if the baby has an allergic reaction with fever to the injected material, “it would be forbidden ever to circumcise him.”<sup>32</sup>

until the pooled blood products provided to hemophiliacs were rendered safe, 5000 hemophiliacs became infected with HIV and more than 4000 of the estimated 10,000 hemophiliacs in the US eventually died of AIDS due to clotting factor produced from tainted blood products. (Gilbert C. White, II, M.D., *Hemophilia: An Amazing 35-Year Journey from the Depths of HIV to the Threshold of Cure*, Transactions of the American Clinical and Climatological Association, vol. 121, pp. 62-63, 2010).

AIDS was first described in the *New England Journal of Medicine* in December 1981.

It is clear that during that period, the use of clotting factors from pooled donors would have presented a serious *halachic* question as to the propriety and permissibility of using such medication to allow circumcision. This issue was not dealt with in the *halachic* literature at the time because the threat from pooled plasma was not public knowledge and therefore was not presented to the *poskim* (personal communication with Dr. Abraham July 16, 2012).

Thankfully, this consideration is no longer a practical consideration as the blood supply is far safer and recombinant DNA produced clotting factors that do not require donors is now available.

<sup>31</sup> Abraham, A., *Nishmat Avraham, Yoreh Deah 263:2*, Mesorah Publications, Brooklyn, 2003, p. 206-207 (Vol. II, English Edition).

<sup>32</sup> Ibid. Dr. Abraham reported that at the time of publication of his book, a genetically engineered factor was available for intravenous injection and that a trial of gene therapy had just been reported with a successful but transient (not longer than ten months) effect with two other trials underway.

Ten years after the trial described by Dr. Abraham (Nonviral Transfer of the Gene Encoding Coagulation Factor VIII in Patients with Severe Hemophilia A, *NEJM* 344:23, June 7, 2001) that did not provide a cure for hemophilia A, an article again appeared in the *New England Journal of Medicine* (Adenovirus – Associated Virus Vector – Mediated Gene Transfer in Hemophilia B, *NEJM* 365:25, December 22, 2011) describing a major success in utilizing gene

The logic behind Rabbi Auerbach’s opinion is enlightening. A *brit mila* can only be performed on *Shabbat* if it is mandatory. Rabbi Auerbach ruled that so long as the baby’s clotting abnormality could be even temporarily reversed during the circumcision,

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the infant would not be considered ill with respect to the prohibition of circumcising a sick baby, and therefore the *brit* should be performed on *Shabbat* as

for any other “healthy” newborn. Since the circumcision could not be performed without the administration of the clotting factors, it is **required** to administer the cryoprecipitate to facilitate the performance of the *brit mila* in its proper time, even if this involved overriding the Rabbinic prohibition of instructing a non-Jew to place the intravenous infusion catheter on *Shabbat*!<sup>33</sup> This logic was disputed by Rabbi Neuwirth.<sup>34</sup>

## Conclusion

So we have come full circle. At a time when a mysterious bleeding disorder led to the death of baby boys from particular families, circumcising such children was clearly forbidden. Today, after recognizing the cause of the bleeding disorder as

therapy to treat a disease. The report was hailed by the *New York Times* (*Treatment for Blood Disease Is Gene Therapy Landmark*, December 10, 2011) as a highly significant milestone in gene therapy, reporting:

“Medical researchers in Britain have successfully treated six patients suffering from the blood-clotting disease known as hemophilia B by injecting them with the correct form of a defective gene, a landmark achievement in the troubled field of gene therapy. Hemophilia B, which was carried by Queen Victoria and affected most of the royal houses of Europe, is the first well-known disease to appear treatable by gene therapy, a technique with a 20-year record of almost unbroken failure.”

<sup>33</sup> The administration of the cryoprecipitate itself involves no Sabbath prohibition once the catheter is in place, so long as one does not draw back on the syringe to confirm catheter placement.

<sup>34</sup> Personal communications with Dr. Abraham May 30, 2004 and May 17, 2006.

hemophilia and developing a cure (albeit temporary), the final practical *halacha* appears to be exactly the opposite of the rulings of the Talmud and *Shulchan Aruch*, with circumcision for boys with hemophilia possibly being an obligation!<sup>35</sup> The transformation in practical *halacha* is not because the principles of Jewish law have changed, but because the facts of the case have changed. Had modern technology been available at the time of the Talmud, the law would have been the same as it is today.

The story of hemophilia in Jewish law provides a fascinating insight into the observational powers of the rabbis. We also see the flexibility of Jewish law and how it responds to up-to-date medical information to provide accurate *halachic* rulings. It should provide at least a small degree of humility to our modern minds to realize that rabbis in Israel, many centuries before the first medical description of hemophilia, had not only recognized its inheritance pattern, but had established laws to guard the health of babies who might have the disease.



<sup>35</sup> The same would apply to any other similar curable bleeding disorder or other life-threatening condition that can be treated.