



Flowable or Conventional Composite for non-carious cervical lesions? A CAT Summary

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Clinical Problem

- Non-carious cervical lesions (NCCL) become more common as people age.¹
- Treating NCCLs can be challenging because they lack retention form, are often below the gum line, and primarily affect dentin.¹
- While the ideal restoration for NCCLs is not definitively established, research suggests using flowable resin or micro-filled composite resin.¹



NCCL caused by traumatic brushing (Nam et al., 2022)

Clinical Question

In the adult population with NCCLs, does the use of flowable composite (FC) compared to the use of conventional composite (CC) affect the success rate of the restoration over a period of at 3 to 5 years?

Evidence Search

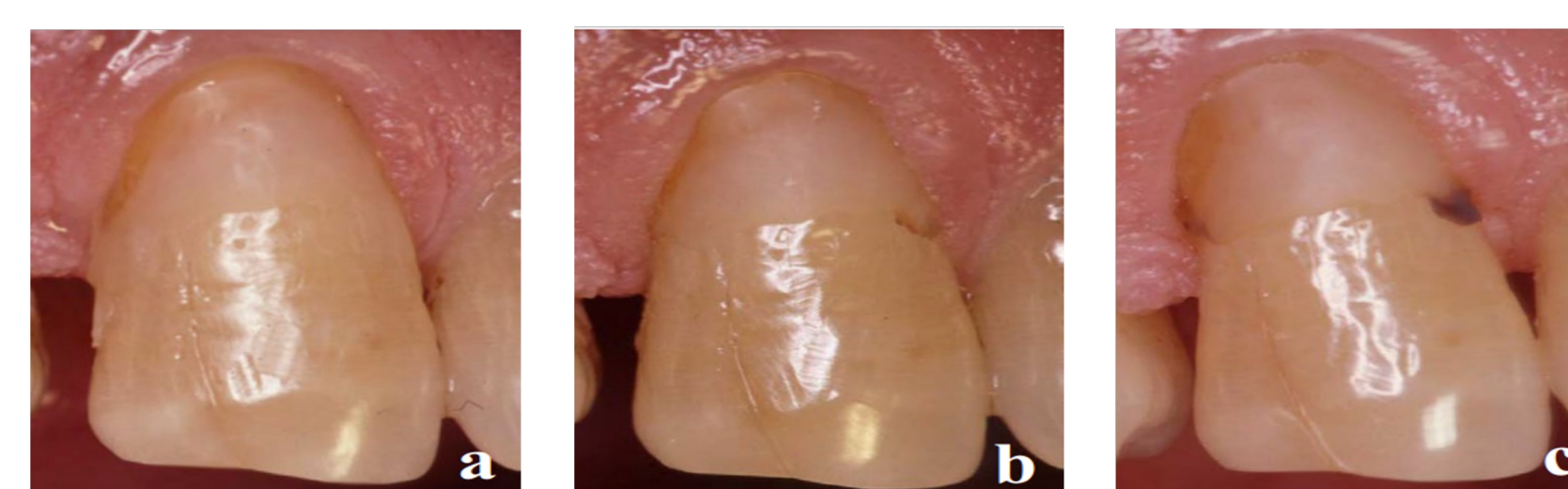
Keywords and MeSH terms: (“Dental restoration, Permanent/ or Composite resins”[MeSH]) AND (“flowable resin” OR “flowable composite”) AND (“Tooth Cervix” [MeSH]) or “non-carious cervical lesion”).

References

- Kaida, K., Kubo, S., Egoshi, T., & Taira, Y. (2022). Eight-year clinical evaluation of two types of resin composite in non-carious cervical lesions. *Clinical Oral Investigations*, 26(10), 6327-6337.
- Baratieri, L.N., Canabarro, S., Lopes, G.C., & Ritter A.V. (2003). Effect of resin viscosity and enamel beveling on the clinical performance of Class V composite restorations: three-year results. *Operative Dentistry*, 28(5), 482-7.
- Nam, J., Nguyen, D.H., Lee, S., Heo, D. & Park, J. (2022). Simulation of non-carious cervical lesions by computational toothbrush model: A novel three-dimensional discrete element method. *Sensors*, 22(11), 4183.

Clinical Bottom Line

For the treatment of NCCLs, the evidence results are inconclusive in terms of the superiority of FC compared to CC use in terms of success rate as measured by retention and marginal discoloration.



Progression of marginal discoloration at different points in time (Kaida et al., 2022)

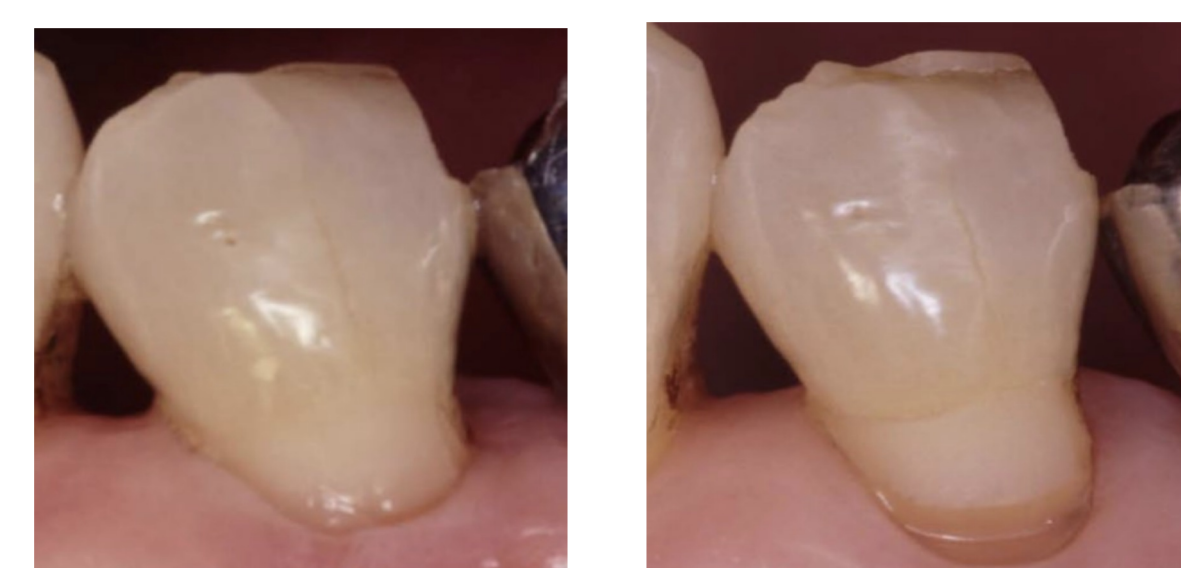
Results & Interpretation

Retention

- **Kaida et al.:** Retention rate 100% for conventional and flowable resin restorations at 5 years.
- **Baratieri et al.:**
 - RD, 3 years = 18% (95% CI: -9%; 45%)
 - Flowable resin restorations at 36 months - 18% more retained restorations compared to microfilled composite resin restorations. Results are clinically meaningful (threshold: 15%)

Marginal Discolourations

- **Kaida et al.:**
 - RD, 3 years = 3% (95% CI: -12%;31%)
 - RD, 5 years = 29% (95% CI: 4%;72%)
 - Compared to CC, FC restorations of NCCLs - 3% and 29% greater risk of marginal discoloration at 3 and 5 years, respectively. Results at 5 years are statistically and clinically meaningful (threshold: 20%). (3 years showed nothing of significance).
- **Baratieri et al.:**
 - RD, 3 years = -17% (95% CI: 0%, 34%)
 - FC restorations had 17% less marginal discoloration compared to CC. Results resulted in nothing of significance (threshold: 20%)



Development and progression of recurrent NCC (Kaida et al., 2022)

Strengths and Limitations

Strengths

- **Kaida et al.:** Computer generated random sequence; Allocation concealment; Trained examiners; Equilibrated baseline characteristics; Validated USPHS criteria; Blinding of participants and outcome evaluators; Long follow-up; Low drop-out rate (5%).
- **Baratieri et al.:** Blinding of examiners, equilibrated baseline characteristics, validated USPHS criteria.

Weaknesses

- **Kaida et al.:** Care provider not blinded; no missing data analysis; no intention to treat analysis.
- **Baratieri et al.:** Unclear randomization approach; Unreported allocation concealment and examiners reliability; Short and incomplete follow-up; Unknown reasons for drop-outs; No missing data analysis; Unclear intention-to-treat analysis.

Applicability

- Limited applicability
- Variations in risk factors, culture, SES, and NCCL prevalence (Brazil/ Japan and Canada)
- Differences in oral healthcare delivery and access between countries.
- Variations in study settings: public dental care vs. private clinics
- Comparable availability and use of flowable composite (Brazil/Japan and Canada)
- Longer follow-up preferred for study by Baratieri et al.
- More robust studies needed for conclusive results

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