Silver Nitrate Protocol To Manage Cavities That Cannot Be Treated Because Of High Risk-Poor Prognosis

Silver nitrate has been used in dentistry as a treatment for dental caries (cavities) in decades past, initially in 1917 by Dr. Percy R. Howe. It has lost favor since the introduction and use of fluoride – which I do not use. There is also a product called SDF (Silver Diamine Fluoride) which I also do not use because of the fluoride. It can be a solution for cavities that have a high risk, poor prognosis restorative option, such as root surface cavities. Here's how it works:

1. **Bacterial Inhibition:** Silver ions released from silver nitrate have antimicrobial properties. They can inhibit the growth and activity of bacteria, particularly the bacteria responsible for tooth decay, such as Streptococcus mutans. By reducing the bacterial population in the cavity, silver nitrate helps prevent further progression of the cavity.

2. **Hard Tissue Strengthening:** Silver ions can react with the minerals in tooth structure (hydroxyapatite) and form a new compound called silver phosphate. This compound can help strengthen and harden the surrounding tooth structure. It essentially remineralizes the affected area.

3. **Blocking Dentin Tubules:** Silver nitrate can penetrate into the dentin tubules (tiny channels in the dentin layer beneath the enamel) and block them. This can reduce tooth sensitivity associated with cavities.

4. **Preventing Decay Spread:** By arresting the decay process, silver nitrate can stop the cavity from growing larger and spreading to neighboring teeth.

5. **Remineralization:** After the silver nitrate, a solution of nano-hydroxyapatite, nano-silver and therobromine is applied to the surface to enhance the mineral content of the surface.

How it is done: If the surface of the cavity is soft, it is cleaned without anesthetic. The *"infected"* tooth structure has no sensation. *"Affected"* tooth structure does have sensation, so as soon as a sensation is felt, the cleaning process is stopped. The teeth are disinfected with ozone water and gas and then they are kept dry and the silver nitrate is applied and left in place for 60 seconds. The area is rinsed and dried and the remineralization solution is immediately applied.

It's important to note that while silver nitrate can be effective in stopping the progression of cavities, it may lead to the darkening or staining of the affected tooth area due to the formation of silver compounds. This cosmetic change is one of the drawbacks of using silver nitrate, especially for visible teeth.

This process can help in certain situations, however, it is not a substitute for proper oral hygiene and preventive dental care, which are essential for maintaining good oral health and preventing cavities in the first place.

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