

Critically Appraised Topic (CAT)

Project Team:
1B-2
Project Team Participants:
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Clinical Question:
What is the best removable appliance option for replacing an anterior single tooth following extraction and immediate bone graft?
PICO Format:
P:
Adult patients with recently extracted anterior tooth
I:
Essix retainer
C:
Interim removable appliance
O:
Most hygienic and esthetic provisional replacement during bone graft healing
PICO Formatted Question:
In adult patients with a recently extracted anterior tooth, does an Essix retainer compared to an interim removable appliance provide the most hygienic and esthetic provisional replacement during bone graft healing?
Clinical Bottom Line:
An Essix retainer may be the best provisional option during bone graft healing as it is tooth supported and limits tissue contact at the healing site. However, esthetics are compromised when using an Essix retainer, and hygiene can be issue due to high levels of plaque and calculus retention. An interim removable appliance provides better esthetics and is more hygienic, but should be used after sufficient healing of the bone graft site.
Date(s) of Search:
9/15/2020
Database(s) Used:
PubMed
Search Strategy/Keywords:
Keyword search: interim removable appliance, dental implant, provisional restoration, essix retainer
MeSH term search in PubMed database
MESH terms used:
Dental Implants, Single-Tooth; Dental Restoration, Temporary; Orthodontic Retainers
Article(s) Cited:

<ol style="list-style-type: none"> 1. Siadat H, Alikhasi M, Beyabanaki E. Interim Prosthesis Options for Dental Implants. J Prosthodont. 2017 Jun;26(4):331-338. doi: 10.1111/jopr.12421. Epub 2016 Jan 24. PMID: 26805651. 2. Priest G. Esthetic potential of single-implant provisional restorations: selection criteria of available alternatives. J Esthet Restor Dent. 2006;18(6):326-38; discussion 339. doi: 10.1111/j.1708-8240.2006.00044.x. PMID: 17083437. 3. Manzon L, Fratto G, Rossi E, Buccheri A. Periodontal health and compliance: A comparison between Essix and Hawley retainers. Am J Orthod Dentofacial Orthop. 2018 Jun;153(6):852-860. doi: 10.1016/j.ajodo.2017.10.025. PMID: 29853243.
Study Design(s): <ol style="list-style-type: none"> 1. Expert opinion/ narrative review 2. Expert opinion/ narrative review 3. Prospective cohort study
Reason for Article Selection: <ol style="list-style-type: none"> 1. Directly compares our two treatments of interest 2. Directly compares our two treatments of interest 3. Assesses the outcome of interest for one of our treatments
Article(s) Synopsis: <ol style="list-style-type: none"> 1. This article is a review of the literature on the provisionalization of implants. It compared removable and fixed options and discussed the advantages, disadvantages, and indications of each. 2. This article is a summary of provisional restoration options for single implants. It covers removable options, fixed tooth supported options, and implant supported options. The author offers his opinion on when to use each. 3. This article was a prospective cohort study comparing the plaque levels and periodontal health of groups wearing either Essix retainers or Hawley retainers for 6 months.
Levels of Evidence: (For Therapy/Prevention, Etiology/Harm) See http://www.cebm.net/index.aspx?o=1025 <input type="checkbox"/> 1a – Clinical Practice Guideline, Meta-Analysis, Systematic Review of Randomized Control Trials (RCTs) <input type="checkbox"/> 1b – Individual RCT <input type="checkbox"/> 2a – Systematic Review of Cohort Studies <input checked="" type="checkbox"/> 2b – Individual Cohort Study <input type="checkbox"/> 3 – Cross-sectional Studies, Ecologic Studies, “Outcomes” Research <input type="checkbox"/> 4a – Systematic Review of Case Control Studies

<input type="checkbox"/> 4b – Individual Case Control Study <input type="checkbox"/> 5 – Case Series, Case Reports <input checked="" type="checkbox"/> 6 – Expert Opinion without explicit critical appraisal, Narrative Review <input type="checkbox"/> 7 – Animal Research <input type="checkbox"/> 8 – In Vitro Research
Strength of Recommendation Taxonomy (SORT) For Guidelines and Systematic Reviews See article J Evid Base Dent Pract 2007;147-150 <input type="checkbox"/> A – Consistent, good quality patient oriented evidence <input checked="" type="checkbox"/> B – Inconsistent or limited quality patient oriented evidence <input checked="" type="checkbox"/> C – Consensus, disease oriented evidence, usual practice, expert opinion, or case series for studies of diagnosis, treatment, prevention, or screening
Conclusion(s): <ol style="list-style-type: none"> 1. The authors indicated use of a removable appliance when cost is an issue and multiple reentries to the surgical site are required. When comparing the use of an Essix appliance to an interim RPD after bone grafting, an Essix may be a more suitable option as it avoids pressure on the surgical site. An interim is relatively unstable and may create undesirable pressure to a healing graft site. However, an interim is considered the more esthetic option and is a good option once healing is sufficient. 2. Removable provisionals were recommended when low cost, easily fabricated, and easily modified options were indicated. Interim RPD offers good esthetics while Essix retainers were only considered fair. Interim RPDs may compromise implant or graft integrity if stability cannot be maintained. Essix retainers can easily avoid pressure on surgical sites because they are tooth supported. However, Essix retainers may not be appropriate long term due to occlusal wear of appliance. 3. Subjects wearing Essix retainers had significantly higher levels of plaque, calculus, BOP, and gingival inflammation as compared with those wearing Hawley retainers. There was also a greater accumulation of plaque on the Essix retainers. Coverage of the dentition by the thermoplastic material inhibits cleaning effects of saliva. <p>Overall, the evidence found to answer our PICO question can be considered relatively weak. Two of the articles were low level reviews, and the cohort study did not directly compare our two treatment options. However, it can be inferred from the cohort study that the Essix retainer is a less hygienic option as compared to the interim removable appliance. Both review articles agreed that the interim removable appliance was a more esthetic option than the Essix retainer.</p>

