Royd House
Barbara Jones Educational Supervisor
Chetan Mistry Foundation Dentist

To polish or not to polish?

Current Trends

Polishing prophylaxis post scale is a current debate within dentistry. With an increasing number of dentists now opting not to polish our aim is to find why dentist are no longer polishing and is it actually effective. Out of 23 foundation dentists questioned only 44% polished.

Literature Review

40 published papers from a range of journals was reviewed including a mixture of study designs, such as; randomised control trials, cohort studies and a Cochrane review. The review shows that there was a significant reduction in plaque, calculus and biofilm formation post prophylaxis thus creating a smoother surface reducing adherence[1,2,3]. With one studies results being consistent after 1 week, 1 month and 90 days reviews. However, there was no effect of polishing on gingivitis or bleeding[3]. Air polishing was proven the most effective way of removing subgingival biofilm, even better than ultra-sonic scaling[1]. With regards to scaling, ultrasonic is more effective than hand scaling in removing biofilm resulting in a quicker reattachment of the fibroblasts and less loss of tooth tissue[4].

There is a large consensus amongst dentists that the biofilm reforms as soon as saliva colonises the tooth surface, this is true however the initial biofilm is considered to be protective against acid and is formed mainly of aerobic bacteria. If this biofilm develops to become more complex with gram negative anaerobic spirochaetal bacteria then this can cause periodontitis[2].

Why are dentists not polishing?

- No equipment – providers not providing the equipment and materials to allow dentists to use prophylaxis.
- There is a lack of education in undergraduate studies in the need and effect of polishing therefore leading to a lack of understanding.
- Time limitations – appointment lengths put pressure on dentists which can subsequently compromise patient care.

Image to the right: *The most common polishing heads. A prophy cup and bristle brush.*

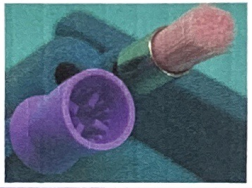


Image to the left: *Alternative prophy heads. Narrower heads are useful for interproximal spaces.*

Conclusion

As the research shows; prophylaxis plays an important role in reducing biofilm and calculus formation therefore reducing the risk of common dental diseases. It is also important to inform patients that effective removal of the biofilm is their responsibility by cleaning twice daily at home, also preliminary results indicate that it would be beneficial for dentists to start polishing.

Case Report

Level 4 written consent gained for photos

History – 8 year old, male patient attended for a new patient exam. Medically fit and well. Previously had 12 primary teeth extracted under GA due to caries. Currently brushes once a day unsupervised in the morning with adult toothpaste. Eldest of 4 siblings.

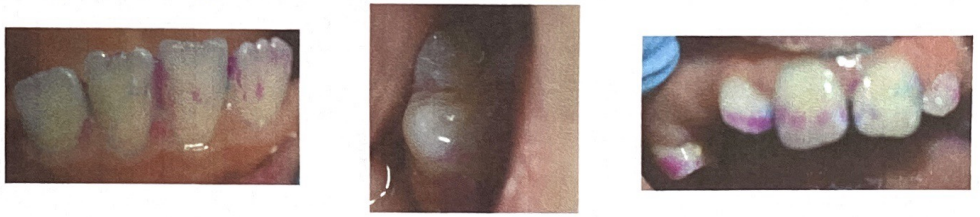
Method – A pre-op plaque score was recorded using a disclosing solution. We used a split mouth technique completing a scale and polish for the ULQ & LRQ and only a scale for the URQ & LLQ. A post-op plaque score was taken 10 minutes after.

Pre-op disclosing

Results

Pre-op plaque score – 100%. Overall post-op plaque score – 21%. Scale and polished ULQ & LRQ post-op scores of 17% & 8% respectively, with the only scaled URQ & LLQ being 38% & 25%. A blue colour represents mature plaque and purple immature.

Post-op disclosing



Discussion

Evidence from the case shows that using prophylaxis reduces the amount of plaque retained on the teeth in comparison to scaling in isolation. However, this case can be affected by operator technique and needs to be repeated on multiple patients to make the results significant. With this in mind as dentists we should be polishing after a scale for increased preventative purposes by reducing microbial load.

References

1) Zanatta FB, Pinto FM, Kantorski KZ. 2011. Plaque, gingival bleeding and calculus formation after supragingival scaling with and without polishing: a randomised clinical trial. Oral Health Prev Dent. 9(3):275-80.
2) Lamont T, Worthington HV, Clarkson JE. 2018. Routine scale and polish for periodontal health in adults. Cochrane Database Syst Rev. 12:CD004625.
3) Teles FR, Teles RP, Uxzel NG, Song, XQ et al. 2012. Early microbial succession in re-developing dental biofilms in periodontal health and disease. J Periodontal Res. 47(1):95-104.
4) Fichtel T, Crha M, Langerove E et al. 2008. Observations on the effects of scaling and polishing methods on enamel. J Vet Dent. 25(4):231-5.