

KOMPLIKACIJE U RADU SA CIRKONIA KERAMIKOM

COMPLICATIONS IN WORK WITH ZIRCONIA CERAMICS

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SAŽETAK

Uvod: Poslednje dve decenije, cirkonia keramika preuzima primat u izradi fiksnih zubnih nadoknada zbog dobre biokompatibilnosti, dugotrajnosti, dobrih mehaničkih osobina i povoljnog odnosa cene i kvaliteta. Međutim, u kliničkom radu, cirkonia keramika ispoljava tehničke i biološke komplikacije.

Glavni deo rada: Zastupljenost i vrsta komplikacija zavise od sva osnovna faktora: tipa cirkonia keramike i indikacije. Osnovni tipovi zirkonia keramike su monolitna zirkonia keramika (MZK) i fasetirana zirkonia keramika (FZK) koje se značajno razlikuju u pogledu mehaničkih osobina, otpornosti a poslednično u stopi preživljavanja i uspeha. Dosadašnji rezultati pokazuju drastično višu stopu tehničkih komplikacija FZK zbog toga što ona pokazuje visoku učestalost pucanja i odlamanja fasetirane keramike (chipping). U osnovi problema chipping-a je nedovoljno vezivanje fasetne keramike za cirkonia keramiku. Ovaj problem se nije uspeo prevazići poboljšanjem tehnološkog procesa izrade već smanjenjem površine koja se fasetira. Sa druge strane, MZK poseduje izuzetno visoku čvrstoću na savijanje, ali je i kod ove vrste konstrukcija utvđena veća učestalost mehaničkih komplikacija kod blok konstrukcija u odnosu na pojedinačne krune. Kod implantno retiniranih fiksnih radova od zirkonia keramike pored chipping-a javljaju se i frakture substrukture i visećeg dela (distalne ekstenzije). Biološke komplikacije kod zirkonia keramike mogu biti rane i kasne. Najčešća rana komplikacija je lokalizovana gingivalna iritacija, a kasna povećano gingivalno krvarenje na provokaciju.

Zaključak: Monolitna cirkonia keramika, naročito poslednja generacija multi-itra-layered, pokazuje najveći potencijal u smislu tehničkog uspeha i zadovoljstva pacijenta ali su potrebna dugotrajnija praćenja kliničkih rezultata. Takođe, potrebna su detaljnija ispitivanja o razlozima bioloških komplikacija na nivou parodontalnih tkiva.

Ključne reči: monolitna cirkonia keramika, fasetirana cirkonia keramika, fraktura, mehaničke komplikacije, biološke komplikacije.

ABSTRACT

Introduction: For the last two decades, zirconia ceramic has become dominant in the production of fixed dental restorations due to its good biocompatibility, durability, good mechanical properties and favourable price-quality ratio. However, in clinical work, zirconia exhibit some technical and biological complications.

The main part of the presentation: The prevalence and type of complications depend on the basic factors: the type of zirconia ceramic and the indication. The basic types of zirconia ceramics are monolithic zirconia ceramics (MZC) and faceted zirconia ceramics (FZC), which differ significantly in terms of mechanical properties, resistance and finally in the rate of survival and success.

The results so far have shown a drastically higher rate of technical complications of FZC due to the fact that it shows a high frequency of cracking and chipping of faceted ceramics. At the root of the chipping problem is insufficient bonding of the faceted ceramic to the zirconia ceramic. This problem was not overcome by improving the manufacturing process, but by reducing the faceted surface. On the other hand, MZC has extremely high bending strength, but even with this type of construction, a higher frequency of mechanical complications was found in block constructions compared to single crowns. With implant-retained fixed dentures made of zirconia, in addition to chipping, fractures of the substructure and the cantilever (distal extensions) also occur. Biological complications with zirconia ceramics can be classified as early or late. The most common early complication is localized gingival irritation. The late complications include increased bleeding on probing.

Conclusion: Monolithic zirconia, especially the latest generation multi-yttria-layered, shows the greatest potential in terms of technical success and patient satisfaction, but longer-term monitoring of clinical results is needed. Also, more detailed studies about biological complications are needed at the level of periodontal tissues.

Key words: monolithic zirconia ceramic, faceted zirconia ceramic, fracture, mechanical complications, biological complications.