A New Drum

Boom Boom Boom Boom — The incessant erratic rhythm leaves little doubt that someone has a new drum, and experience leads us to expect that the situation will change. Either frustration will lead to its abandonment, or new skills will be developed to make it a truly positive addition to the environment.

There are always several new drums in the orthodontic environment — it sometimes seems like a drum corps review. Every diagnostic method and appliance mechanism enters our specialty and our individual professional lives as a new drum, with all of the special attractions of the new and untried. The glow and promise can be irresistible, and early reports always seem to emphasize the positive aspects.

The experienced clinician, like the skilled musician, looks beyond the flash to see details and nuances that can be easily overlooked.

Second molar extraction is a new drum for much of the dental profession. While it is far from a new and untried concept, it has yet to reach the level of acceptability that can be achieved only with a sound data base that goes beyond mere demonstrations of success. Broad long-term documentation is needed to develop meaningful guidelines for clinical application.

This issue of the *Angle Orthodontist* includes several studies that add to that data base. Each follows a unique approach, testifying to the complexity of options that are faced at every step in dentofacial orthopedic care.

There is little doubt that changes in the eruption course and other shifting of nearby teeth can be expected after a tooth is removed; nor is there any doubt that some favorable changes can be expected after second molar extraction. Nevertheless, reported success rates in the 75% to 90% range indicate a significant possibility that unfavorable changes may also occur. This suggests that we are looking at another example of a useful procedure that must be applied with discretion and care.

The Clinical challenges

As clinicians, our challenge is to look beyond the most likely prospects to the less likely but still important complications and their avoidance and control. No modality in the complex field of health care is so perfect that it can be applied indiscriminately, and we are still in the early stages of developing diagnostic guidelines for second molar extraction.

Patient Selection

Selection is a term that arises repeatedly in clinical reports on second molar extraction. The procedure of removing a second molar is not particularly difficult, but deciding in advance who will benefit from removing these large and important teeth is another matter.

The first consideration is the real reason for the extraction. Success is a very loose term until we define the objectives against which it is to be measured.

Are we considering second molar extractions to eliminate the need for third molar extraction, to avoid bicuspid extractions, to gain additional space in the buccal segment without influencing other extraction decisions, to minimize the need for orthodontic therapy, or for some other reason?

Retained third molars are a potential periodontal hazard to the second molars, and their removal can cause additional injury. Eliminating those problems is a worthwile goal, but the others need a closer look.

Buccal Arch Space

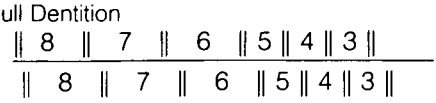
Trading second molars for third molars may gain the difference between the size of upper second and third molars, but that is all. Any additional space that may be "gained" by distal movement of first molars will be reflected in less space behind the molars, a form of distal arch expansion with its own set of limitations. That region is often crowded even with only two molars, with functional and periodontal implications that should not be ignored.

One reasonable treatment goal is an adult dentition with at least two healthy, functioning molars in each quadrant. It would be ideal if this could be accomplished with the retention of two bicuspids as well, but if the ultimate result of that effort is loss of function and periodontal health of the distal molar, then the preservation of the bicuspid can hardly be regarded as beneficial.

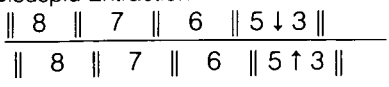
Radiographs are indispensable for the diagnosis and follow-up of second molar extractions, but they do not show some of the important alveolar relationships that are seen in the mouth and on dental casts.

Several extraction options are available for optimizing the dental inventory of the buccal segment within the available space. *These different extraction options are not interchangeable;* each is unique in its effects. Consider the following —

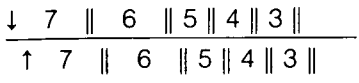
Full Dentition



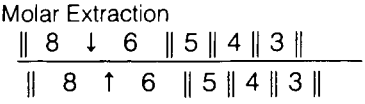
First Bicuspid Extraction



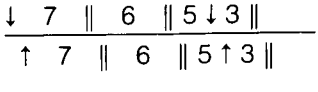
Third Molar Extraction



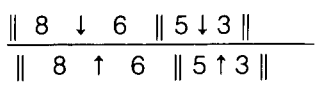
Second Molar Extraction



First Bicuspid and Third Molar Extraction



First Bicuspid and Second Molar Extraction



There are other possibilities and combinations of the above that may be indicated in some situations.

The Long-term View

The time factor in second molar extraction sets it apart from many of the alternatives, and perhaps one of its most important side effects is the emphasis on long-term dentofacial orthopedic care. This is not a rote in-and-out-in-two-years proposition. Recommending a procedure with objectives that will not be realized for 5 or 10 years means a commitment on the part of doctor and patient alike to follow through.

This emphasis on long-term changes is a step forward in recognizing the ever-changing nature of the dentofacial complex and the benefits of ongoing professional supervision.

A renewed commitment for careful, documented long-term care can take us beyond incessant beating of the second molar extraction drum to the selective skill and finesse of a skilled typanist as we integrate this instrument into our orchestrations of the complex symphony of the human face.

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