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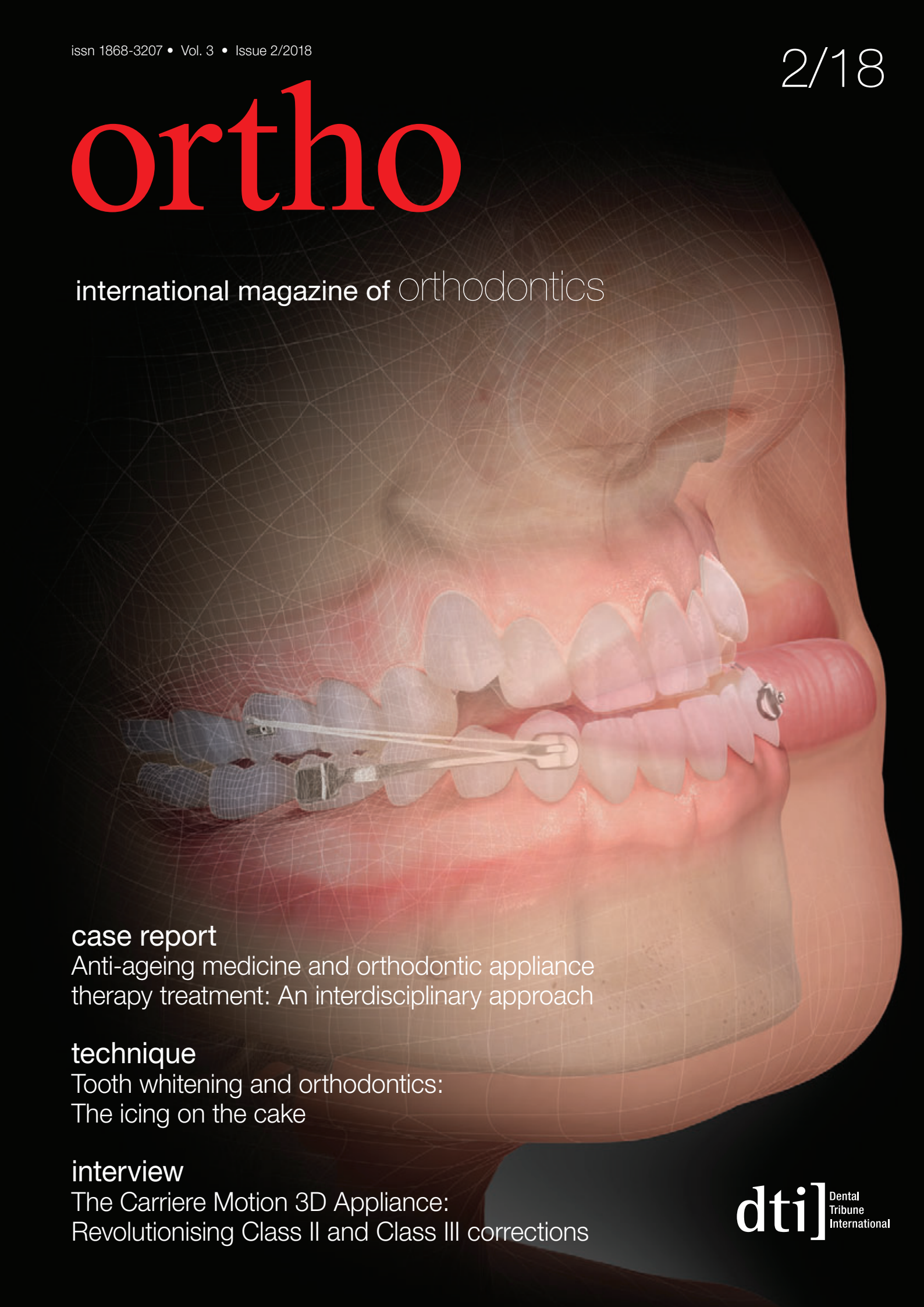

case report
Anti-ageing medicine and orthodontic appliance therapy treatment: An interdisciplinary approach

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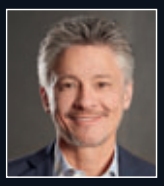

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Prof. Mauro Labanca

MD, DDS, is an oral surgeon, and a fellow of the registrar of the European section of, and a councillor of the International Council of the International College of Dentists.

The best is often the enemy of the good

Dear readers,

A teacher of mine and a talented chief physician of general surgery taught me that "the best is the enemy of the good". I am referring to when we were young and ambitious surgeons looking to achieve perfect final closure of the wound. Insisting on placing the last stitch, though not essential, resulted in damaging a blood vessel, forcing us to reopen the patient.

A nice article I read recently ("Teeth within an hour" by Dr Göran Urde, Implant Tribune, Middle East & Africa Edition, November/December 2017) leads me to paraphrase the aphorism of my teacher as I do in the title and to reconfirm what I have repeated constantly all over the world. I see more and more that we are witness to an increasing and often unmotivated tendency to have everything and to want it immediately, even healing processes. As Dr Deepak Chopra, a physician and contemporary biologist, has said: "We are the only creatures on earth who can change our biology by what we think and feel."

Therefore, in an era in which the Internet and smartphones render waiting obsolete and Dr Google has the solution to all our problems, our patients expect biology to follow this trend, adapting the length of healing to their changed expectations. In this new scenario, patients have the same expectations when it comes to dental treatment—and this applies to every type of treatment, from implantology to orthodontics. Knowing that new procedures and offerings are continually being developed, patients are asking for solutions that meet their expectations more than their biological needs—and of course with no discomfort or problems.

In this crazy race among specialists to see who is quicker to place implants or align teeth, that will soon lead us (unfortunately an obvious prophecy that has many adherents) to a dramatic fallout in terms of failures, insurance problems and renewed distrust of our already mistreated specialty, for which many are responsible.

Companies, in doing their work, try to convince us to adopt new techniques and new protocols less and less validated by time and numbers. Unknown companies offer cheaper and innovative systems not supported by studies and research, and dentists (together with their patients) will act as human guinea pigs.

As professionals, we are too often prone to external pressures: instead of safeguarding the independence of our decision-making processes, to avoid the risk of losing the case to be treated, we can be tempted not to do what science and our conscience would suggest is needed, and rather let ourselves be influenced by what the external world imposes on us, often personally facing the consequences for it.

I would like to conclude by quoting George Bernard Shaw: "Science is always wrong. It never solves a problem without creating ten more." Let us go back to treating cases only after serious and careful evaluation and using validated protocols that we have mastered. Gaining a few months to later lose teeth moved wrongly or too quickly is not always the best ethical choice.

Yours faithfully,

Prof. Mauro Labanca

page 09

page 13

page 19

Cover image courtesy of Dr Luis Carrière

editorial

The best is often the enemy of the good 03
Prof. Mauro Labanca

case report

Anti-ageing medicine and orthodontic appliance therapy treatment: An interdisciplinary approach 06
Dr Derek Mahony & Dr Theodore R. Belfor

Non-extraction treatment of severe crowding with the aid of cyclic forces and corticotomy 12
Dr Gaetano Turatti, Dr Amedeo Salomone & Dr Luca Giordano

technique

Tooth whitening and orthodontics: The icing on the cake 18
Dr Yassine Harichane

industry report

New concepts in aligner therapy with the orthocaps system 24
Dr Wajeeh Khan

interview

Embracing Sagittal First treatment—The Carriere Motion 3D Appliance: Revolutionising Class II and Class III corrections 30
Interview with Dr Luis Carrière & Dr John Graham

ICD—Honouring the world's leading dentists since 1920 34
Interview with Dr Dov Sydney

manufacturer news 36

meetings

Survey: What attracted you to the EOS Congress? 40

Nice, Hamburg, Oslo, Limassol and Athens to host upcoming EOS congresses 41

BOC interview: "There will be a strong emphasis on interdisciplinary care" 42

International events 44

about the publisher

submission guidelines 45

international imprint 46

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Anti-ageing medicine and orthodontic appliance therapy treatment: An interdisciplinary approach

By Dr Derek Mahony, Australia, & Dr Theodore R. Belfor, US

Introduction

Anti-ageing is a branch of medicine focused on how to prevent, slow or reverse the effects of ageing, thus helping people to live longer and healthier lives. Recently, however, more evidence-based medicine has led to anti-ageing becoming a multi-billion-dollar industry. In the past few decades, the market for anti-ageing products and services has grown into a global industry valued at an estimated US$261.9 billion in 2013, up from US$162 billion just five years before, according to BCC Research, a publisher of technology market research reports based in Wellesley in the US.[1]

The recent medical literature and evidence-based medicine show that, as we age, there seems to be a loss of fat volume in some areas of the face, as well as a change in the morphology of the facial skeleton. Facial soft-tissue augmentation by injection has become increasingly popular as a minimally invasive option for patients seeking cosmetic facial enhancement. Replacing lost soft-tissue volume allowed for a more comprehensive approach to total facial rejuvenation. It has been demonstrated that orthodontic treatment with an intra-oral orthopaedic dental appliance (Homeoblock, Ortho-Smile) increases soft-tissue volume and enhances facial symmetry, producing soft-tissue changes consistent with improved facial esthetics.[2] This appliance can be added to the treatment protocol of facial injection to create a relatively non-invasive interdisciplinary approach to midface enhancement.

With this article, we show how orthopaedic/orthodontic appliance therapy, in conjunction with the placement of dermal fillers for the reduction of lines/wrinkles and depressions in the face, can produce desirable facial soft-tissue enhancement. Furthermore, we show that the volumetric changes achieved by this combined treatment approach can produce a desirable result, namely a more youthful appearance.

Case study

A healthy woman in her mid-sixties presented for treatment with a strong desire to improve her facial appearance (Fig. 1). Her oral hygiene was good and there was no active periodontal disease. She had headache symptoms and clinical examination showed a disc displacement with reduction on her right side, with a maximum jaw opening of 38 mm. Her centre line was displaced 2 mm to the right and lined up when she opened < 10 mm, indicating that she had a mandibular displacement to the same side. A Homeoblock appliance, with a 5 mm bite block on the right side (to decompress her temporomandibular joint), was fabricated and delivered (Fig. 2). When she closed on the bite block, her occlusion freed up and the muscles realigned the mandible so that her centre line lined up correctly. Her headache symptoms were relieved in three weeks and her maximum opening was improved to 42 mm. The patient continued Homeoblock treatment for nine months.

Intra-oral and extra-oral photographs were taken to monitor treatment, and 3-D stereophotogrammetry was performed. Extra-oral 3-D digital photographs were taken with a facial capture system (3dMD). A facial capture system (3dMD/Kodak) and stereophotogrammetry were used to generate a clinically accurate digital model of the patient's facial surface. It uses a technique of stereo-triangulation to identify external surface features viewed from at least two cameras. This approach incorporates the projection of a unique, random light pattern that is used as the foundation for triangulating the geometry in 3-D. The capture takes < 2 ms per frame. The data is processed and a highly precise < 0.5 mm root mean square of the distance measured is calculated, creating

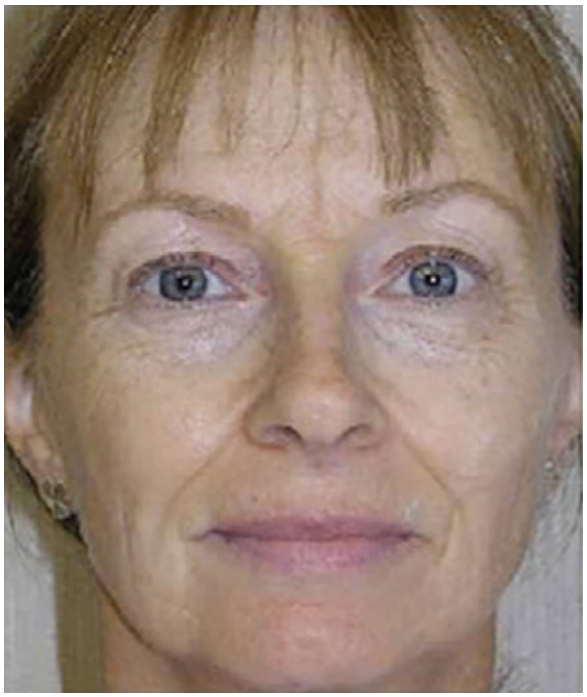

Fig. 1

Fig. 2

Fig. 1 Pretreatment facial and anterior intra-oral photographs (note deep dental overbite). **Fig. 2** The Homeoblock appliance.

Fig. 3: The pretreatment face, the post-treatment face at six months and nine months, and finally, a morphometric evaluation of the change.

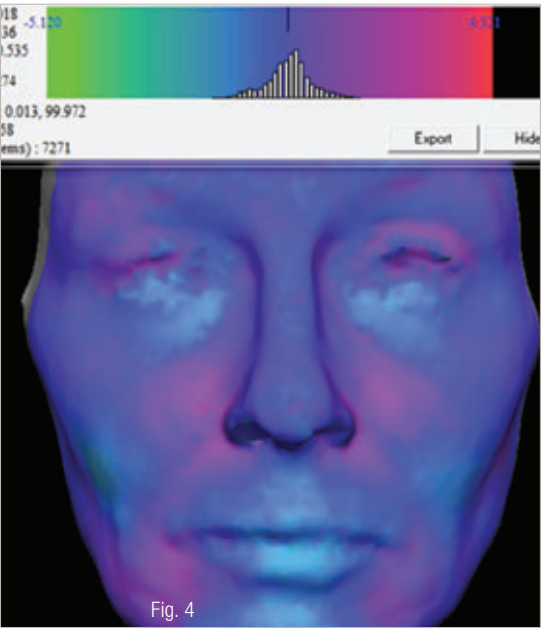

Fig. 4

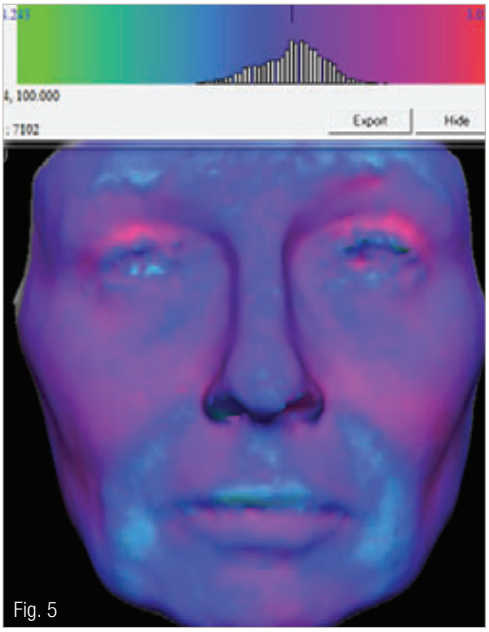

Fig. 5

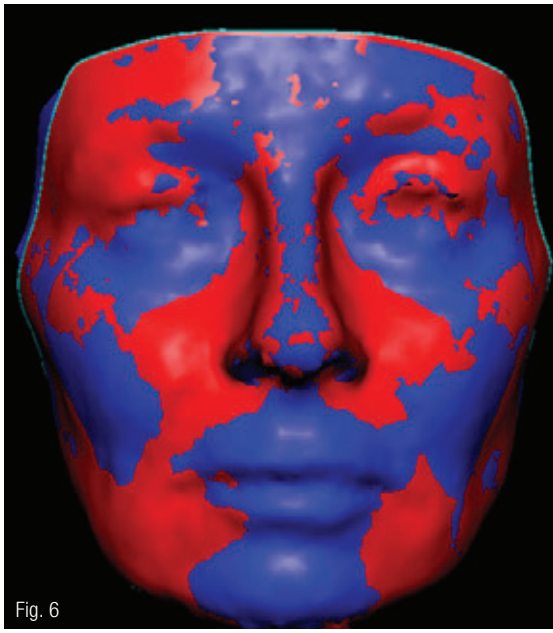
Fig. 6

Fig. 4: Morphometric evaluation of the final results: finite element analysis showed increased facial volume with a directional change of almost 4 mm, indicated by the red to orange colour. **Fig. 5:** Superimposing the red post-treatment face over the blue pretreatment face, we can graphically illustrate the volumetric changes that occurred during our treatment. There was an increase in volume in the frontal, supraorbital, inferior orbital, zygomatic, nasal base, upper lip, nasolabial depression, and marionette and pre-jowl areas. **Fig. 6:** Morphological facial changes in the lips, zygoma and jowl area after the placement of 1 ml Restylane and 1.3 cc Radiesse. Note the deeper red to orange colour in the areas where the injections were placed.

a digital model of the patient that is ready for immediate clinical use. Stereophotogrammetry for quantifying facial morphology was introduced in a study published in the *Journal of Dentistry* in 1996.[3] It was concluded that "stereophotogrammetry is a suitable 3-D registration method for quantifying and detecting development changes in facial morphology".[3]

Evaluating the patient's face over the nine months of Homeoblock treatment for her temporomandibular dysfunction showed a change in the morphology of the face (Fig. 3). Morphometric analysis was performed by superimposing before and after 3-D images and using finite element modelling. Thousands of triangular reference points were used to establish the change. The blue area indicated no change and the red to orange areas showed an increased dimension of up to 2.9 mm. We saw an increased volume above and under the eyes, the zygomatic region, the upper lip, and the marionette and pre-jowl areas. From the facial photographs, we could see a reduction in the lines, wrinkles and depressions (Figs. 4 & 5).

After nine months, the patient's facial changes prompted her to go forward with injections of dermal fillers. She was given 1 ml of Restylane (Galderma) for lip enhancement and two 1.3 cc corrections with Radiesse (Merz Aesthetics) in the pre-jowl and marionette areas and along the inferior border of the mandible, and the inferior and lateral borders of the zygoma (Fig. 6).

Results

Post-treatment, the patient's face appeared more youthful with better defined cheekbones and a firmer jaw line. The skin appeared smoother with fewer lines, wrinkles and depressions (Figs. 7a & b).

Discussion

Facial changes related to palatal expansion are clearly outlined in Singh: "The maxillary complex shows a change in size (and/or mass) allied with an increase in structural complexity, in association with biological processes."[4] Palatal expansion presumably, switches on osteoblastic genes associated with active boney deposition and concomitant remodeling of the spatial matrix ensues."[4] In relation to the changes around the eyes, we must recall that the maxilla forms the floor of the orbit and skeletal changes may become apparent after expansion;[4] specifically, changes in orbital morphology may be reflected on the skin of the face: as the lower eyelids become tighter, the lateral canthus becomes more horizontal; facial width increases, particularly at the zygomatico-maxillary sutures; and the craniofacial form, putatively, not only functions better, but looks more attractive.[4] These changes have been documented in children, where palatal expansion is an everyday occurrence. The current article documents similar changes in a non-growing adult. Combining the results of palatal expansion and the placement of dermal fillers, we obtained a very satisfactory improvement in facial aesthetics.