



Comprehensive Aesthetic Approach of Multiple Diastemas in Anterior Maxillary Teeth: A Case Report

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Introduction: Treatment for multiple diastemas can vary, including indirect veneer restoration. Comprehensive aesthetic analysis with digital smile design can predict the restoration results. Bonding to enamel has been demonstrated to produce dependable results. Prepless preparation provides maximum enamel surface for bonding with the veneer. Feldspathic veneer with platinum foil technique has proven to be a long-lasting restoration with good aesthetics.

Keywords: digital smile design, feldspathic veneers, multiple diastemas

Case History: A 25-year-old woman came with chief complaints of multiple diastemas in the maxillary anterior teeth. The patient had previously received orthodontic treatment but there was a relapse of diastema on the teeth. The patient had multiple diastemas on anterior teeth, varying from 1 to 3.5 mm. She also had a gummy smile of 3.5 mm. Macro-esthetic analysis showed that the facial proportions were quite balanced. The tooth midline shifted 1 mm to the right compared to the facial midline. In the rest position, the central incisors were exposed 2 mm. At 12 o'clock analysis, the incisal position of the anterior teeth was behind the dry and wet lip boundary. The incisal line was parallel to the interpupillary line.

Management: The digital smile design was carried out to help virtually simulate the restoration's shape. The width-to-height ratio of central incisor teeth was determined to be 87.5%. The 75% Recurring Esthetic Dental (RED) proportion of the maxillary anterior teeth was chosen. The illusion of using a proximal line angle on the labial surface was used to avoid the appearance of the central incisor teeth from being too wide.

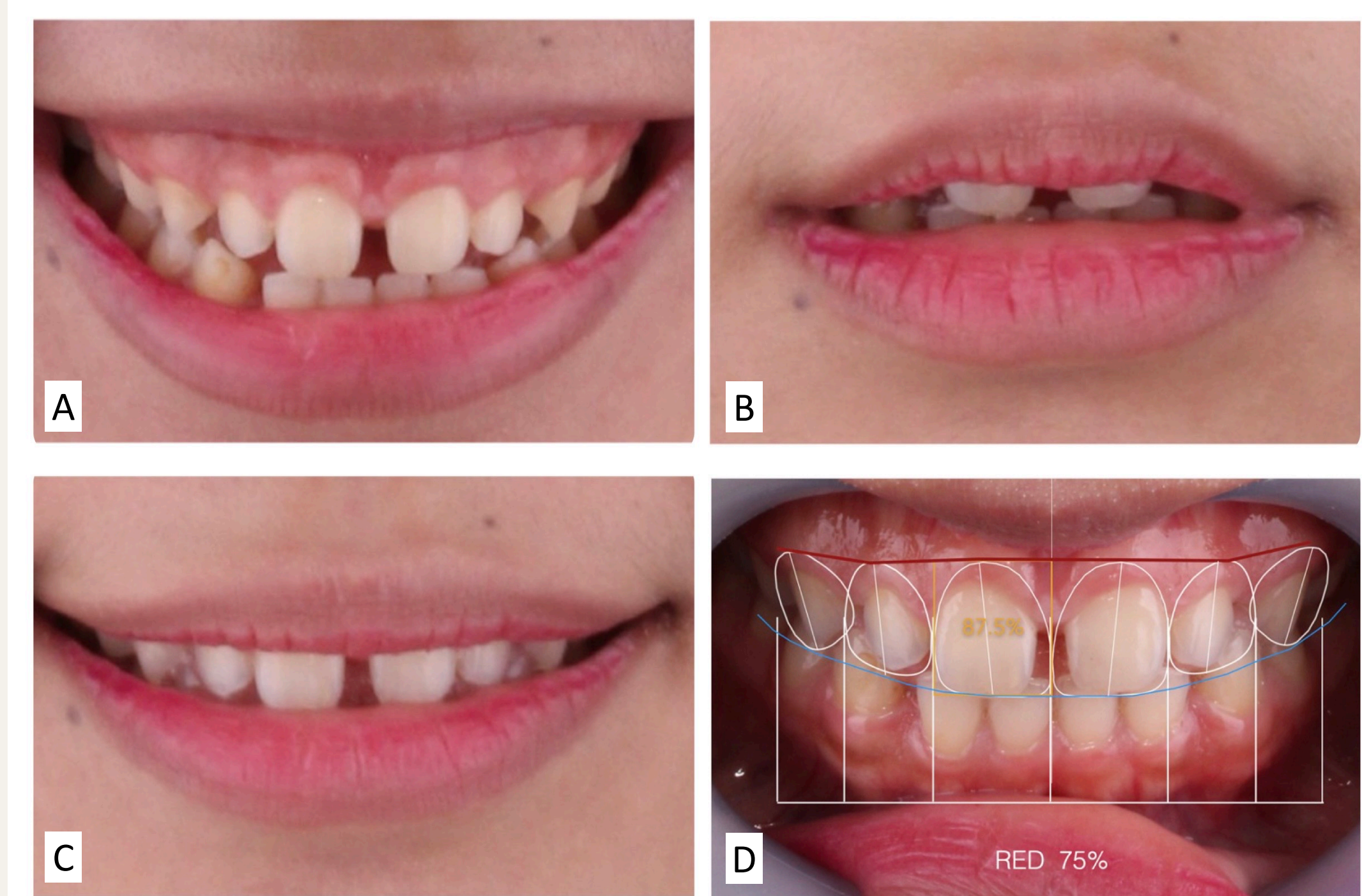


Fig 1. A. Genuine smile with multiple diastemas and 3.5 mm gummy smile, B. Rest position shows exposed central incisors of 2 mm, C. Posed smile with dominant central diastema of 3 mm, D. Digital smile design with 75% RED proportion.

After the wax-up was made following the digital smile design, a mock-up was done on the patient. Gingivectomy was performed on the maxillary anterior region. After complete gingival healing, prepless veneer preparation was performed only to remove the undercut so that labial entry could be achieved. Feldspathic veneers with platinum foil technique were made with a thickness of 0.3 mm, A2 shade for incisors, and a slight decrease in value for the canines. The veneers were cemented using clear light-cured resin cement. The patient was satisfied with the veneers.

Discussion:

Treatment of multiple diastemas requires a thorough analysis to produce a proportional restoration. Digital smile design can help provide an overview of the desired restoration results.

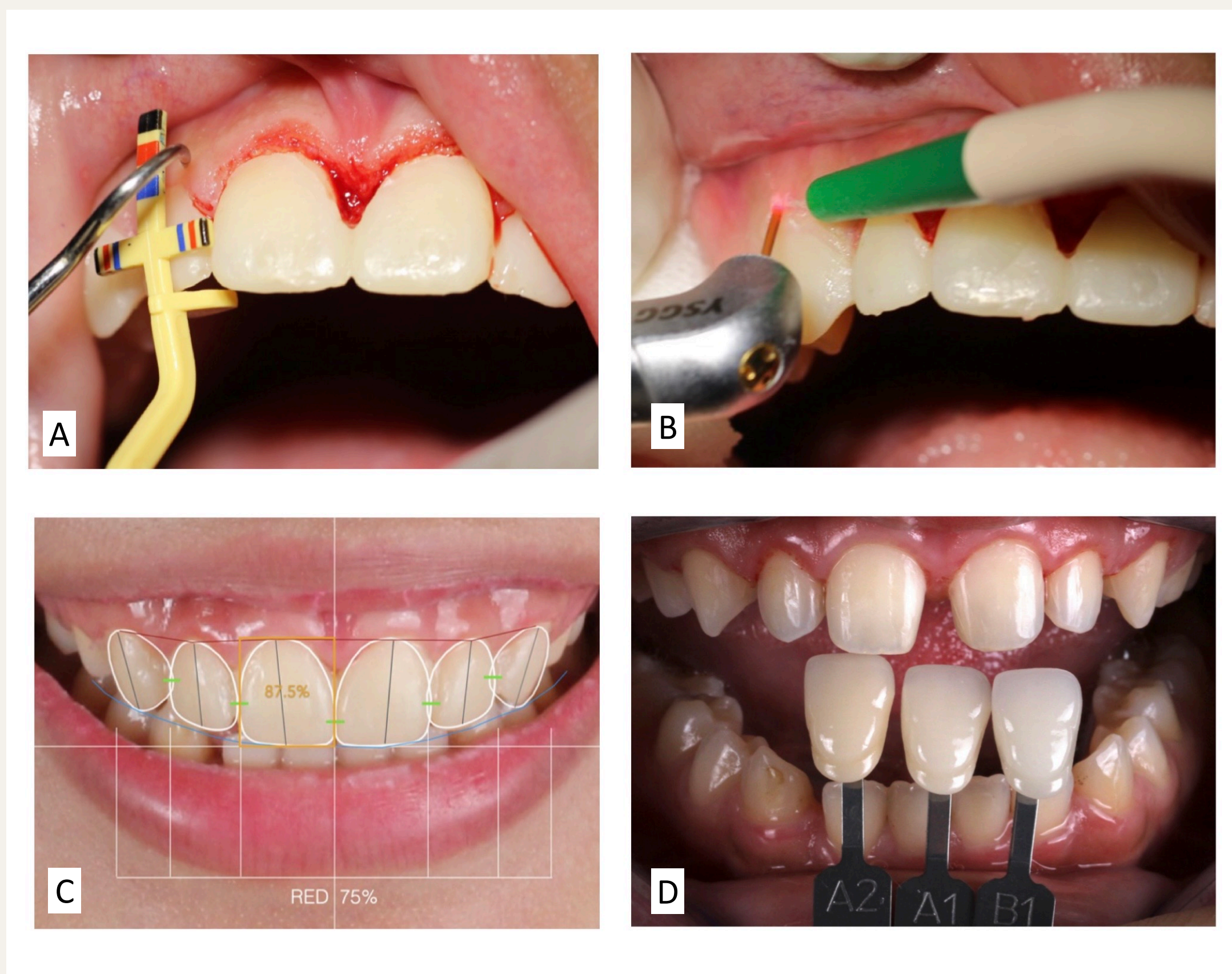


Fig 2. A, B. Gingivectomy was performed on the anterior maxillary region, C. Final mock-up superimposed to digital smile design template, D. Preparation result and shade taking.



Fig 3. Feldspathic veneers on anterior maxillary teeth show balance proportion and enhance the patient's smile appearance.

The width-to-height ratio of the central incisor was chosen at 87.5% to avoid the tooth appearing too big. For the interdental proportion, if the golden proportion was used, the 62% proportion would give a too-narrow appearance. Therefore, a 75% Recurring Esthetic Dental (RED) proportion was used to give a fuller smile appearance. Gingivectomy was required for this patient as she had a gummy smile and also to compensate for the width of the restorations. The strength of the veneer will increase if it is cemented to the enamel. In this case, the patient had a good facial profile and the teeth were not protrusive. Therefore it was possible to do prepless veneers. In the case of prepless veneers, only the undercut is removed without making a cervical finish, thereby producing a maximum enamel surface for veneer attachment. The strength of the veneer increases after the cementation procedure to the enamel. Feldspathic ceramics have a high degree of translucency, which gives them a superb aesthetic appearance that can almost mimic actual teeth.

Conclusion: A measured and planned aesthetic approach can provide good aesthetic treatment results. The feldspathic veneer can be the treatment of choice for multiple diastemas with a minimally invasive approach.

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