Dear Ortho Professional:

In this edition we will cover both old and new products for our 1st edition of the new Millennium. We will be changing our newsletter somewhat to make it more of an educational tool in which guest writers may submit articles for publication. We will strive to feature articles written by doctors and other orthodontic professionals, that will help keep you on the cutting edge of knowledge.

This month, we feature an article about the First Class Leone® appliance, which was published in the June edition of THE JOURNAL OF CLINICAL ORTHODONTICS. This product is used for the rapid distalization of the molar. Granted there are several appliances already in existence, but this product was created to incorporate the best features of each. With the opportunity of distalization of up to 10mm, without loss of anchorage (mesial movement of the anterior), I am sure you will find this to be a product worth adding to your arsenal.

In future editions we will present exciting articles about the Grummons appliance, the Super Lingual Half Screw, the Veltri screws and many more!

As always, please do not hesitate to call with your questions.

Sincerely,

Kory Carman

Featured This Month

First Class Leone®

A NEW APPLIANCE FOR RAPID MOLAR DISTALIZATION

Dr. Arturo Fortino
Dr. Massimo Lupoli
Dental Technician Massimiliano Parri

The distalization of the first upper molar often represents the first phase of the therapy when the treatment has been established according to non-extraction methods (or to the method of extraction of the second molars).

In the past, the extra-oral traction and the sliding jigs associated with Class II inter-maxillary elastics represented the methods used for distalization.

The main problem of such methods was the need for remarkable patient compliance. Therefore, in the last few years, new devices have been conceived and produced in the attempt to obtain not only more efficient distal movement mechanics, but also to reduce to the minimum,
LeoneAmerica’s new band driver is made completely of stainless steel. Unlike other band drivers that are made using plastic components, ours may be heat-sterilized. The unique design allows activation in all positions with seating pressure of 80 to 1000 grams and features replaceable tips*. For the easy placement and adjustment of bands, think Leone!

*P1002-01 Curved Tip Replacement and P1003-01 Straight Tip Replacement

**Pozzi Ortho Case Promo**

Many of us have wanted a portable case to carry all of our materials to satellite offices. Putting materials inside plastic storage boxes is fun, but does not really give you a fast, organized, simple way of transporting materials to your second and third offices.

This leather case has a carrying handle and wheels which allows the user to pull it along in an easy manner.

We designed this case with the doctor in mind. It comes with six removable band boxes that will hold all of your orthodontic bands by sizes. Next we have four smaller compartments for items such as wires and ligature ties. On top of these are two stackable shelves to place bulkier items such as facebows and adhesives. The front of the case folds down with inserts that will hold eleven instruments. Next to these are inserts to hold several of your tubes of straight lengths of wire. To celebrate the new millennium, LeoneAmerica will offer this special promo item to our customers until the end of March. Please call us for pricing and details.

**First Class Appliance Continued**

In response to requests for a hands-on working area where students can work on projects while a lecturer speaks on a particular topic, we have opened training centers in Oxnard California, Phoenix Arizona and Florence Italy. Our professional customers are invited to make an appointment for advanced product training.

Oxnard is located just one hour north of the Los Angeles International Airport. Arrive a few days early and enjoy our sunny beaches and exciting shopping in beautiful downtown Old Ventura; truly a shopper’s paradise!
CLASS LEONE®: a new appliance for uni- or bi-lateral distalization of first upper molars.

The Appliance
The history of this appliance is relatively recent, and is in a constant state of development. As usual, it is difficult to create something totally new. Thanks to our clinical experience and to our good deal of curiosity, we have been able to manufacture an appliance which represents the fresh interpretation of the “Formative Screw” system (where the screw plays an active role) as presented at the 96th Annual Session of the American Association of Orthodontists in Denver. The device, presented at the AAO, had been developed by an engineer as a possible system of distalization, which provided for the palatal application of the screw and which, at that time, had not yet been clinically applied. We tried to create a system that could work with the screw, even though the method of activation and the force it could develop were unknown.

The first appliances looked like the appliances shown in figures 1 and 2. The first clinical results were encouraging, at least for distalization, but we thought that it was useless to include an expansion screw in the Nance button, and above all, we noticed that the problem with this kind of appliance was the consistent loss of anchorage. Thanks to several attempts, we have succeeded in creating a satisfactory version of the First Class Leone®, which as we can see, is now completely different from its initial prototype. This is the version that we have clinically used on a broad basis.

Description of the Appliance
The First Class Leone® consists of four bands, a vestibular side and a palatine side.

**Bands**
Two bands are to be placed on the first upper molars and two bands on the second premolars or on the second deciduous teeth (figures 3-4). This is the first important difference between the First Class and other systems for distalization. In fact, the possibility of placing the anterior band on deciduous teeth with advanced root resorption, confirms that the counterforce developed by the screw is generally neutralized by this particular palatine system, thus reducing the risk of loss of anchorage (figures 5-6).

**Vestibular side**
On the vestibular side of the bands, the screw must be soldered (active part), so that it does not interfere with the single .022” x .028” tube, where the arches will be inserted.
afterwards (figures 7-8).

Moreover, the splint ring must be welded on the band of the premolar. The splint ring is an opened ring acting as a guide for the screw.

**Palatine side**

The palatine side of the appliance is a Nance button which has been modified both as to its dimension, since it is extended towards the lateral sectors, and as to its shape, since it takes a “butterfly-like” form, in order to have greater stability during the blocking phase. The wire is hard .045” steel and it is shaped in a single piece in order to avoid any fracture and the presence of too many soldering points (figures 9-10).

On the palatine side of the molar, a piece of .045” tube is soldered, to insert the arm of the butterfly, which will allow for the distal movement of the molar during the active phase without any tipping movement (figure 11).

Between the molar and the premolar there are:

1) - The stop screw which is passive during distalization, and becomes active only during the blocking phase; the screw blocks the distalized molar.

2) - A 0.010” x 0.045” 10 mm long Memoria spring, which, at the beginning of distalization is completely compressed, and during activation counteracts the vestibular screw and prevents molar rotation and the development of posterior cross-bites (figure 12).

The New Appliance: First Class Leone®

The results of the utilization of the First Class Leone®, during three years of clinical trial, have been remarkable.

Our intuition has been confirmed by more than 180 cases we have treated and cephalometrically measured.

The only problems we found during this period were: first, the need to re-activate the appliance (and, thus, to place another screw) in those cases requiring a distalization over 5mm; secondly, a certain fragility of the splint ring soldered to the premolar band, that sometimes opened and made the activation of the screw impossible.

Therefore, we have conceived, together with the technical staff of the Leone Company, a modified appliance with renewed components.

Today, we have at our disposal a new screw which allows for a distalization up to 10 mm, and we have replaced the splint ring with a closed ring in which the screw must be introduced, creating a rigid fracture-resistant system (pictures 13-14).

The Manufacturing of First Class Leone®

In order to obtain optimal results, it is necessary to have at one’s disposal the required materials (Leone kit A1710-91) and to follow the technical instructions here below:

- Alginite impression, preferably with bands in place and good position.
- Pouring of the cast with extra hard plaster.
- Welding of the 0.045” tube on the palatine surface of the first molar and of the support ring of the screw on the vestibular surface of the second premolar (figure 15).
- Palatine shaping of the 0.045” wire (included in the kit).
- Soldering of all the above mentioned components.
- Refining and polishing of the soldered parts.
- Placement of the Memoria 0.010” x 0.045” spring with related threaded tube in the ring, which has been previously welded to the band of the second premolar.
- Insertion of the blocking ring in the head of the male screw: this allows for the rotational movement of activation in the utmost safety for the patient (figure 17).
- Soldering of the female tube on the vestibular surface of the band of the first molar.
- Refining and polishing of the female threaded tube.
- Bending of the support palatine arm of the appliance and placement in the palatine vault with the hold-ups for the resin.
- Resin finishing of the Nance button, modified by means of the spray technique (figure 18).
- Polymerization of the resin.
- Refining and polishing of the appliance (figure 19).

Clinical Prescriptions

This appliance can be used both in mixed and permanent dentitions.

We have previously stated that the support can be on both the second premolar and on the second deciduous teeth.

A unique characteristic of this appliance is that of producing molar distalization without any tipping, even in the presence of completely erupted second molars (figures 20-21).

The First Class Leone® is prescribed in the following clinical situations:

- Skeletal and/or dental Class II malocclusions with prevalent maxillary component in individuals at the end of growth.
- Class II malocclusions associated with skeletal and/or dento-alveolar deepbite (Class II division 2).
- Skeletal Class II malocclusions when the lack of patient cooperation limits the orthopedic therapy aimed at restraining the unfavorable growth of the upper jaw.
- Class III malocclusion due to maxillary deficiency when it is necessary to increase the length of the upper arch.
- Cases with severe crowding.
- Cases requiring the re-opening of spaces due to agenesis or previous extractions.

Clinical Data

At present, 109 Class II cases have been treated by rapid molar distalization, 61 females and 48 males.

The age ranged from 7-8 to 14-15 years.

The required distalization in the cases we have treated varied from 4 to 8 mm, with an average of 4.8 mm.
In the 26 cases that required a distalization over 5mm, we have placed a new screw, after the 5mm activation of the first screw; the new First Class Leone® overcomes this limit, since it allows for up to 10 mm of distalization. The average time of distalization treatment was 52 days, with minimal and maximal values respectively of 28 and 105 days.

**Clinical case**

Male patient, age 12 years and 2 months.

Cephalometric measurements indicate Class I skeletal relationships in a hyperdivergent individual (figure 22). There is a remarkable increase in both overjet and overbite (figures 23-24-25).

The analysis of the occlusion shows a Class II molar relationships of 5 mm on the right and 1 mm on the left, with an increased overbite.

The appliance has been placed on the upper arch, and the required distalization has been
obtained in a total time of 97 days (figures 26-27-28-29-30-31-32-33-34). Cephalometric measurements and superimpositions (figures 35-36-37) indicate good stability of the anterior anchorage with a bodily distal movement of the upper first molars.

Advantages of First Class Leone®

In conclusion, the use of this appliance offers the following clinical advantages:

• It produces a rapid distalization of the first (and second) molars, even when the second molars are completely erupted.
• It reduces the duration of treatment in Class II cases, with a non-extraction treatment protocol.
• It can be used both in permanent and mixed dentitions.
• It distalizes molars with bodily movement without producing any tipping effect.
• It does not produce loss of anchorage or changes in the vertical dimension.
• After its use for the distalization process it can be easily transformed in an anchorage unit in order to complete the retraction of the frontal teeth.

Fig. 28

Fig. 29

Fig. 30

Fig. 31

Fig. 32

Fig. 33

Fig. 34

Fig. 35

Fig. 36

Fig. 37