

LETTER TO THE EDITOR

From Iain G. Edwards

Your editorial: "The Molar Extraction Debate" in *The Australian Orthodontic Journal*, Volume 13 Number 2, in March 1994, brings to light, once again, the controversy over extractions in orthodontic treatment. This issue has raged throughout the evolution of Orthodontics and it would appear that nothing has changed since the "great extraction debate" of the 1930s between Case and Angle and brought to light again by Bernstein's historic revision.

A decision about extractions should not be based on the limited rational quantitative assessment of an occlusion, but, instead, on the principle of what is best for the patient.

To date, the decision to extract has been based largely on the limitations of the specific fixed appliance treatment. Dr Angle advocated "non-extraction" without any scientific proof to substantiate his theory and in support of the Edgewise appliance which did not allow teeth to tip through extraction spaces. Dr Begg, on the other hand, advocated extractions because he had scientific evidence of attrition and had an appliance that would allow teeth to be moved through extraction sites. Thus, the history of Orthodontics reveals that decisions about extractions have been linked to the fixed appliance treatment modality; and, in a similar way, the choice of modality is linked to a history of extraction thinking, which is itself linked to treatment planning.

Irrespective of which orthodontic technique is used, experience reveals that the most orthodontic patients require extraction of third molars: most so-called "non-extraction" orthodontic treatments also prescribe removal of third molars as part of the treatment plan and most general dental patients have third molars removed as part of their dental treatment. Thus, the desire for a complete dentition is met in only a few cases.

Various orthodontic philosophies offer a supposed "non-extraction" approach which, in reality, involves extractions. Generally speaking, the Begg system has distalized the extraction site to the second premolars and, with the evolution of improved mechanics, has

achieved better profile control. Careful observation reveals, however, that for many patients third molars are also removed. Since sliding mechanics have evolved, the more contemporary proponents of the Edgewise system are advocating the extraction of premolars. So, the issue still remains, but in another form: not whether extractions are required but which teeth should be extracted; and for what reasons.

Recent research (Richardson, *AJODO*, December 1993) has indicated the efficacy of extraction of second molars as there is now evidence that third molars, providing they are in a reasonable position and of good form and shape, have a good chance of erupting into an acceptable position this procedure.

In the writer's view the advantages of second molar extraction are:

1. Minimizes retraction of anterior teeth resulting in a broader smile and more aesthetic facial proportions with more lip support and a better profile.
2. Avoids over-retraction of anterior teeth which can, through incisor interference, cause distal displacement of the condyles.
3. Relieves such posterior interferences as heavy contacts in lateral excursion which can cause TMJ disturbance; and distal mandibular rotation to the detriment of the profile in high angled cases.
4. Minimizes the amount of anterior tooth movement because there are no spaces to close in the buccal segments; the possibility of root resorption is, thereby, greatly reduced.
5. Periodontal health is not jeopardised because tooth contacts and tooth relations are not broken and disturbed as may happen in premolar extraction cases.
6. Improves TMJ health because the mandible is encouraged to move down and forward in its functional relation rather than being forced distally because of the premature posterior occlusion of second molars.
7. The patient is more likely to finish

with a mature dentition of 28 teeth rather than one of 24 teeth which occurs with the removal of premolars and, eventually, the third permanent molars.

8. It is easier on, and kinder to, the patient to extract second molars than it is to remove surgically unerupted and impacted third molars with the accompanying risks of unfavourable post-operative sequelae.
9. The worst outcome following the removal of second molars would be the loss of third molars leaving a mature dentition of 24 teeth; this is no different than the outcome of the removal of premolars and third molars. The second worst outcome would be that the third molars erupt and fail to gain the optimum occlusal relations. This problem is not difficult to solve with modern sectional arch treatments. The extra treatment time involved for the small percentage of patients

who will have gained the advantages of second molar removal, is a small price to pay.

Critical and honest observation of bicuspid extraction cases reveals that, despite the most sophisticated orthodontic mechanics, when they are compared with non-extraction and second molar extraction cases, arch size is reduced anteriorly and the smile is narrower and less full. In an effort to reduce this effect, second premolar extractions have become more popular in traditional fixed appliance treatments; nevertheless, there is still a reduction in the anterior facial dimensions for many patients. Whilst it can be argued that the final aesthetics are no worse with premolar extractions, it can also be argued that, in specific cases, they are no better.

It is time that orthodontists accepted that very few patients develop complete or full dentitions and the guarantee of a "non-extraction"

approach for any orthodontic or dental patient is a delusion. [Begg reported that three per cent of patients finish with 32 teeth in occlusion. Ed.] Further, removal of teeth is more likely to occur in an orthodontic patient than in a dental patient if the need for treatment is because there is an underlying disharmony in the skeletal deno-facial relations which orthodontic treatment aims to camouflage.

If orthodontic thinking on diagnosis and mechanotherapy does not change it will remain stuck in the past. Evolution is change. It is time that the fantasy of non-extraction treatment is seen as just that: a fantasy.

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Reference:

Bernstein L. Edward H. Angle versus Calvin S. Case: extraction versus non-extraction . Historical revisionism. Parts I & II. Am J Orthod Dentofac Orthop 1992; 102:464-70; 546-51