Worth Their Weight in Gold: Prosthodontics in the Talmud

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Prosthodontics is one of the primary areas of dentistry that focuses on dental aesthetics, concentrating on cosmetic restoration and replacement of teeth, specifically the placement of dental prostheses. Originating in the 18th century, prosthodontics first used materials such as bone or ivory to replace or repair teeth, as well as minerals like gold, lead, and tin. Progress in this area has been accelerated as new materials such as porcelain powders, various cements, and more recently, acrylic resins, have been developed. [1] Although aesthetic dentistry is a relatively new field, evidence of tooth restoration during the time of the Sages is apparent in the Talmud, dating back to 200 C.E., with significant attention given to the cosmetic appearance of teeth in that era.

In Gemara *Shabbat* 64b-65a, the Mishna discusses the case of a woman who walks into the public domain on Shabbat with various different items on her person. One of the items discussed is a false tooth: " יוצאה אשה...שן תותבת שן של זהב רבי מתיר וחכמים אוסרים"

"A woman who goes out with… an artificial tooth, [or] a gold tooth, Rebbi permits, but the sages forbid it." Rebbi and the sages disagree on the permissibility of walking in the public domain on Shabbat with a false tooth.

Focusing on the two different false teeth mentioned, Rashi comments that here, an artificial tooth (שן תותבת) and a gold tooth (שן של זהב) are one and the same. In contrast, the majority of commentators explain that these two phrases refer to two different types of false teeth. There are multiple opinions on the definition and origin of the word תותבת. תותבת can be translated as "foreign," perhaps referring to a material foreign to the oral cavity, such as wood or ivory. It can also be translated as "cover," indicating a crown-like structure that sits on top of the tooth. R. Ovadia of Bartenura compares the Aramaic word תותבת to the Hebrew word תושבת, replacing the letter *taf* with a *shin*. תושבת means "to sit" and thus a שן תותבת is described by R. Ovadia as something that "rests upon the cheeks in place of the tooth that fell out." [2] It is clear that the early art of prosthetics existed during this period and was a relevant topic of discussion among the sages.

The commentators also offer a multitude of explanations of the purpose and function of a false or gold tooth. R. Ovadia of Bartenura describes a scenario that would necessitate a gold tooth: a tooth's appearance is changed due to mold, and is then covered with gold. It seems as if in the time of R. Ovadia, tooth decay was attributed to mold that ate away at the tooth. Rambam offers a slightly different perspective, explaining that a gold tooth is placed on top of a red or black one. A red tooth refers to a case where dental caries (a cavity) attacks the inner part of the clinical crown, leaving the outside enamel layer intact. Blood vessels in the pulp provide the red color that is visible through the thin layer of enamel, making the tooth appear red. A black tooth denotes a non-vital tooth that has lost its natural color due to the staining of dentin by degraded blood cells following a hemorrhage in the pulp. Rambam explains that the gold tooth is placed on a tooth that has a strange appearance in order to conceal the defect. [3] It is interesting to note these early reasons given for tooth decay, as well as the early development of gold crowns inserted to restore the tooth.

It seems that in the time of the Talmud, the false tooth, whether made of gold or another material, was inserted temporarily and remained in place due to pressure from the surrounding teeth. The missing or decayed tooth was replaced and retained by mechanical forces, held in place by proximal tooth friction. Today we know that this method is ineffective, as the pressure reduces greatly over time. This reduction of pressure explains the transient nature of the false teeth described in the Talmud. [3]

The Gemara *Shabbat* 65a discusses the words of the Mishna, explaining why walking into the public domain with a false tooth may pose a *halachic* issue: "R. Zera said: They taught this only of a gold [tooth], but as for a silver one, all agree that it is permitted. Abaye said: Rabbi, R. Eliezer, and R. Simeon b. Eleazar all hold that whatever detracts from a person['s appearance], one will not come to display it." Rashi explains this Gemara, stating that the prohibition of walking in the public domain only applies to a gold tooth. A gold tooth is very valuable, and when walking in the public domain a woman may take it out to display, and then proceed to violate the prohibition of carrying. A silver tooth, on the other hand, is not as valuable and would not pose an issue. Rashi also quotes an additional, dissenting opinion of his teachers. Gold looks different than the other teeth, so the concern is that the woman may remove her false tooth and carry it in her pocket out of fear of being mocked. Silver, on the other hand, has similar coloring to natural teeth, so there is no fear that the woman will remove and carry it in the public domain out of embarrassment.

Both of these opinions are reflected in the words of the Gemara: "whatever detracts from a person's appearance, one will not come to display it." According to Rashi's first opinion, the valuable gold tooth is viewed as something

that cosmetically enhances a person's appearance, and therefore there is concern that the woman would remove it to display it. According to the opinion of Rashi's teachers, the gold tooth does not match the other teeth and would therefore detract from a person's appearance, leading the woman to remove and carry the false tooth. In both cases, a silver tooth would not cause a problem, being both less valuable than gold and similar to the color of a natural tooth. This Gemara clearly displays the rabbis' concern with the aesthetic appearance of the prosthetic tooth and its practical ramifications in *halacha*.

Another mention of aesthetic and prosthetic dentistry in the Talmud is in *Nedarim* 66, where a scenario is recounted in which a man made a *neder* (vow) not to marry a specific woman because she was uncomely. R. Yishmael beautified her and then permitted the man to marry her because the *neder* became invalid once she was beautified. The sages disagree and say the *neder* remains in place. The Gemara asks: how did R. Yishmael beautify her? The answer given is that he replaced an unsightly false tooth with a gold tooth. The Ran explains the logic of R. Yishmael, saying that R. Yishmael follows the opinion of R. Eliezer, who considers a *nola*d—a new occurrence that did not exist at the time the oath was made—basis upon which to annul a *neder*. The beautification of the woman created a scenario of *nolad*—her beauty was a new occurrence that did not exist at the time the oath was made, and the man could not be held to his original vow. The Rosh disagrees with the Ran, saying that R. Yishmael did not agree with the opinion of R. Eliezer regarding *nolad*. Rather, R. Yishmael believed that all Jewish women are inherently beautiful, and all ugliness can be attributed to a state of poverty and external factors. The man made the *neder* on the basis that the woman was inherently ugly. If it was impossible for the woman to be inherently ugly, the *neder* is considered a *neder ta'us,* a vow that was made in error, and is invalid. [4]

It is possible that the Ran may have had a similar opinion to Rashi's commentary on *Shabbat* 64b. According to Rashi's first explanation, a gold tooth is more attractive than a silver or a normal false tooth, and would cause a woman to remove it to display to her peers. R. Yishmael's replacement of the substitute tooth with a gold tooth provided aesthetic enhancement in a completely new way. It was a case of *nolad*, as the tooth caused her to become beautiful after the time the *neder* was made. The Rosh may have agreed with the explanation of Rashi's teachers, that a gold tooth does not cosmetically match the other teeth, and would cause a woman to remove it due to embarrassment. In the case of the Gemara *Nedarim*, the gold tooth was fashioned to cover a gap left by a missing tooth, or to replace a black false tooth. It was not a case of *nolad*. The woman was already beautiful, but the black tooth made her appear unattractive, and by removing it and replacing it with a gold tooth the unsightliness was removed as well. [4] It is remarkable that the Talmud places such weight on the cosmetic status of the prosthetic, relying on its relative beauty to provide a basis for the *halachic* ruling.

The commentaries continue the discussion of the cosmetic status of the golden tooth. According to Rashi's teachers, a gold tooth was a source of embarrassment and would detract from a person's appearance. Therefore, the Maharsha asks: why was R. Yishmael's act of replacing the woman's fake tooth with a gold tooth an act of beautification or reduction of embarrassment? R. Yaakov Emden proposes two answers, one of which was that the tooth that R. Yishmael placed was not actually made of gold. It was made of silver, but the dental work put into fashioning the tooth was "worth its weight in gold". A silver tooth, as mentioned previously, is not considered a source of embarrassment. The other insight given by R. Yaakov Emden is that the woman's teeth were discolored and stained, and appeared yellow, and thus the gold tooth blended in perfectly. [4]

The commentaries offer further elucidation. The *Teshuvat Shoel Umeishiv* explains that originally the woman had an unsightly wooden tooth which caused her extensive embarrassment. In comparison, the gold tooth, although still not ideal, was an improvement and greatly reduced the embarrassment she felt. The *Teshuvat Rav Pealim* suggests a different resolution to this problem, saying that R. Yishmael fashioned the tooth out of white gold. White gold appears even more natural than silver, because it doesn't tarnish, and matches the natural color of teeth well. This would both beautify the woman and reduce her embarrassment. [5] The sages of the time were sensitive to human nature, realizing the effect the unsightly tooth could have on the woman's psychological well-being. Today, we are aware that improving dental aesthetics can psychologically affect the patient, resulting in improved confidence and self-esteem. [6]

Although prosthodontics is a relatively new field, evidence of aesthetic and cosmetic dentistry is clearly visible in the Talmudic literature, namely in *Shabbat* 65 and *Nedarim* 66. The commentaries show early insights into restorative dentistry, including the development of crowns, the usage of minerals in replacing teeth, and tooth decay. Additionally, the aesthetic nature of prosthodontics is discussed extensively in the Talmud, as the cosmetic status of the false tooth has *halachic* ramifications on various issues. The sages also are in tune with the positive psychological effects of improved cosmetic dentistry. These Talmudic sources provide the field of prosthodontics with important historical context, as well as display a significant contrast to the current advances of aesthetic and cosmetic dentistry.

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