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## **Review article on criteria for selection of patient for periodontal splinting**

**Vikram Bali**

Prof-HOD-Department of Periodontics and Implantology, Desh Bhagat Dental College and Hospital, Amloh road, Mandi

**Rupinder Jyot Singh**

Post-Graduation student-Department of Periodontics and Implantology, Desh Bhagat Dental College and Hospital, Amloh road, Mandi Gobindgarh

**BirSukhman Kaur Thind**

Post-Graduation student-Department of Periodontics and Implantology, Desh Bhagat Dental College and Hospital, Amloh road, Mandi Gobindgarh

**Abstract**---A ‘splint’ is a device for supporting weakened tissues. Periodontal splints have been defined in a variety of styles. It is defined as a rigid or flexible device that maintains in position a displaced or movable part; also used to keep in place and protect an injured part. A splint does not make loose teeth tight. Only the removal of disease and subsequent healing can achieve a real reduction in tooth mobility. This review article is on Criteria for selection of Patient for Periodontal Splinting.

**Keywords**---splinting, periodontal splinting, splint, SSS.

**Introduction**

A ‘splint’ is a device for supporting weakened tissues. Periodontal splints have been defined in a variety of styles. It is defined as a rigid or flexible device that maintains in position a displaced or movable part; also used to keep in place and protect an injured part. A splint does not make loose teeth tight. Only the removal of disease and subsequent healing can achieve a real reduction in tooth mobility. Tooth mobility is one of the unwanted effects of periodontal disease. It is the movement of a tooth in a horizontal or vertical plane of space. All teeth have some degree of mobility. Increased tooth mobility may be caused by a variety of factors, which may be intrinsic or extrinsic. Mobility is a sign of disease, not a disease entity that requires treatment. It is a sign of morphologic change. The greatest

challenge that mobile teeth present to the diagnostician is to make a decision as to their retention or extraction.

### **History of Splint**

- A phoenix mandible from 500 B.C. demonstrated, loosened and periodontally compromised anterior teeth bound together by gold wire.
- Findings from digging of Egyptians show similar gold wiring.
- The history of splinted dental prosthesis progressed to using silver wire followed later by appliances of gold wire or ribbon to support loose teeth.
- Obin & Arvins (1951) advocated the use of self curing internal splint to achieve temporary stabilization.
- Harrington (1957) modified the splint by incorporating a cemented stainless steel wire.
- Wellensiek (1958), Shatzkin (1960) & Taatz (1964) presented approaches to the anterior intra-coronal splints.
- Cross (1954) suggested the use of a continuous amalgam splint for fixation of mobile post teeth.
- L'yod & Baer (1959) & later on Ward & Weinberg (1961) developed new techniques using a plastic matrix or using wire reinforcement.

In 1993 Alvarez concluded that traumatized tooth to be splinted to avoid constant movement that causes damage for the re-organization of periodontal ligament. He also stated that situation with-

- Fractured tooth or bone requires splinting for 6-8 weeks
- With no fracture of tooth or bone may require splinting for 2-3 weeks.

In 2000, Trope et al. indicated avulsed tooth requires semi-rigid splint of 7-10 days.

### **To use or not to use Splint**

Loss of tooth-supporting structures results in tooth mobility. Increased tooth mobility adversely affects function, aesthetics, and the patient's comfort. Splints are used to over-come all these problems. When faced with the dilemma of how to manage periodontally compromised teeth, splinting of mobile teeth to stronger adjacent teeth is a viable option. This prolongs the life expectancy of loose teeth, gives stability for the periodontium to reattach, and improves comfort, function and aesthetics. Although splinting has been used since ancient times, it has been a topic of controversy because of its ill effects on oral health, including poor oral hygiene and adverse effects on supporting teeth. There have been considerable advancements in the materials used for splinting, resulting in fewer ill effects. Following criteria should be considered.

### **Criteria for selection of patients**

- Cases of chronic periodontitis

- Mobility of anterior teeth (upper or lower) with at least two teeth having a mobility greater than 1° (modified miller index)
- An occlusion that could be adjusted to be mutually protective to the opposing arch
- Vital teeth without endodontic lesions
- No mal-alignments or cross-bites
- No prior periodontal surgery, orthodontic correction or prosthetic replacement
- No history or obvious signs of para-functional activity
- No known systemic illness
- Suitable candidates for periodontal surgery
- Periodontal defects amenable to correction
- Willingness and ability to visit the hospital for periodic follow-up

### **Objectives**

- To provide rest, reduce mobility, redirection of forces, redistribution of forces and restoration of functional stability.
- To promote healing of underlying periodontal tissues by removing occlusal trauma.
- To promote patient comfort & function.
- Redirection of occlusal forces to all teeth included in the splint. This ensures that forces are within the adaptive capacity of periodontium.
- To preserve the arch integrity splinting restores proximal contacts reducing food impaction at proximal area.
- To promote psychological wellbeing.
- To aid in effective surgical procedure.

### **Conclusion**

For success of treatment all the criteria must be checked and followed. Splint had a promising and beneficial effects on anterior teeth exhibiting grade I to grade II degrees of mobility. In advanced periodontal disease, tissue destruction reaches the level of extraction of one or more teeth. In such conditions, remaining teeth available for Periodontal treatment can be immobilized that fulfils the major objective of stabilizing hypermobile teeth as well as replacing the missing teeth amidst mobile teeth. The choice of splint varies widely from simple composite splint to removable cast partial prosthesis. Later on review when no increase in mobility of the previously assigned provisional bridge or abutment teeth is noticed, the permanent splint such as metal bridge or PFM bridge may be included. The time period for retaining the periodontal splinting may vary from other types of traumatic splinting or orthodontic splinting. Thus the choice of splint, time period for splinting and material of splinting requires the collective knowledge about the biomechanics of splinting related to the patient's existing periodontal condition. In condition with tooth mobility that interferes for regular functions, splinting is required to reduce or fix the mobility. Under these conditions, a provisional splint followed by a fixed splint is advisable for long term results of the periodontally compromised mobile teeth.

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