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EDITORIAL

Self-ligating bracket systems: trend or orthodontic reality?

Sistemas de brackets de autoligado: ¿una moda pasajera o una realidad en la ortodoncia?

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«Design is not only what is seen or felt. Design is how it works».

Steve Jobs

The incredibly popular smartphones began as an innovation, then disseminated as a fashion and were finally established as a necessity for daily life. Smartphones are an excellent analogy to understand the current context of self-ligating bracket systems.

The question at present for many orthodontists is: does the use of self-ligating brackets really represent an advantage for the clinical practice? Throughout almost 15 years of implementing these appliances in my daily practice different reflections have emerged as well as some other questions that have been clarified by clinical experience in the absence of high-quality research on the subject, which makes me believe in the potential of the self-ligating bracket.

The first design of self-ligating bracket was developed in 1935,[1] even before the conception of Andrews' pre-adjusted brackets. The main reason why the self-ligating brackets were not developed until the end of the 1970's was because the nickel-titanium alloys necessary to facilitate the phases of leveling and alignment in orthodontics were not in use yet. Although the use of these alloys and the design of the pre-adjusted brackets were the pillar for the evolution of straight archwire mechanics, it is necessary to question whether such mechanics are the most efficient for self-ligating bracket systems. Using the smartphone analogy, it would be like asking: Do we need an unlimited calls plan as we did 10 years ago or do we currently prefer one with unlimited Internet access?

Just as we would do when looking to buy our first smartphone, it becomes necessary to search for information, analyze the benefits and compare brands and prices. While we build our criterion for selecting the proper bracket to try, promises from different manufacturing companies arise on the benefits of self-ligating brackets.[2]

As any tendency in science, four stages are identified *(Figure 1)*: the discovery or innovation, evaluation, counter-tendency and finally, consolidation or abandonment of the theory, which Khun describes as the scientific revolution of the paradigm.[3]

The discovery or innovation has more to do with one stage of marketing than with the innovation *per se*; since in reality the fundamentals that created the first self-ligating brackets are theoretical and this is reflected in an increase in opinion articles of experts and case series. During the assessment phase, most commercial companies launch their own designs and in the literature, there is a decrease in the number of studies on the subject. Personally, I think that self-ligating bracket systems are at the counter-tendency stage, where there are still articles in favor, but mainly articles against begin to emerge. In the latter, they question the efficiency of the system, the fulfillment of the initial promises made by the manufacturing companies and the cost-benefit relationship.

Based on the foregoing, before continuing with my prediction on the consolidation or abandonment phase of the theory, it is necessary to pose the context that will make the difference between reality and fashion. There are several factors to consider, among which they highlight: the reasons for which it was decided to use self-ligating brackets, the clinician's experience, the clinical comparison between traditional systems and self-ligating brackets and finally, the empirical cost-benefit assessment.

For most of us, evidence is synonymous of information, but it is well known the bias in publication's results in accordance with the stage of the knowledge

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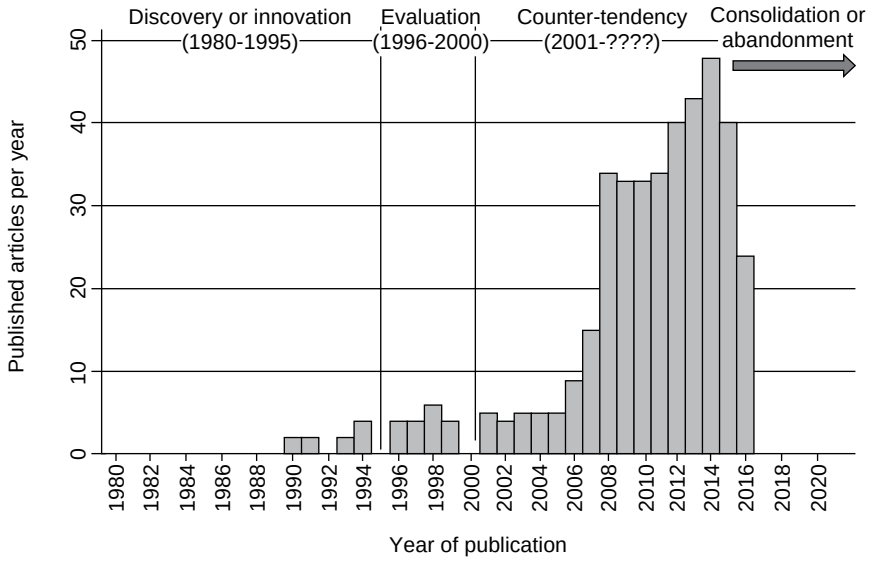

Source: PubMed 16/06/2016.

Figure 1.

Knowledge stages of self-ligating brackets in relation to the number of published articles per year.

trend in question. This may influence a novice reader or lecturer to make erroneous conclusions by reading articles that lack methodological or statistical quality and with a poor study design which favors poor decision taking.[4]

Orthodontists must have a criterion on self-ligating bracket systems: we must worry about being more critical with the literature. We should not accept as absolute truths what is stated in commercial papers and we must have an interest to investigate on the subject. Bonding brackets does not make us orthodontists; in the same way that reading articles and attending courses without questioning or proposing alternatives does not make us wiser, only better informed. The foregoing is linked with something that is becoming more and more common among orthodontists: hearing about disappointments in the experience of users self-ligating bracket systems or strongly questioning their cost-benefit ratio. Returning to the analogy of the smartphone, buying without considering more than publicity increases the chances of making the wrong decisions.

To think that the only difference between a traditional bracket and a self-ligating bracket is the closing clip is just as wrong and simplistic as to think that a smartphone is only a cell phone for checking emails. The self-ligating bracket systems are about to enter a stage of consolidation or abandonment. To win, in my opinion, it is necessary to answer the following questions: Does the current biomechanics of the straight archwire is sufficient or is there a need to generate more efficient biomechanics? Are there alternative methods to compensate for the higher torque loss of self-ligating brackets? Will it be possible for self-ligating systems to compensate for their deficiency of rotational control, mainly in the anterior segment? Finally, in the medium term, the cost of self-ligating brackets will be equal to traditional brackets, by the law of supply and demand in the same way that today preadjusted brackets have almost the same cost as the Edgewise brackets?

The panorama is open for all orthodontists and this opinion is a cordial invitation to all interested parties to provide new information on the subject in the Revista Mexicana de Ortodoncia.

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