

Shared Decision-Making for Restoration of Missing Tooth

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Dear Editor,

Missing a tooth can lead to some complications such as migration of neighboring teeth to the edentulous site and subsequent space loss, over eruption of the opposing teeth, and other damages to the occlusion. There are different methods available to solve the remaining space problems, including dental implants, fixed or removable prostheses, tooth auto-transplantation as well as orthodontic treatment. In the case where first or second molars in a quadrant are missing or extracted and there is an intact wisdom tooth available in that quadrant, choosing a proper treatment plan could be critical and challenging. There are a number of articles available in the literature that use the auto-transplantation technique in the aforementioned situation. Most of them claim that patients were satisfied with treatment results. However, the question is whether ethical issues such as informing the patient of other treatment options and the respective prognosis were considered or not?

In the case of a first missing molar, by use of proper orthodontic mechanics, we can initially protract the second molar and finally move the third molar mesially or occlusally. If only the second molar is missed, this orthodontic approach would become easier. This technique in comparison with other techniques would save the whole tooth structure as well as periodontal apparatus. Moreover, the prognosis would be excellent if the third molar is not ankylosed. However, orthodontic treatment is expensive and time consuming. On the other hand, the success rate of auto-transplantation is reported to be 50% - 90% (1). Therefore, in the case of failure of transplantation due to ankylosis or root resorption, there will be an unnecessary trauma and cost for removal of the transplanted tooth. The American Association of Endodontics suggests that to prevent necrosis of transplanted tooth,

root canal therapy is required within 7-14 days for closed apex teeth. Thus, the tooth will eventually become non-vital even in the absence of necrosis. In some cases, an impacted tooth is used for surgical auto-transplantation. However, the impacted tooth can be moved using orthodontic appliances to the edentulous space with a predictable prognosis. Furthermore, surgical removal of impacted tooth is usually accompanied by trauma to the tooth, and trauma is considered as one of the main factors responsible for auto-transplantation failure (2). Despite the aforementioned drawbacks, auto-transplantation will be quite useful in young patients with jaw growth potential (3) as well as in very deep impactions where orthodontic treatment might not play a role. Considering prosthetic methods, there are potential problems such as reduction of intact teeth structure for preparation of a fixed partial denture, probable pulp exposure, and recurrent caries. Dental implants are considered an established treatment method for partial and complete edentulism; however, they cannot rebuild the natural periodontal ligament and also carries some risk of failure. In conclusion, there are several techniques to rehabilitate patients with missing teeth. In cases of a missing molar and the presence of intact, erupted, or impacted wisdom tooth, it is necessary to inform patients regarding all available treatment plans, even if some of them are out of the dentist's ability and with their advantages/disadvantages because at the end of the day, patients must decide their own treatment option. This concept is called "shared decision-making", which is an important emerging trend in clinical medicine but has received little attention in the dental literature (4). For instance, a patient with a missing tooth condition that suffers from other dental malocclusions might choose an orthodontic treatment plan for a general occlusion and esthetic correction, while another patient chooses dental implants

and does not care about his other dental malocclusions. Of note, according to medical ethics, patients are not fully informed unless they are completely justified for all treatment plans available. Moreover, it should be taken into account that breaching medical ethics can lead to legal disputes between dentists and patients. We believe that to prevent unethical issues, not only dentists should be completely taught revolving medical ethics from the start of training but also the educational authorities of schools should garner attention for conducting practical case report discussions emulating real life behavior; therefore, real life ethical experiences (5). In conclusion, medical policy makers should further consider dental ethics in both education and research (6).

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