

Evaluation of plasticity and radiopacity of elastic separators by means of traction tests and radiography

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Editor's summary

In order to obtain an adequate orthodontic banding, it is essential a satisfactory interdental separation. Elastic separators have been used routinely for that. However, clinically it has been observed that if the elastic separators are placed subgingivally, they can cause bone resorption and loss of gingival and periodontal fibers. For this reason, the elastic separators should be radiopaque, so they can be localized through a periapical radiograph. The aim of this study was to analyze the plasticity and radiopacity of elastic separators used in orthodontic clinic. Six trademarks of modular and extruded elastic separators were evaluated (Abzil, Dentaurem, GAC, American Orthodontics, GH and Morelli – blue and green types). Ten sets from each brand were submitted to tensile test, wherein the inner diameter was stretched three times in a universal testing machine. Before and

after this test, the elastic separators were evaluated in a trinocular microscope and images were captured by a digital camera in order to measure the deformation of the specimens. For the analysis of radiopacity, periapical radiographs from elastic separators were taken conventionally. The results showed that the extruded elastics separators did not demonstrate plastic deformation, unlike the modular separators, which Morelli blue and Abzil presented higher deformations (10.75% and 8.75%, respectively). Moreover, only the extruded separators from America Orthodontics and GH showed radiopacity, as well as the modular separators from Abzil, Dentaurem and GAC. Based on the plasticity and radiopacity presented by elastic separators, the extruded separators from American Orthodontics and GH and modular separators from GAC and Dentaurem were indicated to clinical proposes.

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