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Bacterial microleakage of different sealing materials in access channels of internal and external hexagonal implants

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Microleakage through access channels of screw-retained abutments (crowns) is inevitable but previous research has suggested that certain filling materials may be better than others at reducing the amount of leakage. In this two-fold study, first, we aimed to assess the levels of microleakage using four different materials: Cotton, polyvinyl siloxane (PVS), teflon tape and gutta percha and next, we evaluated the potential differences between internal and external hexagonal implants on minimizing microleakage. Abutments filled with each of these materials were exposed to *Porphyromonas gingivalis* and assessed for bacterial microleakage to determine the most optimal material. Statistical analysis revealed a significant difference in microleakage among the different materials. Overall, PVS showed the lowest microleakage levels compared to the other materials tested, which led us to suggest PVS as the best filling material, among the four tested, to prevent bacterial microleakage.

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