Adult orthodontic patients insist on aesthetic treatment options that have the least possible impact on their work and life. Clear aligners are an excellent treatment option that is well suited with removable aligners.

Incognito lingual braces (3M ESPE) are an ideal treatment option for adult patients who are best treated with a fixed system and who are looking for invisible orthodontics. They are also perfect for patients who are not committed to dealing with removable aligners. Lingual braces are an exciting advancement in orthodontic care, and many patients are thrilled. I would like to present a brief background on the Incognito lingual braces system, followed by a discussion of a case I treated with lingual braces and why I chose this system.

The Incognito appliance is manufactured using state-of-the-art CAD/CAM technology. The first step in the fabrication process is taking accurate polyvinyl siloxane impressions and bite registration using polyvinyl siloxane, and then creating a model in plaster and a diagnostic wax-up thereafter (according to my direct instructions). The final model is then sent to me digitally for feedback, and I can make a series of changes until I am satisfied with the final result. The final model is then scanned with a 3D scanner and the brackets are designed on the computer.

The Incognito appliance is designed to be as flat as possible, not much higher than a bonded retainer; this significantly improves patient comfort.

1. Patient discomfort during the adaptation phase: The appliance is designed to be as flat as possible, not much higher than a bonded retainer; this significantly improves patient comfort.

2. Difficulties in re-bonding: The customised bracket base covers the major part of the lingual tooth surface and therefore allows direct re-bonding without the need for any other positioning aids.

3. Inaccuracies in finishing: Inaccuracies of the slots due to production and resulting variation in torque play are now part of the past, owing to Incognito. Measuring rates show divergences of not more than 0.008mm between the slots. The precisely shaped archwires also make high-standard finishing easily achievable.

4. Figure 1 shows the different steps in manufacturing braces with the Incognito system.

This case report describes the treatment of a patient with a skeletal Class II malocclusion due to a retrognathic mandible and transverse maxilla. He also had a congenitally missing mandibular left central incisor. The extraction of a single mandibular incisor can be employed as a compromise treatment of certain malocclusions if the end result fulfills the requirements for a healthier dentition that is functionally and aesthetically harmonised in relation to the surrounding structures. In this case, one of these incisors was missing so extraction was not necessary.

The Class II malocclusion was corrected by non-extraction orthodontic treatment with a CAD/CAM fixed lingual appliance (Incognito). The Class III molar relationship had not changed at the end of treatment, but a Class I canine relationship was achieved and the facial profile improved owing to improved mandibular incisor in relation to the mandibular plane, which affects the position of the lower lip.

Diagnosis and aetiology

The patient was male, aged 25 years and nine months, and had the chief complaint of crowding and lower dental arch had 8mm of crown lengthening and lower dental arch had 6mm of crowding, excluding the width of the missing mandibular incisor, and the maxillary lateral incisors were in crossbite.

According to cephalometric analysis, there was a Class II jaw relationship and normal vertical facial height. The patient was in good health and his medical history showed no contra-indications to orthodontic therapy.

Treatment objectives

The treatment objectives included correction of the maxillary and mandibular anterior teeth. He had Class III canine and molar relationships on both sides, a 4mm overbite, a missing mandibular left central incisor, the maxillary midline was coincident with the mid sagittal plane, the mandibular midline was shifted to the left, the maxillary dental arch had about 7mm of crowding and lower dental arch had 8mm of crowding, excluding the width of the missing mandibular incisor, and the maxillary lateral incisors were in crossbite.

Treatment alternatives

Three treatment options were suggested to the patient. The first alternative entailed labial orthodontics using either metal or clear brackets. The second option entailed lingual orthodontics, as the aesthetic demand was very high for the patient and clear aligners would not have been able to achieve the needed results. Both Options one and two were non-extraction.

The third option was to extract all four first premolars but this would have affected the facial profile negatively. After detailed discussion with the patient, we chose Option two, non-extraction using a lingual appliance.

Treatment progress

Treatment began with customised, pre-adjusted, CAD/CAM fixed lingual appliances (0.550mm slots) placed on both the maxillary and man-
dibular arches using an indirect bonding technique. Levelling, alignment and expansion of the
arch were achieved using heat-activated, super-elastic, customised wire (14, 16, 18 x 22, and 18 x 25). Detailing and finishing
were performed using 16 x 22 stainless-steel wire and 18.2 x 18.2 Beta III Titanium Archwire.

The total active treatment time was 17 months. Patient compliance was good. For retention,
fixed maxillary and mandibular retainers were provided, as well as an Essix retainer at night.

Treatment results
The post-treatment extra-oral photographs showed general improvement in the facial pro-
file. The post-treatment intra-oral photographs showed general improvement in the anterior
intercuspation and dental aesthetics. Class I canine relationships were obtained on both
arches, and overjet, with the canines in a normal overbite of approximately 2.5 mm. The
orthodontic treatment was completed in 17 months. The orthodontic treatment was
completed in 17 months. The final photographs show normal overbite and overjet.

Treatment protocol using a CAD/CAM lingual system. Obviously, it is not necessary to
perform lingual orthodontics in terms of both professional and patient satisfaction is
practice and training. The Incognito system can be used for all types of malocclusions
with the same precision as labial braces. The possibility of incisor extraction should be a
part of every clinician’s portfolio of treatment techniques. If it is planned carefully and executed
properly, incisor extraction can be an effective way of satisfying the particular set of treatment ob-
jectives.

Discussion
The treatment objectives were attained with the non-extraction treatment protocol using a CAD/
CAM lingual system. Obviously, the results reflect the effects of not only the proclination of the
mandibular anterior teeth, but also the relief of crowding in lateral and protrusive excursions. Class I
relationships were obtained on both arches. The good interden-
tal relationship also provided a well-balanced facial profile with lip competence.

Another treatment option would have been to extract the
maxillary and mandibular first premolars. However, this was not a desirable treatment alter-
native owing to its negative effect on the facial profile.

Performing lingual ortho-
dontic treatment for each pa-

tient in the average orthodon-
tic office is now a reality. The
treatment results are of a high
level, and all our patients may
benefit from an invisible appli-
cance. Former problems, such as
discomfort, speech alteration,
finishing inaccuracies, and par-
ticular tooth anatomy, can be
overcome in this manner.

The extraction of the man-
dibular incisors constitutes a
therapeutic alternative in treat-
ing certain anomalies. It is not a
standard approach to symmetri-
cally treating most malocclusions,
but the therapeutic aims must be adjusted in certain
clinical situations to individual
patient needs, even when this
means that the final occlusion
achieved is not ideal. The delib-
erate extraction of a mandibular
incisor in certain cases allows
the orthodontist to improve oc-
cclusion and dental aesthetics
with minimal orthodontic treat-
ment. In all cases, however, a
diagnostic cast is required to
determine the occlusal pos-
sibilities precisely.

Conclusion
The key to success in lingual orthodontics in terms of both
professional and patient satis-
faction is practice and training. The Incognito system can be
used for all types of malocclusion
with the same precision as labial braces. The possibility of incisor extraction should be a
part of every clinician’s portfolio of treatment techniques. If it is planned carefully and executed
properly, incisor extraction can be an effective way of satisfying the particular set of treatment ob-
jectives.
Dr Khaled Abouseada is a consulting orthodontist involved in private practice in Saudi Arabia, Bahrain and Egypt. He lectures orthodontics at the Batterjee Medical College and Specialized Academy for Medical Training. He has lectured at many international dental and orthodontic forums. He is a certified trainer for CAD/CAM orthodontics and serves on the editorial board of Dental Tribune Middle East. He won the I Love My Dentist Award in 2010–2012 and the MENA Award for Orthodontic Best Case in 2010–2012.

Dr Khaled M. Abouseada
Asnani Dental Clinic
P.O. Box 122721
Jeddah 21332
Saudi Arabia
khaled@khaledabouseada.com

Editorial note: A complete list of references is available from the publisher.

Unique, original & clinically proven

The membrane you can trust

- THE WORLD’S NUMBER 1 MEMBRANE
- 17 years of successful clinical history
- More than 200 studies
- Early membrane vascularisation supports bone regeneration


www.bio-gide.com

Long-term results of 12–14 years

swiss made

Fig. 5a-g Showing upper and lower initial and final comparing them to their corresponding set-up

Fig. 5a

Fig. 5b

Fig. 5c

Fig. 5d

Fig. 5e

Fig. 5f

Fig. 5g