

## **Extractions of Asymptomatic Natural Teeth to Facilitate Prosthodontic Treatment**

Extractions of natural teeth that are commonly performed in a dental office can be broadly grouped into two categories. The first category is the extraction of symptomatic teeth. The primary reason for extractions in this category include teeth affected by dental caries, periodontal disease, hard and soft tissue impactions, root fractures, and periapical infections.<sup>1</sup> Each of these conditions warrants a careful consideration of whether to save the natural tooth/teeth with assessment of the risk-benefit ratio in the best interest of the patient. The second category of dental extractions is the extraction of asymptomatic teeth, where typical reasons include hard- and soft-tissue impactions, odontogenic and non-odontogenic pathology, facilitation of orthodontic treatment, and facilitation of prosthodontic and maxillofacial prosthodontic treatment.<sup>1</sup> Extractions of asymptomatic natural teeth to facilitate their replacement by prosthodontic treatment may appear paradoxical, but several reasons this treatment is warranted are further discussed.

Comprehensive prosthodontic treatment is designed to improve a patient's dento-facial esthetics and function along with facilitating a long-term low maintenance solution for the restorations.<sup>2</sup> Extractions of asymptomatic natural teeth to facilitate prosthodontic treatment should be recognized as being similar to extractions of asymptomatic natural teeth that are routinely performed to facilitate orthodontic therapy.<sup>3</sup> The caries and periodontal status of asymptomatic teeth may or may not be compromised. Occasionally, these teeth may even be considered healthy by common dental parameters. However, their unfavorable position in the oral cavity and their low strategic role in the comprehensive treatment plan may necessitate their extraction. Some common examples of such scenarios include:

- 1) multiple supra-erupted, tilted, or rotated asymptomatic teeth, and the patient refuses orthodontic treatment or is not a candidate for orthodontic treatment due to poor oral hygiene, periodontal status, increased treatment cost, or lack of compliance;<sup>4-6</sup>
- 2) asymptomatic but supra-erupted maxillary or mandibular anterior teeth with bilateral posterior edentulous spaces (Kennedy's Class I situation) with severe bone resorption when a patient desires comprehensive implant prosthodontic solutions. In this scenario, it is also important that subsequent ostectomy (formerly called alveolectomy) procedures are systematically performed to reposition the alveolar bone, provide a harmonious platform for implant placement and optimal prosthetic space, and ensure an esthetic and functional result for the patient;<sup>7-9</sup>
- 3) asymptomatic natural teeth (with good native bone), adjacent to edentulous spaces affected by congenital conditions (cleft palate), trauma, failed bone graft sites, or when a patient refuses corrective regenerative surgery for these sites;

- 4) asymptomatic healthy natural tooth/teeth that would need to be “sacrificed” as part of oncologic surgery to obtain negative tumor margins or to facilitate resection of the jaw to appropriately fabricate a maxillofacial prosthesis.<sup>10</sup>

Often, patients are burdened with multiple suboptimal dental restorations on their natural teeth for several years and have often endured a cycle of failing endodontic treatments and multiple failing restorations and elect to have their asymptomatic natural teeth extracted and desire an immediately loaded fixed implant-supported prosthesis as a definitive solution.<sup>11-13</sup>

It is important to note that retention of natural teeth (restored and unrestored) with subsequent prosthodontic treatment is especially preferable when the tooth has a low risk of disease, has long roots, is amenable for long-term function and maintenance, allows preservation of scalloped gingival soft-tissue architecture (in high smile and thin gingival phenotype situations), or plays a vital role in the overall prosthodontic treatment.<sup>14</sup>

Irrespective of the cause of extraction of asymptomatic natural teeth, it is the dentist’s responsibility to provide the patient with a clear explanation of anatomic considerations, advantages, disadvantages, alternative treatment options, risks/complications, sequence, and approximate cost of treatment and long-term maintenance. An informed consent form and a clearly designed treatment plan on how the comprehensive treatment would be executed to replace the missing teeth are also paramount for proper care. Additionally, patients should be provided with an informed refusal form for any refused treatment options (such as pre-prosthetic orthodontics).

Replacement of a missing tooth or teeth is a core component of prosthodontics, and therefore, extractions of asymptomatic natural teeth should not commence until a clear treatment plan is in place for replacement of the teeth with optimal esthetics and function. Patients should be informed before any extractions that not all replacement options include fixed prosthodontic solutions nor all replacement options encompass dental implant therapy. Patients should always be cautioned about the risk of future implant failure, implant-related complications, and need for expensive long-term maintenance. Contrarily, patients who refuse to have their asymptomatic natural tooth/teeth extracted to facilitate prosthodontics treatment should also be cautioned of compromised prosthodontic outcomes with respect to esthetics, function, and treatment satisfaction.

## **SUMMARY**

It is the position of the American College of Prosthodontists (ACP) that comprehensive prosthodontic treatment involves optimizing esthetics and function in the long-term interest of the patient, and extractions of asymptomatic natural teeth may be required as part of necessary pre-prosthetic surgery to

facilitate prosthodontic treatment. However, to avoid injudicious extractions of healthy natural teeth, dentists must perform a risk assessment for various solutions that will eventually be used for replacement of the missing teeth and discuss this with the patient before any extractions. Patient education is paramount, and dentists should discuss advantages, disadvantages, alternative treatment options, risks/complications, sequence, and approximate cost of treatment and long-term maintenance before obtaining the patient's informed consent and approval of a clearly designed treatment plan for replacement of missing teeth.

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