

Odontologia Minimamente Invasiva: Laminados Cerâmicos Minimally Invasive Dentistry: Laminate Veneers

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Short Communication

The constant pursuit of an esthetic and harmonic smile raises the patients' level of expectation and demand. This stimulates and favors the development of new materials and techniques in Dentistry with a view to more conservative procedures and increasingly more esthetically predictable results. Among several treatment options with esthetic goals, laminate veneers stand out due to the possibility of providing less dental structure wear [1].

The use of laminate veneers allowed the advantages of composites, especially their adhesion to dental structure and less utilization of the substrate, to be combined with the advantages of ceramic restorations such as: color stability, wear resistance, coefficient of thermal expansion similar to that of enamel, and refined esthetics [2].

Recent innovations in ceramic biomaterials and laboratory techniques also allow for minimally invasive preparations that respect biological aspects relating to conservation and the oral health of the contemporary patient [3].

A number of studies have demonstrated the success of porcelain veneer restorations. The survival rate over five years is believed to be 94.4%, dropping to 85.74% in fifteen years, thus keeping an estimated survival probability rate of 93.5% in ten years [4].

Over the last decades, three techniques related to materials for the manufacture of ceramic veneers have been described in the literature. The first technique involves the utilization of a mold or refractory or a platinum sheet using feldspar porcelain. The second involves the use of heat, and pressed ceramics are reinforced with leucite or lithium disilicate. The third, introduced in the last decade, is the use of computer-aided design systems (CAD/CAM) to manufacture ceramic veneers [1]. This method easily produces ceramic laminates with a high esthetic degree due to the translucent quality of ceramic blocks, available in a wide range of shades [5,6].

Currently, there are three main indications for ceramic laminates: darkened teeth resistant to vital bleaching, morphological corrections (diastemata and conoid teeth) and the rehabilitation of compromised anterior teeth (largely restored teeth, cases of fracture, and congenital or acquired malformation) [7].

In virtually all cases, study models are prepared so as to redefine dental morphology and, ultimately, surrounding soft tissues. For this purpose, esthetic parameters must be taken into account, as well as facial symmetry, tooth axis, gum line, interdental contact area, general arrangement, tooth shape, course of incisal edges and smile lines of the patient [8].

Ceramic laminates represent an alternative to all-ceramic or metal ceramic crowns, transforming smiles in a conservative, painless and quick way. Surface finishing is very similar to a natural tooth, displaying fluorescence, absorbing, reflecting and transmitting light. The advance of adhesive techniques has also improved the long-term retention of laminates [9].

Indirect veneers are contraindicated for cases of Para functional habits, patients with severe periodontal disease, severe vestibularization and endodontically treated teeth, with extensive loss of coronary tissue [10,11].

Over the years concepts regarding tooth preparation have changed, and the idea of no preparation or minimal abrasion of the dental structure is currently in the works [12]. Minimal enamel abrasion would be necessary to improve the bonding of the material to the dental tissue, since the top aprismatic enamel layer is known to provide little retention. However, such abrasion must be superficial and restricted to the enamel whenever possible, avoiding contact with the dentinal tissue [13-15].

Some professionals also believe and currently place veneers without preparing the dental structure. This option represents a treatment for specific clinical situations, where final restoration does not require any preparation. Many esthetic challenges can be corrected conservatively, without requiring dental preparation. Some of these clinical situations include changes to dental shapes and contours, diastema closure, restoration of incisal length and alteration of tooth alignment and position by increasing the deficient area (teeth at mild linguoversion) [3].

In line with this idea of veneers without preparation or with superficial abrasion, the concept of minimally invasive dentistry has grown, based on the maximum preservation of the dental structure, especially the enamel, which is an element that is key to clinical longevity [16].

The priority of esthetics and the conservative preparation proposed by this technique have become quite popular among patients and professionals. The esthetic results obtained with ceramic laminates ensure great acceptance by patients, with stability in the medium and long term if associated with a correct indication and suitable cases for the development of the proposed work [17,18].

Although the results with cutting edge adhesive systems are quite promising, the bond strength between porcelain and enamel is still higher when compared to dentin bonding [19].

A minimally invasive treatment with selective removal of enamel, without exposure of dentin, resulting thus in little or no postoperative

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sensitivity has been the treatment of choice, whenever possible. Therefore, conservative clinical solutions, predictable esthetics and immediate results are important concepts in current restorative dentistry [20].

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