

Talmudic Pathologies of the Oral Cavity

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In a noteworthy case published in *The British Medical Journal*, a 79-year-old man presented to his physician with severe discoloration of his lower legs [1]. After evaluating that lung, kidney, liver, and blood function were all within normal limits, the doctors were puzzled as to what caused the discoloration and swelling. A complete blood count test was ordered, and the patient did not respond to anticoagulants or antibiotics. Ultimately, after evaluating the blood count data, the physicians noted that the patient was deficient in vitamin C, and the discolorations of the skin were diagnostic of a very ancient disease called scurvy. Scurvy has many contemporary implications and is a source of study in modern medicine, but it also has been associated with ancient Talmudic pathologies. Exploring literature, both ancient and current, can shed light on the nature of this pathology as well as the Talmud's multi-faceted medical contributions.

On a basic scientific level, scurvy is caused by a deficiency in vitamin C (ascorbic acid). It often manifests itself in patients with signs of anemia, spontaneous bleeding, swelling, and exhaustion [2]. Vitamin C is essential for the body's production of collagen, which lends support to the tissues and blood vessels of the body. An additional function of vitamin C is that it assists in the absorption of iron. Without this essential role, red blood cells would be structurally deficient and spontaneous bleeding would occur. Low vitamin C intake is often associated with anemia for this very reason. Individuals at risk for scurvy are usually elderly people, or those who have high levels of alcohol intake, coupled by a low consumption of fruits and vegetables. Increasing one's intake of daily vitamin C can lead to a dramatic improvement in one's skin condition.

Oral health care providers can often detect the presence of scurvy by evaluating the condition of a patient's gums. Gums that bleed readily and peel from the bone and teeth, with areas of gingival overgrowth and inflammation, can immediately trigger a differential diagnosis including scurvy and blood tests must be performed. From a laboratory perspective, scurvy can be diagnosed by detecting less than 11 umol/1 liter of Vitamin C in a patient's blood count [2]. Generally, physicians recommend oral supplements to combat the low vitamin C levels. The

patient described above was given a prescription of 500 mg for seven days and a drastic improvement in his skin condition was noted.

As far as the history of the pathology, scurvy was first described in 1795 amongst British sailors on naval voyages. In fact, it is possible that the documentation of scurvy dates back to ancient Talmudic times, much earlier than the 18th century. On a Biblical level, it is clear that oral diseases had an influence on ancient Jewish populations and their surrounding neighbors. Yerachmiel Bratt, in his translation of *Ben Ish Chai's Megillat Esther* commentary, stated that the Jewish nemesis, Haman, was missing many of his teeth [3]. The king's command, in Chapter 6, that Haman maintain all previously articulated honors for Mordechai, was based upon the fact that Haman had a speech impediment caused by his multiple missing teeth. Thus, the king suspected Haman would speak differently when marching Mordechai through the streets and alter the words he previously committed to enunciate. This insight can also explain why Haman's voice was not recognized by his daughter, as noted in a famous *midrashic* interpretation [3].

The Talmud, in a number of different contexts, discusses cases of oral pathology. A gum disease described in the Talmud, known as *tzafdinah*, is often associated with the disease known as scurvy. Dr. Rosner noted, that the evidence connecting this disease to what is currently identified as scurvy, was unclear [4]. Nevertheless, many Talmudic translations continue to interpret *tzafdinah* as scurvy. The Talmud *Yerushalmi*, in *Avodah Zarah* (2:2), related the story of Rabbi Yochanan, who pursued active treatment of his gum disease from a Roman matron. The Talmud related that placing the stones of unripe olives upon the inside of the gums helped cure his symptoms. The Talmud also related that the particular disease Rav Yochanan suffered from resulted from eating certain wheat and fish products and it often presented itself as bleeding gums.

Rashi provided a definition for *tzafdinah* as "a sickness of the teeth and gums which begins in the mouth and ends in the intestines and is dangerous to life" [4]. Utilizing this interpretation, many classic and contemporary translations of the Talmud considered this "gum-bleeding disease" to be scurvy. However, Julius Preuss, in his book, *Biblical and Talmudic Medicine*,

strongly opposed this interpretation and considered the disease mentioned to be a form of stomatitis, a derivative of a condition caused by herpes simplex virus-1 [5].

An additional Talmudic source, the *Mishna* in *Yoma*, stated that Rabbi Matthia permitted pouring medicine into the back of one's mouth on *Shabbat*. There is a debate amongst classical Talmudic commentators as to whether the medication was applied to heal the throat or the teeth. *Tur*, *Tosafot Yom Tov*, and *Rambam* all interpreted this passage to be referencing a form of tooth pain, which involved rotting of the gums. In direct opposition, *Rif* and *Rosh* interpreted this story in a literal fashion, assuming that the medication was intended for a disease of the throat. Once again, the precise connection between a Talmudic passage and scurvy is unclear and subject to debate. Dr. Rosner presented an additional Talmudic link to tooth pain, as it relates to the story of Rabbi Yehuda HaChassid, who suffered from a toothache for thirteen years [4]. The exact interpretation of this story is a matter of debate, and can never precisely be identified, given the wide range of oral pathologies known today. However, the only matter of certainty that can be gathered from these sources is that *tzafdinah* is a Talmudic pathology pertaining to the teeth and gums. Nevertheless, given the lack of clarity in the interpretation of *tzafdinah*, it becomes difficult to draw conclusions for contemporary *halachic* purposes. For example, violating the prohibition of taking medication on *Shabbat*, as Rav Yochanan did, for diseases of the mouth such as scurvy, cannot be easily derived from this discussion because the translation of the pathology was not clear.

In modern medicine, an additional condition that has roots in ancient Jewish text is halitosis. Generally, it is known that bacteria of the oral cavity contribute to the persistent foul odor of the mouth, which is diagnosed as halitosis. Hydrogen sulfide, indole, and cadaverine are just a few of the poor smelling molecules released from discomposed amino acids in the mouth. The tongue, which accumulates a high count of oral bacteria and is often neglected as far as oral hygiene is concerned, is an important source of bad breath. Similarly, fasting and sleeping lead to dryness of the mouth that contribute to halitosis. Salivary flow is essential to the efficient removal of bacteria and debris that accumulate in the mouth [6]. When examining cases of halitosis in the Talmud, one

issue that arises is that the etiology of halitosis can be multi-faceted. In fact, the causes both can be localized or systemic. Cases of bad breath mentioned in the Talmud also may result from periodontitis or diabetes. Thus, it is not clear that halitosis as the sole diagnosis would be precise in those circumstances. The lack of vitamin C in the diet of those individuals suffering from halitosis, or from an insufficient intake of water, also may have contributed to the frequent description of bad breath in the Talmud [6].

In a dramatic and somewhat surprising passage, the Talmud (*Ketuvot* 75a) noted that halitosis was grounds for a divorce between husband and wife. The Talmud suggested that *kohanim* suffering from bad breath should chew on peppers as an antidote. Otherwise, they would not be able to perform their services in Temple. *Rashi* noted that this antidote would not be acceptable for a married couple, because their frequent conversations would not allow for them to be constantly chewing on peppers. In contemporary dental care, improving one's oral hygiene via increased brushing and cleaning of the tongue can lead to an improvement in halitosis. Similarly, evaluating one's diet and intake of foul smelling substances can lead to a reduction in the severity of halitosis [7].

According to Shifman one of the interesting clinical insights that is present in the Talmud's discussion of halitosis is that both mastic gum and oil-water mouthwashes were used to combat halitosis [6]. In modern day dental practice, both of these options are utilized. Mastic gum is derived from a Mediterranean tree and was used to freshen breath. Water, salt, and oil were mixed in a solution designed for treating Rav Yochanan's gum condition described above. In the 1980's, anti-bacterial mouth-washes were developed to work in a similar fashion as the Talmudic remedies [6].

In a broad sense, the Talmud offers an interesting historical and *halachic* perspective into oral pathology. Gingivitis, scurvy, halitosis and other unknown conditions described by sages in Talmudic times remind scientists and talmudists alike that the fight against disease of the oral cavity is an ongoing process that requires further study in both modern and ancient texts.

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