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A TALE OF TWO STONES: THE IMPACT OF MEDICAL HISTORY ON CONTEMPORARY MEDICAL *HALAKHAH*

The advances in modern medicine have spawned a myriad of ethical and halakhic dilemmas. Modern day *poskim* (rabbinic authorities) address these issues by relying heavily on the works of their predecessors, works that often refer to contemporaneous medical theories and practice. While the principles of *Halakhah* have remained unchanged since the giving of the Torah, the principles of medical theory and practice have changed radically over the centuries. Therefore, when approaching any pre-20th-century medical halakhic text, it is imperative to realize that the medical theories and practices discussed therein can only be understood in their proper historical context. This essay analyzes two rabbinic sources from the 18th century which discuss a particular disease and its treatment. The contemporaneous history of this disease is presented for the purpose of clarifying the ambiguities of the text and preventing possible anachronistic interpretations and halakhic misapplications.

INTRODUCTION

In the past thirty years, a new specialty in Jewish law has evolved to cope with the rapid advances in medical and scientific technology. This area of halakhic research, like any other, is based on legal precedents and draws on material dating from antiquity to the present. While the principles of *Halakhah* are immutable, the corpus of medical and scientific theories has changed considerably with the passage of time. As a result, when analyzing a medical halakhic text from any pre-20th-century period, it is imperative not only to acknowledge that the medical theories discussed in the text may differ from our own, but also to understand those theories in order to best appreciate and extrapolate from the halakhic nuances of the text.[1] This brief essay analyzes two rabbinic sources from the 18th century which discuss a particular disease and its treatment. The contemporaneous history of this disease is presented for

the purpose of clarifying the ambiguities of the texts, and preventing possible anachronistic interpretations and halakhic misapplications.

THE RESPONSUM OF RABBI YECHEZKEL LANDAU (1713–93)

On the topic of autopsies and Jewish law, a responsum authored by Rabbi Yechezkel Landau serves as a foundation for legal discussions.[2] In this 18th-century responsum, the question posed to Rabbi Landau regarded a particular clinical scenario for which an autopsy was requested. The text of the query reads as follows:

> ...in the matter of the query from London regarding the individual who fell ill with *choli ha'even b'kiso* [lit., a stone in his pouch or bladder], underwent surgery, as was customary practice for this particular ailment, and subsequently died. The elders of the city were then asked if it would be permissible to dissect the corpse in the relevant [anatomical] area for the express purpose of learning how better to deal with a similar surgical case, should one arise in the future. The results of such a dissection would potentially allow the physicians to minimize the surgical incision for subsequent patients, thereby decreasing the mortality of the procedure. Is such a procedure forbidden because of the desecration to the body, or permitted due to the potential future life-saving value of the information?[3]

The Hebrew medical terminology employed by Rabbi Landau may seem ambiguous to the modern reader. The phrase "*even b'kiso*" is translated literally as "a stone in his pouch [or bladder]." Taken in its medical context, the term refers to calculi, or stones, found in a hollow organ, the likely possibilities being either the gallbladder or urinary bladder. Contemporary authors quoting this passage are often unsure which of the two it is.[4] The word "*kis*" in modern Hebrew medical terminology can refer to either the gallbladder or the urinary bladder, but, in either case, the noun is usually qualified (e.g., *kis hamara* or *kis hasheten*). When the term *"kis"* appears alone, it may be difficult to determine which of the two is being discussed. Only an understanding of the medical history, in conjunction with the context, will provide us with a definitive answer.

PASSAGE FROM RABBI YAAKOV EMDEN (D. 1776)

In the context of addressing the halakhic aspects of the risks and benefits of certain procedures, Rabbi Yaakov Emden also discusses a medical condition called "*even b'kis,*" for which surgery is indicated:

> ...some choose to risk their lives in order to save themselves from great suffering, such as those who undergo surgery for a stone [*even*] in the *kis*, the penis, or the kidneys, which causes them tremendous pain and anguish. These people undergo the procedure as they wish, without rabbinic consent, for sometimes they are healed thereby. However, they should exercise caution. Anyone who does not suffer harm from the pain should not undergo the procedure... It is not permitted for a person to enter a situation of potential danger, even though many have done so before and been saved. Many have also done so [undergone surgery] and hastened their deaths thereby. It is therefore not permitted [to undergo surgery for the aforementioned conditions] under any circumstance...[5]

What is the medical condition of "*even b'kis*" mentioned by both Rabbis Landau and Emden, and are they both referring to the same disease? How was this disease treated in the 18th century, and how effective was the treatment? Does the history of this ailment and its treatment have any bearing on the halakhic interpretation of these texts?

MEDICAL HISTORY

Since "*even b'kis*" could theoretically refer to either urinary bladder or gallbladder stones, it is essential to discuss the relevant history of both conditions.[6] Furthermore, it is clear from both of the aforementioned sources that surgery was the customary treatment for this disorder in the 18th century.

While urinary bladder stones have been observed and treated since antiquity,[7] it was not until roughly two thousand years later, in 1341 CE, that gallstones were first described by Gentile da Foligno.[8] What probably accounts for this remarkable discrepancy is that urinary bladder stones are often emitted outside of the body, becoming visible to the naked eye. Once visualized, the stone was understood to be the cause of disease, and efforts were made to surgically remove stones that were too large to exit the urethra. In addition, urinary bladder stones could be palpated via rectal examination, a fact known in antiquity and used to assist in the performance of urinary bladder surgery.[9] Gallstones, on the other hand, do not exit the body and are not externally palpable. In addition, pain in the upper right and mid-abdomen is attributable to many different disease processes. As a result, the existence of gallstones only became known through autopsy, which, in fact, is how they were discovered by da Foligno.[10]

Although the existence of gallstones has been known since the 14th century, it was not until the late 18th century that a Frenchman named Herlin suggested

that the human gallbladder be removed for the treatment of gallstones. The first such surgery was successfully performed only over a century later by Carl Johan August Langerbuch of Berlin in 1887.[11]

Urinary bladder stones, on the other hand, have not only been observed since antiquity, they have also been surgically treated since that time.[12] The medical condition was universally referred to as "the stone,"[13] since no other stone was known.

In 18th-century England (the time and place from whence the query to Rabbi Laudau originated) there were a number of major advances in the field of urinary bladder stone surgery. In the early part of the century, John Douglas (d. 1759) developed a new procedure called the "high" or suprapubic lithotomy.[14] William Cheselden (1688–1752), although initially an advocate of the "high" lithotomy,[15] pioneered a new variation on the old technique, known as the "lateral" lithotomy.[16] The so-called "high" lithotomy was associated with terrible complications and very high mortality rate. Only in the hands of the expert stone-cutter William Cheselden, using the modified lateral lithotomy, did the mortality rate of urinary bladder surgery decline significantly.[17]

In light of the above, it is quite clear that the query posed to Rabbi Landau refers to a case of urinary bladder stones. For only in cases of urinary bladder, not gallbladder, stones was surgery the customary practice in the late 18th century. Although surgery for the treatment of gallstones was theorized at that time, another century passed before such surgery was successfully performed.[18] It was therefore not necessary for the query to specify which "*kis*" (bladder) contained the stones, as it would have been evident to any contemporary reader that only patients with "the stone" (i.e., urinary bladder stones) underwent surgery. In addition, 18th-century London was a place of surgical experimentation in the field of urinary bladder surgery. It is possible that the autopsy requested in London was on a patient who had died while undergoing experimental surgery, a hypothesis supported by the text of the query. There is greater motivation in such a case to understand the cause of the adverse outcome, and a surgeon is more likely to be forceful when requesting an autopsy from the family. This may explain the need to involve a rabbinic authority such as Rabbi Landau in the case.

The use of the phrase "*even b'kis*" by Rabbi Emden is less ambiguous, and clearly refers to urinary bladder stones, as it is mentioned in the context of a discussion of stones found in other areas of the urogenital system, such as the kidney and the penile urethra.

HALAKHIC RAMIFICATIONS

Having established that Rabbi Landau was discussing a case of urinary bladder stones, what are the possible halakhic ramifications? In his analysis, Rabbi Landau developed a principle that would become the cornerstone of legal discussions on the halakhic permissibility of performing autopsies. The existing prohibitions against performing an autopsy could be waived, he claimed, if there was a "choleh l'faneinu," literally translated as "a sick person before us."[19] The interpretation of this key phrase has been a subject of debate.[20] Interpreted in its narrowest sense, it means that an autopsy is permitted only if there is an existing, specific, designated beneficiary of the resulting information. Alternatively, the interpretation might be broadened to include use of the information for treatment of a prevalent illness, since such an illness might be broadly defined as a "*choleh l'faneinu.*"[21]

To argue the latter interpretation, either as the opinion of Rabbi Landau or as an independent extension of Rabbi Landau's principle, one must consider how R. Landau himself actually ruled, given the prevalence of the disease in question. Here, an understanding of medical history can be helpful. Urinary bladder stones was a very prevalent disease in 18th-century Europe. For reasons which remain unclear, however, the incidence of urinary bladder stones in Europe has steadily declined over the centuries to the point where it is now considered a rare condition.[22] This knowledge of the changing incidence of the disease is important for the interpretation of Rabbi Landau's responsum, as we must know what the incidence of the disease was at the time he penned his response. Despite the high prevalence of urinary bladder stones in 18th-century Europe, R. Landau still ruled that an autopsy to potentially benefit other patients would be forbidden.

Not only is an understanding of the prevalence of a disease important, an awareness of the mortality rate of a disease at a particular time may also impact on the interpretation of Halakhah, as evidenced by the aforementioned passage from Rabbi Emden. Rabbi Emden considered the mortality rate from surgery for urinary bladder stones too high to allow the procedure to be performed routinely. The modern reader should be aware of the mortality rates at the time Rabbi Emden was writing, as compared to today, in order to properly interpret his decision. The mortality rates for urinary bladder stone surgery in the 18th century were highly variable, depending on the surgeon and the procedure used, and could reach as high as 40–50%.[23] In contrast, the mortality rate today for such surgery is less than 1%.[24] It is clearly imperative to appreciate this discrepancy when interpreting the halakhic decision of Rabbi Emden. What mortality rate did he consider too high to uniformly prohibit the operation?

If one were to erroneously assume that the mortality rates for urinary bladder stone surgery in the 18th century were similar to those of today (0.5–1.0%), or even, for example, ten times higher than today (roughly 5–10%), then the opinion of Rabbi Emden is very strict, completely forbidding routine surgery with a relatively low mortality rate. However, knowing that the mortality rates were significantly higher leads us to a more lenient interpretation: high risk procedures, as defined and prohibited by Rabbi Emden, would involve mortality rates up to 40–50%. Procedures with lower mortality rates may have been permitted.

CONCLUSION

The application of Halakhah to medical and scientific advances is a continuing process. As we invariably utilize pre-modern rabbinic sources for this endeavor, it is imperative to realize that since medical knowledge and practice has changed radically over the generations, each source must be understood in its proper historical context. This approach may enhance the ability of *poskim* to better extrapolate from pre-modern rabbinic sources to our contemporary medical halakhic dilemmas.

NOTES

1 See E. Reichman, "The Halakhic Definition of Death in Light of Medical History," *Torah U-Madda Journal* 4 (1993), 148–174; *idem*, "The Rabbinic Conception of Conception: An Exercise in Fertility," *Tradition* 31:1 (Fall 1996), 33–63; *idem*, "The Impact of Medical History on Medical Halakha: The Case of Mumia," in *Pioneers in Jewish Medical Ethics*, ed. F. Rosner (Northvale, NY: Jason Aronson Press), in press.

2 *Noda BiYehudah*, Y.D., 210. Reviews on the halakhic aspects of autopsy can be found in F. Rosner, *Modern Medicine and Jewish Ethics* (Hoboken, NJ, 1991; 2nd edn.), pp. 313–333; A. Steinberg, *Encyclopedia Hilkhatit Refuit* 4 (Jerusalem, 1994), pp. 528–599. See also K. Kahana, "Autopsy in Halakhah — A Bibliography" (Hebrew), *HaMa'ayan* 7:2 (1966), 43–72.

3 Free translation by author.

4 See I. Jakobovits, *Jewish Medical Ethics* (New York, 1959), p. 146, who translates the phrase as a "calculus in the bladder," a literal translation, without specifying which bladder. F. Rosner, "Autopsy in Jewish Law and the Israeli Autopsy Controversy," in *Jewish Bioethics*, ed. F. Rosner and J. D. Bleich (New York, 1979), p. 333, states, likewise, that the case refers to a bladder calculus. In a parenthetical note, however, he adds, "probably urinary bladder, but possibly gallbladder."

5 *Mor U'Ketzia*, n. 328. Free translation by the author. For an exposition on the halakhic aspects of experimental procedures see J. D. Bleich, *Contemporary Halakhic Problems* 4 (1995), pp. 203–217.

6 This essay addresses only the historical aspects of these diseases that are directly relevant to our discussion. For a comprehensive study on the history of urinary bladder stones see H. Ellis, *A History of Bladder Stones* (Oxford, 1970). For an historical overview of the treatment of gallstones see K. Haeger, *The Illustrated History of Surgery* (New York, 1988), pp. 225–228.

7 We find reference to surgery for kidney stones already in the Hippocratic Oath: "I will not cut persons laboring under the stone, but will leave this to be done by men who are practitioners of this work" [trans. by Francis Adams, *The Genuine Works of Hippocrates* (Baltimore, 1939)]. The oath does not condemn surgery *per se*, only if performed by those untrained in this procedure.

8 See F. H. Garrison, *An Introduction to the History of Medicine* (Philadelphia, 1929; 4th edn.), p. 167; Haeger, note 6, pp. 225–226. Haeger claims that gallstones were first described by Alexander of Tralles (525–605 CE), the Byzantine physician, but Garrison makes no such mention. In addition, Thorndyke, in his survey of the works of Alexander of Tralles, makes no mention of gallstones. See Lynn Thorndyke, *History of Magic and Experimental Science* 1 (New York, 1923), pp. 575–584.

9 For a description of an early surgical procedure by Celsus (25 BCE-50 CE) using this technique, see Haeger, note 6, pp. 51–52.

10 But if such is the case, why were gallstones not seen at autopsy at a much earlier date? Did gallstones not exist until the 14th century? The answer to these questions is that gallstones most likely existed before the 14th century, but autopsies did not. For reasons which have been debated, anatomical dissection and autopsies were almost universally banned in the Western world until 14th-century Italy, when people like Mundinus (1270–1326) introduced anatomical dissection into the medical curriculum. On this topic see, for example, C. D. O'Malley, *Andreas Vesalius of Brussels* (Berkeley, 1964), pp. 1–20; Ludwig Edelstein, "The History of Anatomy in Antiquity," in *Ancient Medicine* (Baltimore, 1967), pp. 247–302; Charles Singer, *A Short History of Anatomy and Physiology from the Greeks to Harvey* (New York, 1957); Mary Nivens Alston, "The Attitude of the Church Towards Dissection Before 1500," *Bulletin of the History of Medicine* 16:3 (October, 1944), 221–238.

11 See J. M. Norman, ed., *Morton's Medical Bibliography* (Cambridge, 1991; 5th edn.), p. 567, no. 3627.

12 Ellis, note 6, pp. 4–6. "Cutting for the stone" was one of the three elective surgeries performed since antiquity. The other two were circumcision and trephination of the skull.

13 Bernard Knight, *Discovering the Human Body* (London, 1980), p. 75; Ellis, note 6, p. 1.

14 T. Woodward, *Lithotomia Douglassiana; or, an account of a new method of making the high operation, in order to extract the stone out of the bladder* (London, 1720).

15 Haeger, note 6, p. 147.

16 A. Reid, "A Remarkable Case of a Person Cut for the Stone in the New Way, Commonly Called the Lateral; by William Cheselden," *Philosophical Transactions* 44 (1746), 33–35.

17 Haeger, note 6, p. 147.

18 Samuel James Meltzer (1851–1920) was the first to suggest non-surgical drainage of the gallbladder in his "The Disturbance of the Law of Contrary Innervation as a Pathogenetic Factor in the Diseases of the Bile Ducts and the Gallbladder," *American Journal of Medical Science* 153 (1917), 469–477.

19 Rabbi Moses Sofer coined this phrase in

20 Much has been written on this topic. Se
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NATHAN AVIEZER

THE ANTHROPIC PRINCIPLE:
What is it and Why is it Important for the Believing Jew?

In recent years, it has become clear to many scientists that the universe appears *as if* it were specifically designed for the existence and well-being of human beings. This expresses itself in two ways: (i) very slight changes in the laws of nature would have made it impossible for life to exist, and (ii) human life would not have been possible were it not for the occurrence in the past of a large number of highly improbable events. This phenomenon has attracted considerable scientific attention and has been named the anthropic principle. Illustrations of the anthropic principle will be presented, and its importance for the believing Jew will be discussed.

1. INTRODUCTION

In recent years, it has become clear to many scientists that the universe appears *as if* it were specifically designed for the existence and well-being of Man. This phenomenon, which has attracted considerable scientific attention, has become known as the *anthropic principle*,[1,2] from the Greek word "anthropos," which means "man." The anthropic principle expresses itself in two ways: (i) very slight changes in the laws of nature would have made it impossible for life to exist, and (ii) human life would not have been possible were it not for the occurrence in the past of a large number of highly improbable events. Whereas the secular scientist sees such a sequence of occurrences as mere "lucky accidents," the believing Jew sees in them the guiding hand of the Creator.

Our subject consists of two parts: first, an explanation of exactly what is meant by the anthropic principle, illustrated by a number of examples, and second, a discussion of the importance of the anthropic principle for the believing Jew. The first topic is purely scientific, whereas the second topic deals with religion. This distinction must be kept clear because the words commonly used by secular scientists in discussing the anthropic principle often sound remarkably similar to those used by the rabbis!

19 Rabbi Moses Sofer coined this phrase in his responsum, Y. D., 336.

20 Much has been written on this topic. See, for example, *Chazon Ish*, *Hil. Aveilut*, 208:7; Shlomo Goren, "The Study of Anatomy in Medical School," (Hebrew), *Meorot* (Spring 1980), 5–17; Y. Levi, "*HaCholeh L'faneinu,*" *Assia* 1 (1989), 202–215; J. D. Bleich, *Contemporary Halakhic Problems* 4 (New York, 1995), pp. 188–192.

21 See *Chazon Ish*, note 20. However, his remarks expanding the principle of "*choleh l'faneinu*" are restricted to contagious diseases (e.g., plague), where the potential for currently healthy people to contract the disease is great, and the disease is truly "*l'faneinu,*" present, albeit not in a specific location. Many have argued that in the modern era, when information is disseminated both widely and rapidly, there is virtually always a figurative, or sometimes literal, "*choleh l'faneinu.*" See Levi, note 20.

22 Ellis, note 6, pp. 66–67. Ellis quotes the study of Ridley Thomas, published in the *British Journal of Urology* in 1949, who analyzed the total incidence of vesical calculus (i.e., urinary bladder stones) at Norfolk and Norwich Hospital over the period from 1871 to 1947. This data convincingly shows the precipitous decline of the incidence of vesical calculus during that time. Ellis also quotes the work of D. A. Anderson, who wrote in 1966 that primary urinary bladder stone was extremely rare in northern Europe, although occasionally seen in the southern parts of Europe. Ellis himself ponders the mystery of why urinary bladder stone was so frequent in Europe throughout medical history, yet so rare in the 20th century.

23 Frère Jacques, whose name has been perpetuated in the well-known nursery rhyme, and who is credited with developing the lateral approach to lithotomy, operated on 60 patients for urinary bladder stone from July to August 1698. Of these 60 patients, 25 died, 13 were cured, and the rest remained hospitalized with surgical complications. See Ellis, note 6, p. 15. William Cheselden, on the other hand, reported his statistics in 1778 — only 20 deaths in 213 operations, a mortality rate of just under 10%. These results, however, were considered unusually favorable for his time. See Ellis, note 6, p. 20.

24 Today there are three methods employed for the removal of urinary bladder stones — open surgery, cystolithotripsy (breaking up the stones via a tube placed through the urethra into the bladder), and extracorporeal shock wave lithotripsy (breaking up the stones through sound waves transmitted from outside the body) — each method with its own merits. See V. Bhatia et al., "Vesical Lithiasis: Open Surgery Versus Cystolithotripsy Versus Extracorporeal Shock Wave Therapy," *Journal of Urology* 151 (3) (March 1994), 660–662. The mortality rates for cystolithotripsy and extracorporeal shock wave therapy are negligible. It would be unfair to compare these mortality rates to those of the 18th century, as these procedures are products of the modern era. In addition, shock wave therapy is not even a surgical intervention. Open surgery today, however, is in concept similar to procedures performed in the 18th century. It is therefore the mortality rate of this procedure to which I refer in the text and use as the basis for comparison.