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Strategies to achieve fitness in prosthodontics, effect of spark erosion

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Introduction: Spark erosion technology is a highly advanced system for producing the ultimate in precision fit of the prostheses frameworks. In this process metal is altered in a form using short-circuit impulses created within a dielectric medium similar to light oil. This process became more popular in the early 1940s in the tool and die industry. Since then, the dental profession has adapted its uses for fabricating precision-removable partial dentures, titanium crowns, and implant-retained over dentures.

Methods & Materials: In removable partial dentures, this technology uses a tool system that permits repositioning of the casting with great accuracy and an electric discharge machine that is programmed to erode minute metal particles through periodic spark intervals. In implant dentistry, achieving a passive fit between the implants with the infrastructure and the superstructure is imperative for long-term osseointegration. Mechanical failures from a non-passive fit may cause mechanical failures of the implants and/or the prosthesis or may adversely affect the surrounding gingiva.

Result & Conclusion: Using spark erosion technique, the resultant prostheses were retentive and provided a number of benefits offered by both conventional overdenture and fixed prosthetic designs. This article explains why the spark erosion machining has a significant impact on today's dentistry.

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