

Product review: SDI Riva Star silver diamine fluoride with potassium iodide solution

By Carol Roszel, BSDH, RDH

“Mom, you lost a filling!” I said. “How did that happen? What am I going to do now?” asked my mom from her wheelchair.

I have been my mom’s dental connection since she entered a long-term care facility eight years ago. My mom has beautiful restorative dentistry, courtesy of my dentist dad, and I won't let things slip on my watch. I routinely include oral care in my time with my mom.

In February 2018, I noticed she had lost part of a two-surface amalgam filling on tooth No. 2. I reported it to the nursing staff and requested an exam from the resident dentist. As of April 2018, no dentist had seen Mom, and the rest of the amalgam filling was gone.

Helping my mom

At 91, my mom has congestive heart failure, dementia, and arthritis, and she takes Coumadin. The last thing she needed was a dental emergency or discomfort. It was time to put my RDH hat on and step into action.

I had recently been introduced to [Riva Star](#), a product new to the US market, at a conference. Riva Star is the latest product from SDI. This product uses silver diamine fluoride and a potassium iodide solution to help with tooth sensitivity, dentin caries infections, remineralization, and prevention. This was the perfect opportunity for me to give it a try.

During my next visit with my mom, I performed oral hygiene with special attention to No. 2. I applied the silver diamine fluoride solution and followed it with the potassium iodide solution (figures 1 and 2). It was simple because I used the same technique as I would when applying fluoride varnish and with the caution of disclosing solution.



Figure 1: No. 2 prior to the Riva Star application

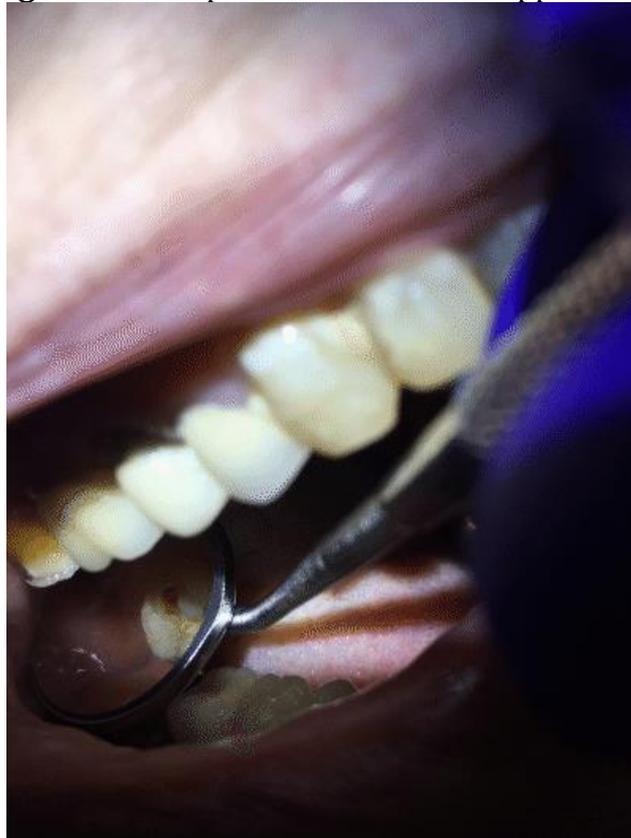


Figure 2: No. 2 after the application of Riva Star silver diamine fluoride and potassium iodide solution. Note the creamy white precipitate from the potassium iodide solution.

With all of the beautiful crown and bridge restorations my mom has and with more silver diamine fluoride in the capsule, it only seemed logical to swab the remaining silver diamine fluoride around the margins of every crown and bridge abutment. It made sense to provide as much fluoride protection as possible for her teeth. As I applied it to the facial margin of her No. 9 crown, the exposed root turned black, indicating presence of decay (figures 3 and 4). I followed up with the second solution of potassium iodide on No. 9. A creamy white precipitate formed and transformed to a clear precipitate, replacing the black stain (figure 5).

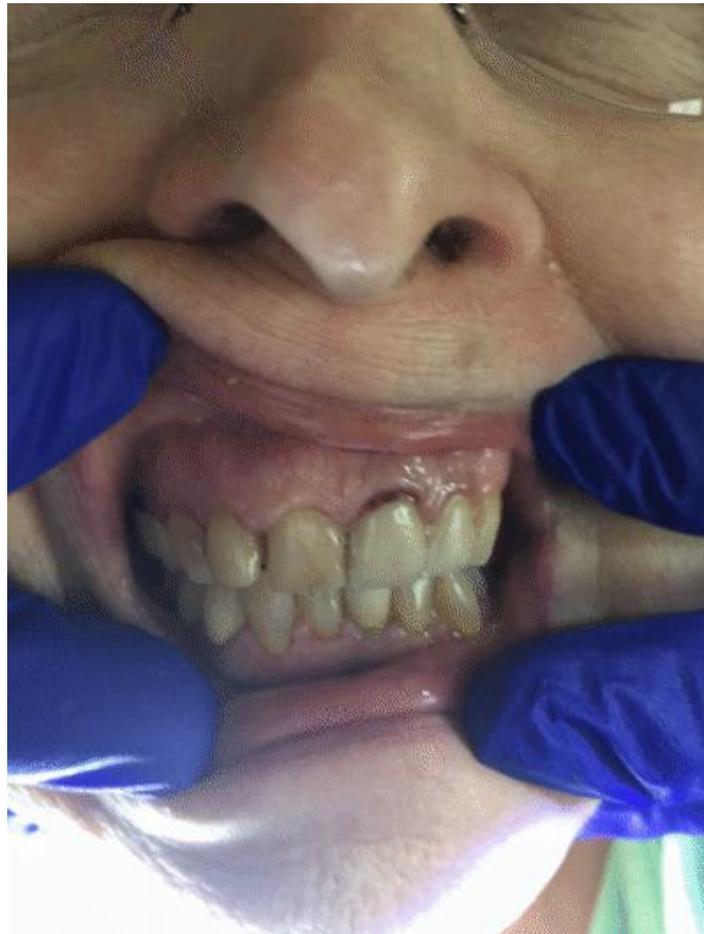


Figure 3: No. 9, prior to the Riva Star application

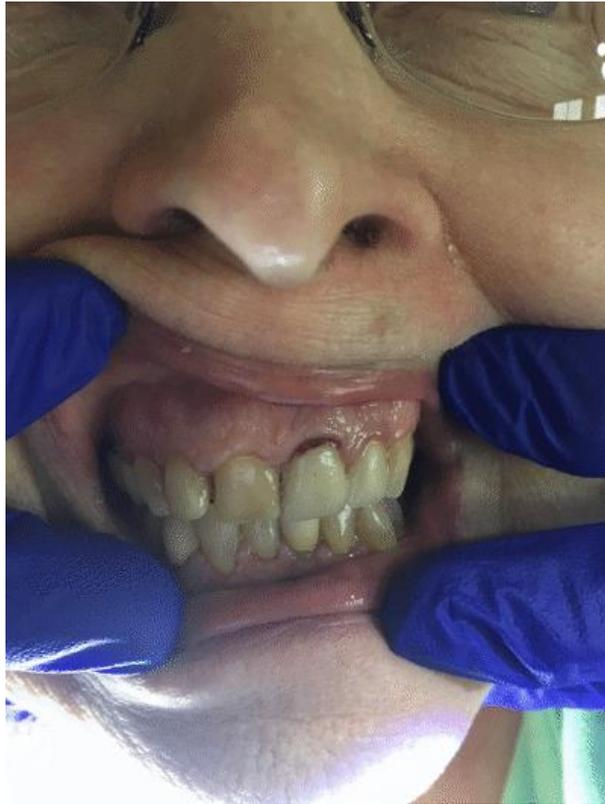


Figure 4: No. 9, after the application of Riva Star silver diamine fluoride



Figure 5: No. 9, after the application of Riva Star potassium iodide solution

Two areas of active caries infection were arrested. A powerful fluoride treatment was provided. And it was all done with Mom in her wheelchair, in her room, without anesthesia, *and* in less than 15 minutes. This is a game changer.

Riva Star is different

My RDH brain started to go into overdrive as I reviewed the facts I had learned at the conference about the silver diamine fluoride and potassium iodide in Riva Star:

- Riva Star has 38% silver diamine fluoride. (1)
- Silver salts stimulate dentin sclerosis and calcification. (2)
- Silver acts to kill cariogenic bacteria it comes in contact with. (2)
- Fluoride aids in remineralization and prevention. (3)
- Potassium iodide binds free-floating silver ions, turning the cloudy precipitate to clear and removing the dark stain. (1)
- Both silver diamine fluoride and potassium iodide relieve the sensitive dentin. (1)
- SDF can be used for desensitization. (4)

This product can relieve dental pain and arrest active caries infections in high-risk patients, patients who have active lesions, and patients who have dentin hypersensitivity. Special needs patients who have difficulty tolerating anesthesia, the vibrations of a handpiece, or sitting can have multiple lesions treated during one visit.

How many of your patients could you help?

Think about how many of your patients could benefit: hospice patients, patients in long-term care facilities who need palliative care, preoperative children who have decay, and any patient of any age who has active infection. Having Riva Star available can assist patients with dental decay and should be seen as the lifesaving medical treatment it is. As of the time of this article, I am still waiting for the long-term care facility's resident dentist to see my mom. I am looking to contract an outside dentist to make a house call. With thanks to this product, I can rest a bit better knowing there is no active infection continuing for my mom.

Editor's note: This article first appeared in the *Product Navigator*. [Click here](#) to subscribe. [Click here](#) to learn how to submit an article.

References

1. Craig GG, Knight GM, McIntyre JM. Clinical evaluation of diamine silver fluoride/potassium iodide as a dentine desensitizing agent: A pilot study. *Aust Dent J*. 2012;57:308-311. doi:10.1111/j.1834-7819.2012.01700.x.
2. Knight GM, McIntyre JM, Craig GG, Mulyani. Ion uptake into demineralized dentine from glass ionomer cement following pretreatment with silver fluoride and potassium iodide. *Aust Dent J*. 2006;51(3):237-241. doi:10.1111/j.1834-7819.2006.tb00435.x.
3. Nguyen V, Neill C, Felsenfeld J, Primus C. Potassium iodide: The solution to silver diamine fluoride discoloration? *Adv Dent Oral Health*. 2017;5(1):555655. doi:10.19080/ADOH.2017.05.555655.
4. Bersezio C, Moraga VV, Letelier C, Werner A, Oliveira-Junior OB, Fernández E. Dentin hydraulic conductance with different application times of diamine silver fluoride/potassium iodide desensitizing solution. *Sci J Dent*. 2015;2:1-5. doi:10.15713/ins.sjod.25.



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https://www.dentistryiq.com/articles/2018/10/product-review-sdi-riva-star-silver-diamine-fluoride-with-potassium-iodide-solution.html?sponsored=topic1&cmpid=enl_productnavigator_product_navigator_2018-12-12&pwhid=59fcc55ef03598caa14172e4ddb74c3809fd4b3facc435a8e52498fa1a8ddf598d1c30e93caf86476d69dde9662866c93b0b4d0f90b2774bd3b1ff639e699b&eid=438650109&bid=2323944