Testing the Efficacy of Three Medieval Tooth Cleaners

Presented by Lady Eulalia de Ravenfeld, October AS XXXXIII

General Remarks

The topic of medieval tooth care is delightfully tangled: there are few certainties and a profound variety of myths. Generally speaking, the popular image of nothing but black teeth and rotting stumps occupying the medieval mouth is probably erroneous. For one thing, although it varied throughout our period of study, overall sugar consumption was lower than today. Additionally, a rougher and less processed diet would have worn away small caries (Slaine ni Chiarain).

Medieval people do appear to have cared about their teeth, and there are references to various products or procedures intended to clean the teeth or sweeten the breath. To explore some potential methods of tooth cleaning and care, I chose three preparations from the *Compendium Medicinae* of Gilbertus Anglicus: a mint "mouthwash" made with wine, rubbing the teeth and gums with a linen cloth, and two fresh herbs to be chewed.

I chose these three items largely because they seemed the most likely, from a modern perspective, to actually clean the teeth and prevent decay. In order to test how well each cleaned the teeth, I made use of a product (designed for kids) that temporarily stains the teeth blue – the extent to which my teeth remained blue after cleaning would give me a rough indication of how effective that cleaning method was.

The *Compendium*

The *Compendium Medicinae* is a 13th century medical treatise in Latin. Gilbertus Anglicus was a famous physicians of his time, and the *Compendium* is a good reflection of the state of medical practice and knowledge in the first half of the 13th century (Handerson). Given his byname of "Anglicus," Gilbertus may have been living and working on the continent (where he received his medical training) when he wrote this work.

The *Compendium* was also one of many medical works translated into the vernacular in the 15th century, and it is a Middle English translation dating from around 1400 that I have used as my source material. The complete text of the translation, with commentary, is published as Faye Marie Getz's *Healing and Society in Medieval England*. (There are some differences between the Latin and the vernacular version, which are covered in detail in Getz's "Gilbertus Anglicus Anglicized.") Such vernacular medical works were widely owned, both by those in medical professions (from formally educated physicians to those who received "on the job" training such as apothecaries) and those without (Getz, Anglicized).

The medical advice Gilbertus gives is thus a reflection of a remarkably wide swath of medieval society.

The preparations

The *Compendium* features chapters on "The Mouth," "The Teeth," and "The Tongue and Throat." Within "The Mouth," there is a section entitled "Stinking of the Mouth" which I decided to focus on. Gilbertus notes that among the causes of stinking of the mouth is "corrupcion of (th)e gummes and of (th)e tee(th)" and gives the following recommended course of treatment "if (th)er be no roten flesshe":

> "...let (th)e mou(th)e be wasshe with wiyn (th)at birche or myntis ben y-soden yn. And let (th)e gummes be wel rubbid with a sharpe lynen

cloo(th) vnto (th)ey bleden. And let him ete / origanum, mynte, and peletry, til (th)ey be wel chewid. And let him rubbe wel his tee(th) with (th)es herbis y-chuwid and also his gummes."

In addition to this cleaning treatment, Gilbertus also recommends spiced wine to be drunk, avoiding moist food (such as milk; I suspect this means moist in a humoral sense and not in a literal sense) and to chew and swallow a spice powder. He also advises that the patient should wash well his mouth and rub well his gums and teeth after every meal, which sounds remarkably similar to what a modern dentist would recommend.

For the wine mouthwash, I simmered approximately an ounce of fresh spearmint in a bottle of white wine for about 15 minutes, leaving it covered. To use this, I swished it around in my mouth and spit it out. "Y-soden" could also be interpreted as adding fresh mint to wine and letting it sit over a period of time. The mint used may also have been dried rather than fresh, and it's likely that this was intended to have more than one type of mint. There is no indication whether white or red wine (both of which would have been available) is intended. I decided to simmer this as I thought it would lead to a stronger mint flavor, and also because I was pressed for time; in the future, I would like to try this without simmering. I used fresh mint as most of my cooking research has suggested that when herbs are called for they are fresh. I did not add other kinds of mint as spearmint was simply the easiest to obtain; again, this is something with which I would like to experiment more. I chose white wine as I thought it would be more pleasant combined with mint.

For the linen cloth, I used a small piece of fairly rough linen, which I rubbed vigorously all over my teeth and gums. **For the herbs**, I chewed fresh spearmint and oregano and then used my fingers to rub the masticated herbs around my mouth, spitting them out afterwards. Pellitory (*Anacyclus pyrethrum*), also called Spanish Chamomile, is said to relieve toothache and promote saliva production; the part used is the root, which may be chewed or made into lozenges, a tincture, or a gargle (Grieve). I have never seen it (yet again this is an area where I would like to expand on this project), so I used the other two herbs recommended. Mint is universally used as a breath freshener, and oregano has some antimicrobial properties in addition to its pungency.

Efficacy

Each of these treatments is likely to have been at least somewhat effective at reducing halitosis and general "mouth ooginess" in the absence of rotting teeth or advanced gum disease. Rubbing the teeth and gums with cloth would have removed plaque and stimulated the gums. The alcohol content of wine is actually too low to constitute an effective antiseptic, but a 2007 study found that some organic compounds found in wine are effective against the dental pathogen *Streptococcus mutans* (Thimothe et al). Chewing fresh herbs would have physically scraped off plaque, and the chlorophyll in fresh green plants may have some antibacterial properties. Additionally, both the mouthwash and the chewed herbs would (at least temporarily) freshen the breath.

The results of my (extremely limited) testing were as follows:

Control: I followed my regular tooth brushing routine. There was almost no blue left on my teeth, with a negligible amount remaining in the deepest crannies.

Mouthwash: This did not remove much of the blue. However, it did leave my mouth feeling clean and puckery, and the smell of wine and mint would mask any more unpleasant odors.

Cloth: After rubbing all sides of my teeth and my gums with the cloth, there was still a lot blue in between my teeth, however, everywhere else was quite clean.

Chewed Herbs: These worked even better than brushing my teeth – there was no blue left anywhere in my mouth. The taste was *very* strong, and my mouth felt and smelled fresh and pleasant for a long time afterwards. My lady at first said that I smelled "quite kissable" but later revised this to "like pizza." It took a long time to get all the green out of my grin.

Conclusions

Overall, I believe that many medieval tooth cleaners are more effective than often assumed. I would like to keep exploring this topic in the future, both by using this same test on other cleaning methods and also possibly by seeing if I can culture my own mouth germs to see which tooth cleaners are effective against *S. mutans* and other oral pathogens.

Sources

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