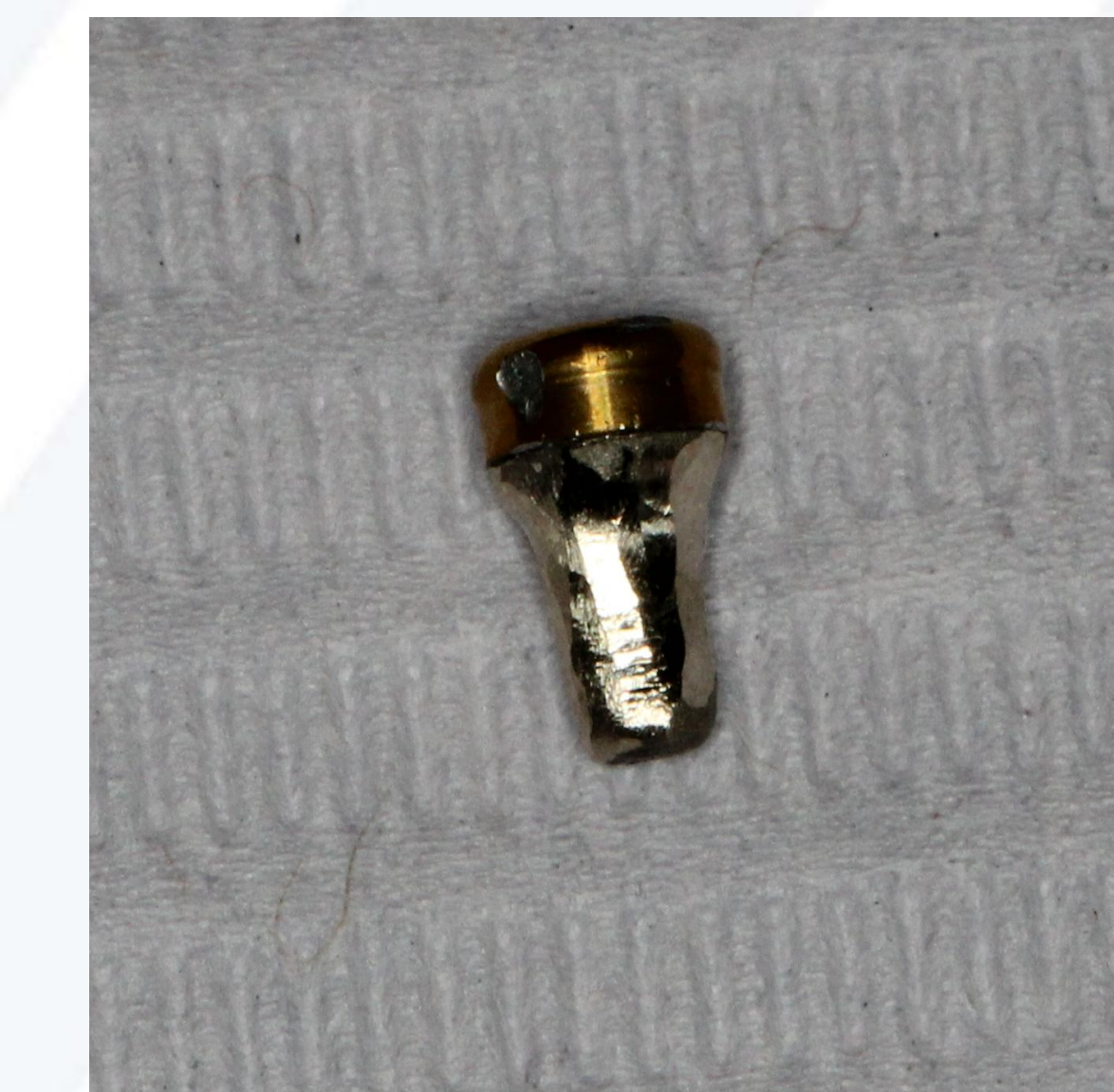
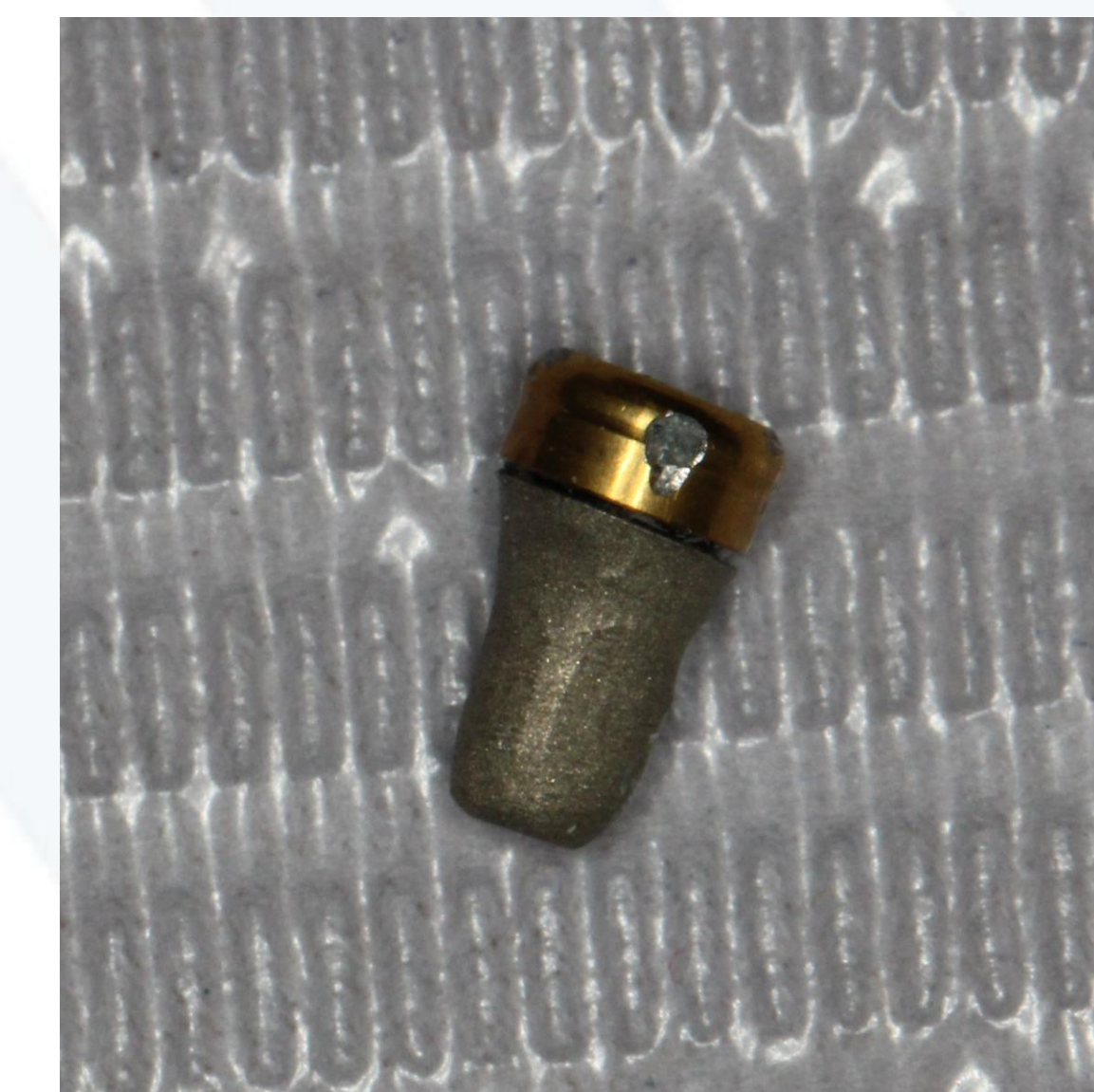
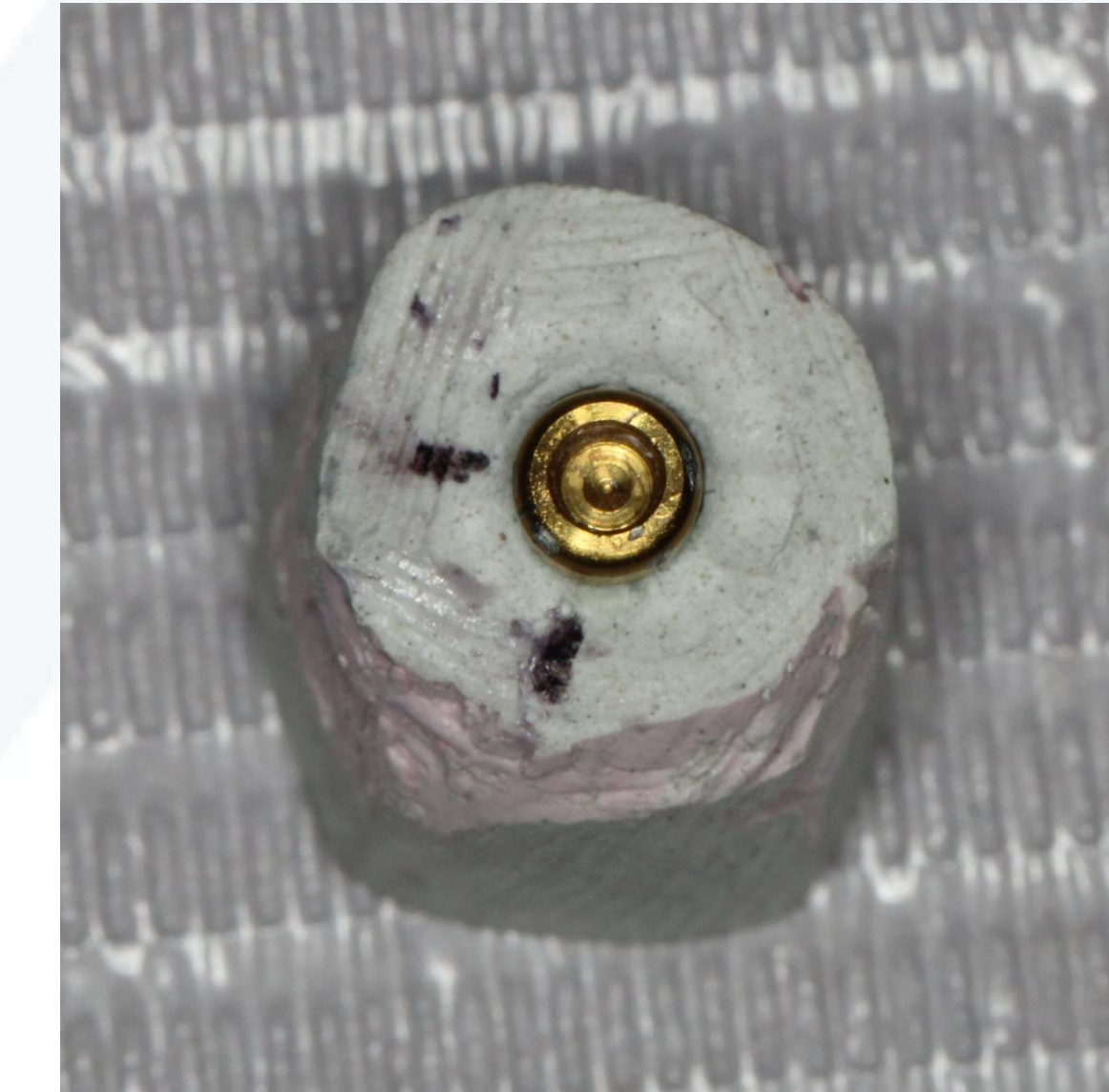
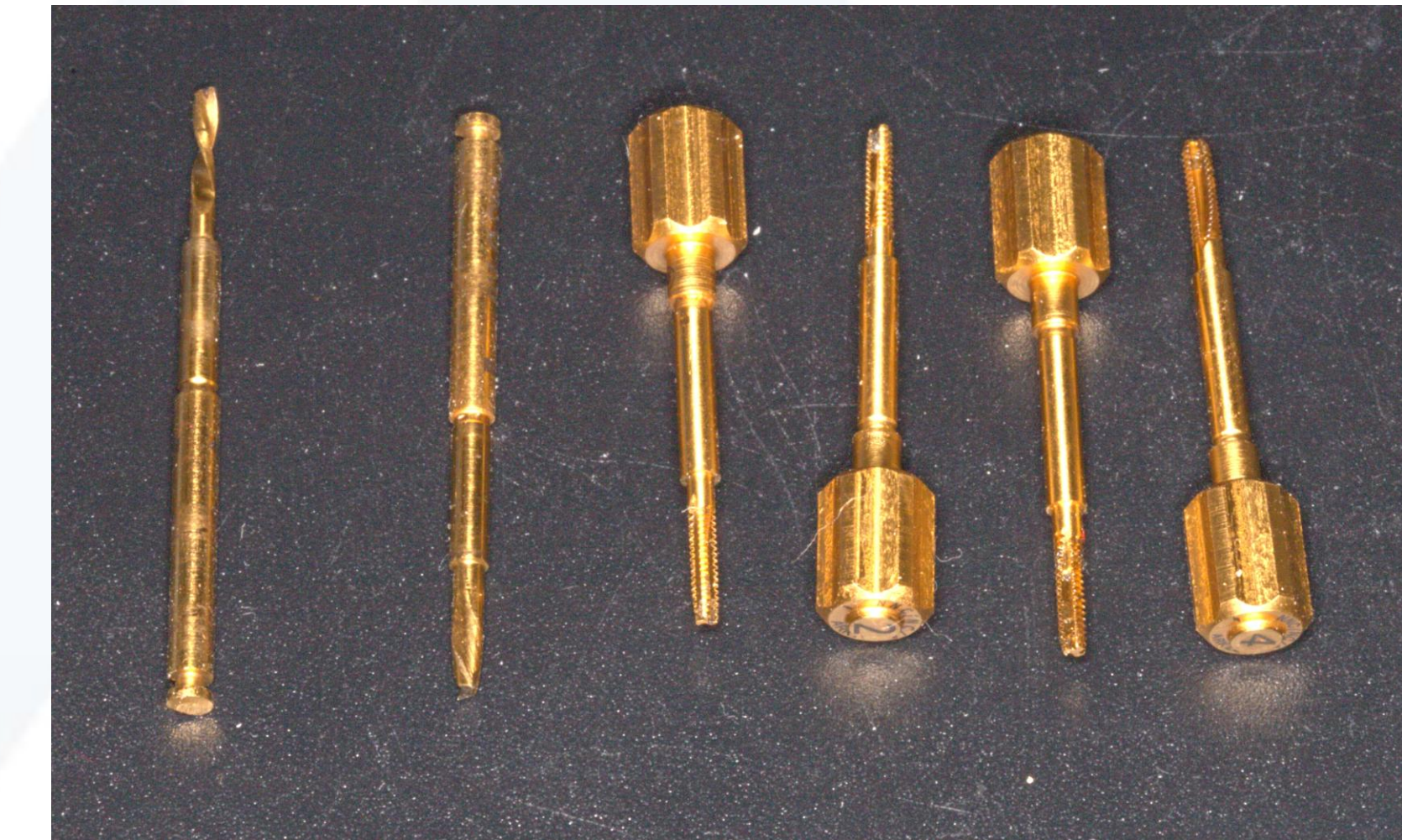


INNOVATIVE MANAGEMENT OF IMPLANT SCREW FRACTURES USING A CUSTOM-CASTED ROOT LOCATOR: A CASE REPORT

Introduction: Implant-supported overdentures (IODs) offer predictable rehabilitation for edentulous arches, improving function and satisfaction. Despite their success, mechanical complications such as abutment screw fractures remain difficult to manage. Retrieval kits are generally effective, but failure may render implants unsalvageable. This report describes a case where both abutment screw and retrieval tap fractures complicated treatment. Conventional methods failed, but a novel approach using a custom-casted root locator salvaged the implant.

Case Presentation: A 50-year-old female with scleroderma, xerostomia, systemic lupus erythematosus, and Sjögren's syndrome was rehabilitated with a maxillary four-implant and mandibular two-implant overdenture (Straumann RC). She initially presented with a fractured Zest locator abutment on implant #26, with the screw lodged inside. Retrieval attempts were unsuccessful. Four months later, the abutment on implant #23 fractured at 15 Ncm during retightening, leaving both implants with broken screws.



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Management: The Straumann service kit was employed. Screw retrieval from implant #23 succeeded after guided drilling and sequential tapping, allowing placement of a new locator torqued to 35 Ncm. In implant #26, however, the retrieval tap fractured inside the chamber, blocking access. Further attempts failed. An alternative solution was devised: the implant chamber was re-prepared with parallelized walls, and an impression was made by coating a root locator screw with adhesive and polyvinyl siloxane (PVS) light body. A custom-cast root locator was fabricated, tried in, adjusted, and luted with glass ionomer cement. The locator housing was picked up intraorally with Bosworth acrylic, stabilizing the mandibular overdenture.

Outcome: The prosthesis showed excellent retention and stability, restoring comfort and function. The patient expressed satisfaction and relief that the implant was preserved without surgical explantation.

Conclusion: This case emphasizes the value of innovative problem-solving in implant dentistry. When retrieval kits fail, creative strategies—such as fabricating a casted root locator—can effectively salvage compromised implants, restore prosthesis function, and maintain patient confidence, even in medically complex individuals.

