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Incognito System: Clinical Cases

Abstract:

Today a customized lingual orthodontic appliance achieves better treatment results as conventional buccal orthodontics. Two cases with a Class I malocclusion treated with customized lingual orthodontic appliance are presented. Efficiency and results are the keywords of these treatments completed in a short time with few visits.

Key words: customized lingual appliance, Class I malocclusion, Incognito System

CASE I

A 47 year-old female patient came for consultation asking for an invisible appliance able to perform a fast and comfortable treatment. Being employed by an international company she required extreme flexibility in scheduling the appointments due to her frequent travels abroad.

The patient presented a skeletal Class I relationship with brachyfacial tipology (Tab.1). Facial profile was flat and balanced. Treatment should keep the profile with no changes.

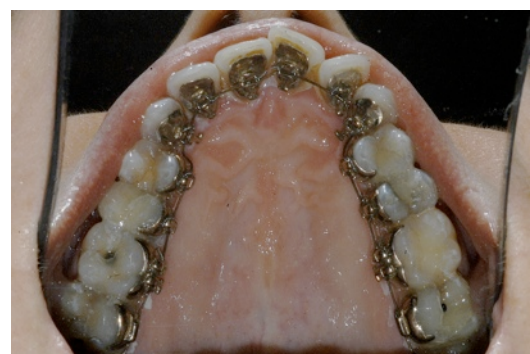
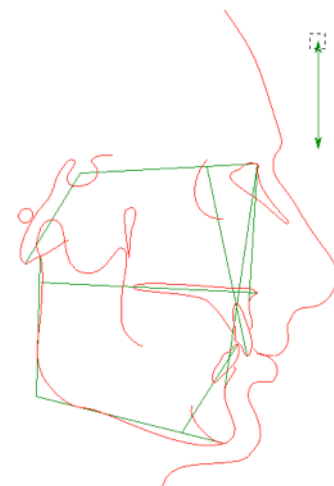
Dentally, she showed a Class I molar and canine relationship with severe crowding especially in the lower arch. Her medical and dental history was within normal limits. Tooth 1.5 was covered by a ceramic crown and many fillings changing the normal tooth anatomy.

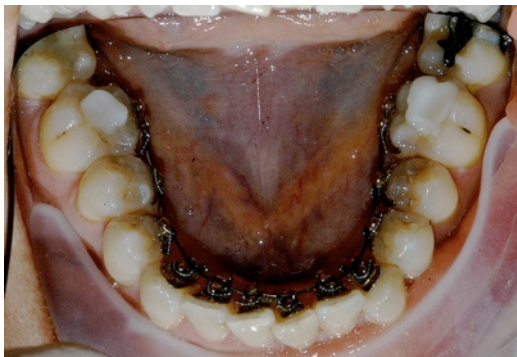
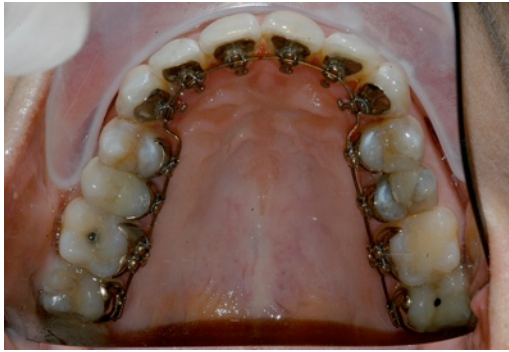
The treatment started simultaneously on both arches and after 3 months the crowding was much reduced (figure 3). On the lower arch the change was impressive and essentially made by the .014 wire Copper NiTi SE. This efficiency in changing the arch form is a typical advantage in comparison to traditional vestibular appliance.

Variable	Value [°]	Florence Clinical Norm	Difference	Deviation
N-S-Ea	128.2°	132.0±4.6°	0.0	
S-N-A	82.4°	80.4±4.4°	0.0	
S-N-B	80.0°	78.5±4.1°	0.0	
A-N-B	2.4°	2.0±2.4°	0.0	
N-S-Gn (°)	64.8°	67.1±4.7°	0.0	
SN - P. Palatino	4.1°	6.1±3.9°	-0.1	
SN - P. Mandibolare	25.0°	33.7±6.5°	-2.2	
P. Palat - P. Mand.	21.0°	25.6±5.5°	0.0	
ArGo - P. Mand.	106.5°	128.2±4.8°	-15.9	
Isup. - P. Palatino	118.2°	109.5±7.5°	+1.2	
Isup. - SN	114.1°	101.2±8.3°	+4.6	
Inf. - P. Mand.	100.0°	89.8±7.2°	+3.0	
Inf. - SN	54.9°	56.4±8.5°	0.0	
Ang. Inter	120.8°	125.5±10.9°	-3.8	
Co - Gn mm	122.5mm	121.0±4mm	0.0	
Co - Go mm	70.7mm	59.9±3.7mm	+7.1	
Go - Gn mm	87.5mm	78.4±3.7mm	+5.4	
S - Go mm	92.5mm	79.2±4.5mm	+8.8	
N - Me mm	127.4mm	122.1±4.5mm	0.0	
ShA - Me mm	72.9mm	68.0±5.1mm	0.0	
ShA-Me / N-Me %	57.3%	54.5%	+2.8	
S-Go / N-Me %	72.6%	64.9%	+7.7	



Tab.1





All cephalometric values improved (Tab. 2). No stripping was necessary.



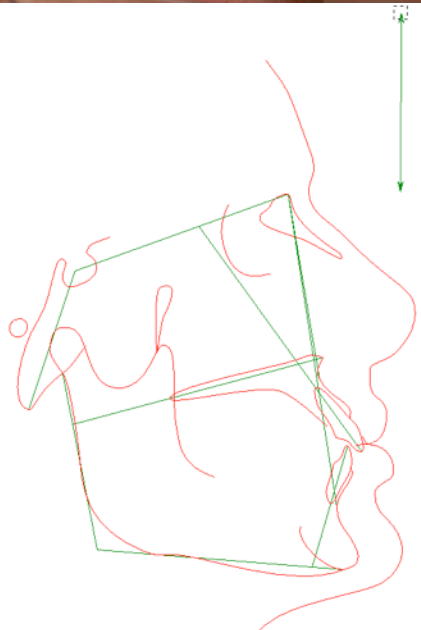
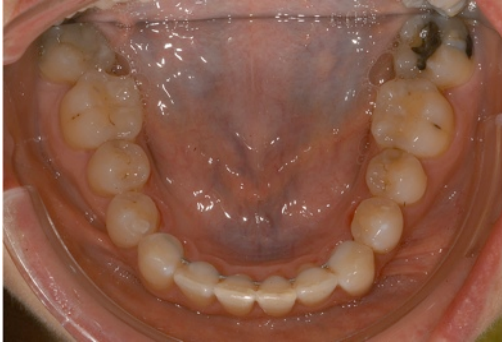
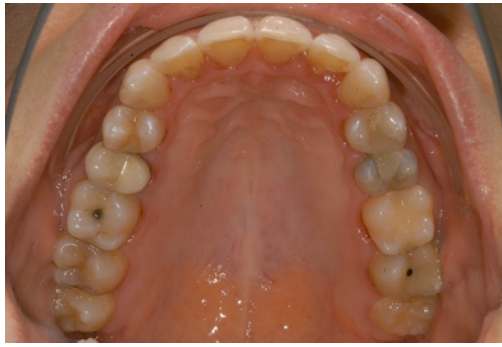
Total duration of active treatment was 15 months using ribbon-wise VH as slot configuration and the following arch wire sequence:

- on the upper arch .012 CuNiTi SE, .016 x .022 CuNiTi SE, .016 x .022 SS, .0182 x .0182 TMA

- on the lower arch .014 CuNiTi SE .016 x .022 CuNiTi SE, .016 x .022 SS, .0182 x .0182 TMA

Treatment was smooth and comfortable for the patient (only 9 visits including indirect bonding and de-bonding). Only the bracket connected to the crown accidentally detached, but the direct repositioning was easy and fast.

Florence					Deviation
Variable	Value []	Clinical Norm	Difference		
N-S-Ba	129,4°	132,0±4,6°	0,0		
S-N-A	79,9°	80,4±4,4°	0,0		
S-N-B	79,9°	78,5±4,1°	0,0		
A-N-B	0,9°	2,0±2,4°	0,0		
N-S-Gn (Y)	66,2°	67,1±4,7°	0,0		
SN - P. Palatino	-4,7°	9,1±3,9°	0,0		
SN - P. Mandibolare	-24,4°	33,7±6,0°	-2,8		
P. Palat - P. Mand	19,7°	25,6±5,5°	-0,4		
ArGo - P. Mand	105,6°	126,2±4,8°	-17,8		
Interp. - P. Palatino					
Interp. - SN	110,7°	109,5±7,5°	0,0		
Interp. - P. Mand	106,0°	101,2±8,3°	0,0		
Interp. - SN	101,7°	89,8±7,2°	+4,7		
Interp. - SN	53,9°	56,4±8,5°	0,0		
Ang. Inter	129,0°	135,5±10,9°	0,0		
Co - Gn mm					
Co - Go mm	102,7mm	121,0±4,4mm	-14,3		
Co - Go mm	63,2mm	59,0±3,7mm	0,0		
Go - Gn mm	72,0mm	78,4±3,7mm	-2,7		
S - Go mm	78,5mm	79,2±4,5mm	0,0		
N - Me mm	106,5mm	122,1±6,3mm	-9,3		
SN - Me mm	59,8mm	68,0±5,1mm	-3,1		
Shk-Me / N-Me %					
Shk-Me / N-Me %	56,2%	54,5%	+1,7		
S-Go / N-Me %	73,7%	64,9%	+8,8		



Case II

This 30 year-old male patient came for consultation well informed about lingual orthodontics. His internet search allowed him to have a very clear overview of the different treatment options.



We took impressions and all the records at first access to our office, and after three weeks the appliance started to work leveling and aligning.



The patient presented a skeletal Class I relationship with deep bite. Brachifacial tipology.



Facial profile was convex and the lower facial third was reduced. Treatment should improve the profile. Dentally, he showed a Class I molar and canine relationship with crowding in both arches. His medical and dental history was within normal limits. Tooth 3.4 was in cross bite. Some teeth required conservative therapies.

The left upper lateral incisor had the lingual surface covered by the central incisor. The Incognito technique called “surface matching” is able to produce a bracket using the limited surface available. The evident advantage is starting the treatment with all the brackets connected to the arch wire. The side effect is a less efficient control over the tooth rotation having the bracket slot far from the long tooth ax. To have a perfect control requires some finishing bends.

Both arches were bonded at the same time and the patient never complained about discomfort, pain, or phonetics problems.

Total duration of active treatment was 14 months using ribbon-wise VH as slot configuration and the following arch wire sequence:

- on the upper arch .014 CuNiTi SE, .016 x .022 CuNiTi SE, .016 x .022 SS, .017 x .025, TMA .0182 x .0182 TMA

- on the lower arch .014 CuNiTi SE .016 x .022 CuNiTi SE, .016 x .022 SS, .0182 x .0182 TMA, .018 x .025 SS

Treatment was easy and the patient was very satisfied (only 11 visits including indirect bonding and de-bonding). A very little cosmetic treatment was suggested to correct the grinded occlusal surface of the tooth 2.1 to match the little height discrepancy with 2.2.

The deep bite and Spee curve were significantly improved as it is evident also in the profile comparison.





Conclusions

With customized lingual orthodontic appliance every case can be treated and treatment results are high leveled, all our patient may benefit of an invisible appliance. Former problems as as discomfort, speech alteration, finishing difficulties, etc.. has been overcome. With the presentation of these two clinical cases we want show how efficient this system can be in treating the malocclusions in a very precise and reliable way. The correspondence of the final models with the setup is really high and a real “source” of professional satisfaction.