

# The 20/20 Molar Tube

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## STAGE 3: Interactive to Active

4-6 months

### GOALS

- A) Finish torque
- B) Finish root uprighting
- C) Maintain arch form
- D) Set occlusion with active settling
- E) Achieve functional goals
- F) Achieve external and internal esthetic goals

## The 20/20 Molar Tube

By Dr. Ron Roncone

What's the big deal about a molar tube? They are basically all the same, aren't they? For years we have rarely paid attention to the bracket system we have used. We continue to do the same things over and over because they have become habit.

While I believe the entire system is of critical importance, let's discuss what just one small part of that system can mean.

The variety of tubes is staggering. From 0° torque and 0° offset to -25° torque and 14° offset and everything in between. Several years ago I asked GAC International to manufacture a -20° torque and 20° offset (rotation) molar tube to accompany my new bracket prescription. The results have been striking. What are the advantages of this molar tube?

1. In mild Class II cases the maxillary molar rotates into a Class I relationship even with initial round wires.
2. The combination of torque and rotation provides incredible anchorage. In most cases this eliminates the need for anchorage devices such as transpalatal arches.
3. The rotation of the molar places the mesial buccal cusp in the most esthetic position.
4. The lingual cusp of the maxillary molar "seats" beautifully with little to no chance of balancing interferences.
5. Extraction cases with maximum anchorage do not need headgear as a back-up.

### Discussion:

Over the years, orthodontists have looked for ways to simplify procedures not only for their own benefit but also to reduce discomfort for and cooperation from the patient. Certainly, headgear (neckgear) is effective for anchorage requirements but it has to be worn to be effective. Patients don't want to wear these devices and most of the time, they don't. As orthodontists, we are left with the choice of accepting this lack of cooperation or being very "hard-nosed" in our approach to the patient. For some this is not a problem—for me, it is.

Many orthodontists find that transpalatal arches (TPAs) are the answer. Indeed when used correctly they are very effective in maintaining anchorage and torque control. In terms of patient comfort and preference this is still a negative. TPAs also need to be continually adjusted which does not help us meet our goal of simplification. Please understand that I would personally not substitute simplification at the expense of quality treatment. The 20/20 molar tube meets all the needs of:

- anchorage requirements
- torque control
- function
- esthetics

### Anchorage Requirements

We all know that many, if not most, maxillary first molars are rotated mesially. In mild Class II cases all that is required to obtain Class I is to rotate the molar distally then distalize the remaining teeth into a Class I relationship. Time is wasted however, because the initial round wires level and align but do not rotate the maxillary molars. The 20/20 molar achieves this goal early in treatment (Figure 1 and Figure 2).



Figure 1 (.018 Sentalloy)



Figure 2  
(8 weeks later)

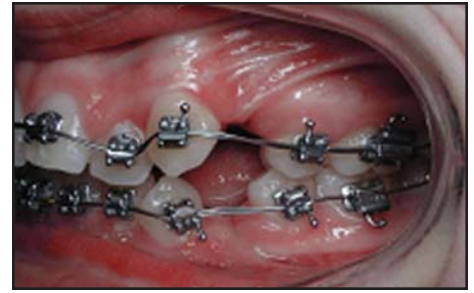


Figure 3  
(twin .014 Sentalloy wires)



Figure 4  
(.019x.025 Resolve wires w/ "L" loops & Sentalloy springs)

Additionally, when canines are high or have crowns angled mesially they can be easily teased into position without round-tripping them or losing molar anchorage (Figures 3 & 4).

Extraction cases are known to tax anchorage. Holding the maxillary molars in place can be difficult at best. Headgear and devices such as TPAs are routinely used. Figures 4, 5 and 6 show Sentalloy springs, loops in wires and elastic chain all exerting a mesial and rotational force on the maxillary molars. Notice that the typical mesial rotation of the maxillary molars has not occurred.



Figure 5

## Stages of Treatment

| STAGE 1: Totally Passive |  |
|--------------------------|--|
| 6-8 months               | <b>GOALS</b>   |
|                          | A) Leveling - very near perfect vertical alignment               |
|                          | B) Rotations fully corrected                                     |
|                          | C) Archform almost perfect*                                      |
|                          | D) Intrusion of upper and/or lower incisors when necessary       |
|                          | E) Full posterior extrusion (level curve of spee) when necessary |
|                          | F) Fully rotate maxillary 1st and 2nd molars                     |

\*It is very important to remain in round wire for at least 6 months with the JSOP™ “R” prescription. If archform is not achieved during this time, the maxillary arch will constrict because of the significant posterior torque. The buccal root torque will display itself as lingual crown torque.

| STAGE 2: Passive to Interactive |   |
|---------------------------------|---|
| 3-7 months                      | <b>GOALS</b>  |
|                                 | A) Verify or change to perfect bracket placement                            |
|                                 | B) Begin active torque  |
|                                 | C) Space closure  |
|                                 | D) Maintain or if necessary improve arch form                               |
|                                 | E) Begin to “set” posterior occlusion                                       |
|                                 | F) Significant correction of root uprighting especially in extraction cases |



Figure 18



Figure 19

**The 20/20 maxillary molar tube can also be used in:**

- Class III malocclusions
- Minimum anchorage upper premolar extractions  
(If you place the tube significantly distal on the tooth)

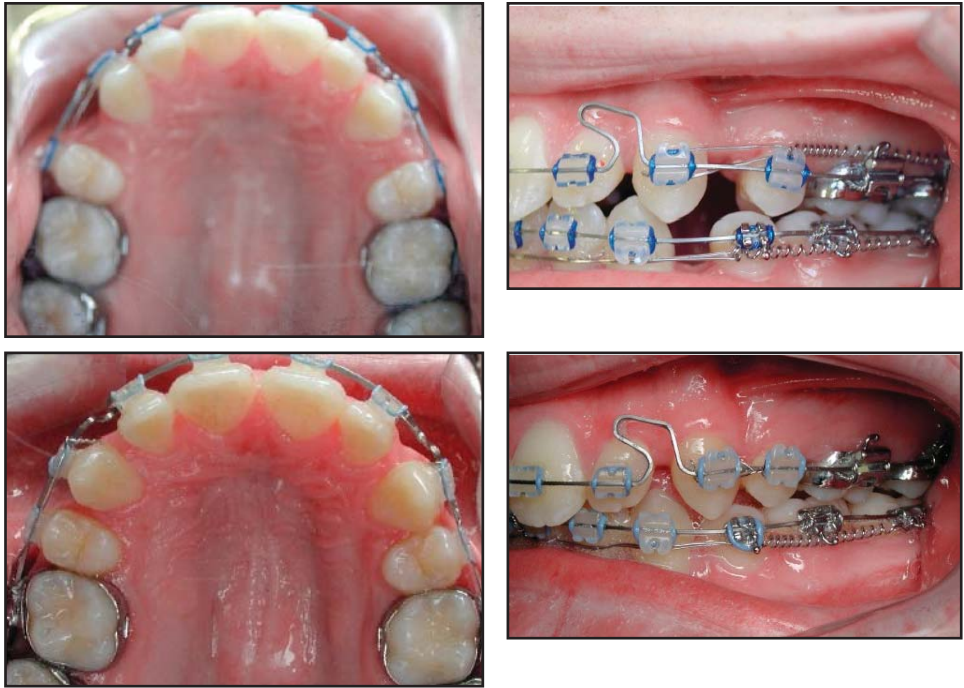


Figure 6

**Torque Control**

A problem which seems to be very common is the lack of proper torque in most first and second maxillary molars (Figure 7). Lingual cusps still seem to be “hanging down” causing balancing interferences. Placing tubes more occlusally than what is correct to avoid the problem also has drawbacks. One can argue that it is the lack of “filling the slot” which causes the lingual cusp problem and that may be correct. However, very few orthodontists fill the slot and never will. Based on this reality isn’t it better to achieve the functional goal in a different way than to argue mechanics? (Figure 8). It’s the goal, the result that counts.

**Function**

When all is said and done esthetics and function especially are of primary concern. If proper function has not been achieved, esthetics and stability crumble. The 20/20 molar in combination with the Roncone J.S.O.P. bracket system will achieve full straight wire (straight bracket??) function.

The Roncone Prescription values are given to the right:



Figure 7



Figure 8  
(Maxillary molars rotating and exhibiting buccal root torque - .019x.025 Resolve wire)

| TOOTH  | U1 | U2 | U3 | U4  | U5  | U6  | U7  |
|--------|----|----|----|-----|-----|-----|-----|
| torque | 18 | 10 | 0  | -10 | -10 | -20 | -20 |
| tip    | 5  | 8  | 8  | 4   | 4   | 0   | 0   |

| TOOTH  | L1-2 | L3 | L4 | L5 | L6  | L7  |
|--------|------|----|----|----|-----|-----|
| torque | 1    | -3 | -7 | -7 | -10 | -10 |
| tip    | 0    | 7  | -1 | -1 | 0   | 0   |



Figure 9



Figure 10

Figures 9 and 10 show typical results with the Roncone JSOP appliance system. However, these results would be significantly more difficult and require much more patient cooperation and/or discomfort without the 20/20 molar. The entire appliance system is “anchored” by the 20/20 molar tube.

## Esthetics

You may ask, “What does a maxillary first and second molar have to do with esthetics?” The answer is... a lot. The final touch in arch development is the appearance of the mesial buccal cusp of the maxillary first molar. Part of arch and tooth microesthetics is the gradual distal tipping of each tooth as you go more distally in the arch. The combination of torque and rotation in the 20/20 molar tube gives this final touch to esthetics (Figures 11 & 12).

Finally, the following photos show the 20/20 molar tube rotating molars without the aid of headgear/neckgear, TPA or springs in moving occlusion toward a Class I (Figures 13-16). Short Class II elastics were used for a period of 8 weeks (Figure 17). Figures 18-19 show final finishing to center small and peg lateral incisors for veneers.



Figure 11



Figure 12



Figure 13



Figure 14



Figure 15



Figure 16



Figure 17

(Short Class II elastics for 8 weeks)

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