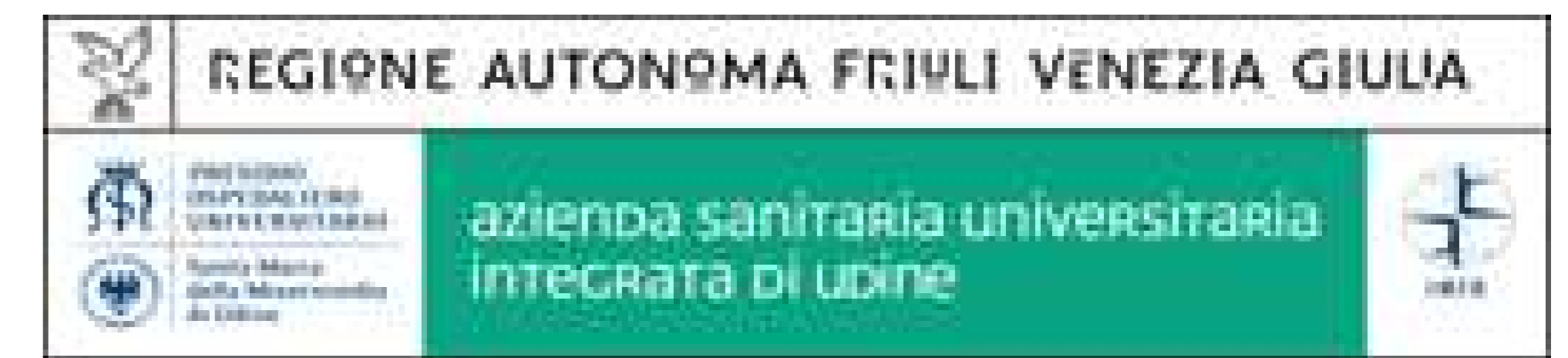


FACIAL ASYMMETRIES CORRECTION: a chimere? Indications and limits



Department of Maxillofacial Surgery
Center for Diagnosis and Treatment of Skeletally Based Malocclusions
Regional University Hospital – Udine – Italy



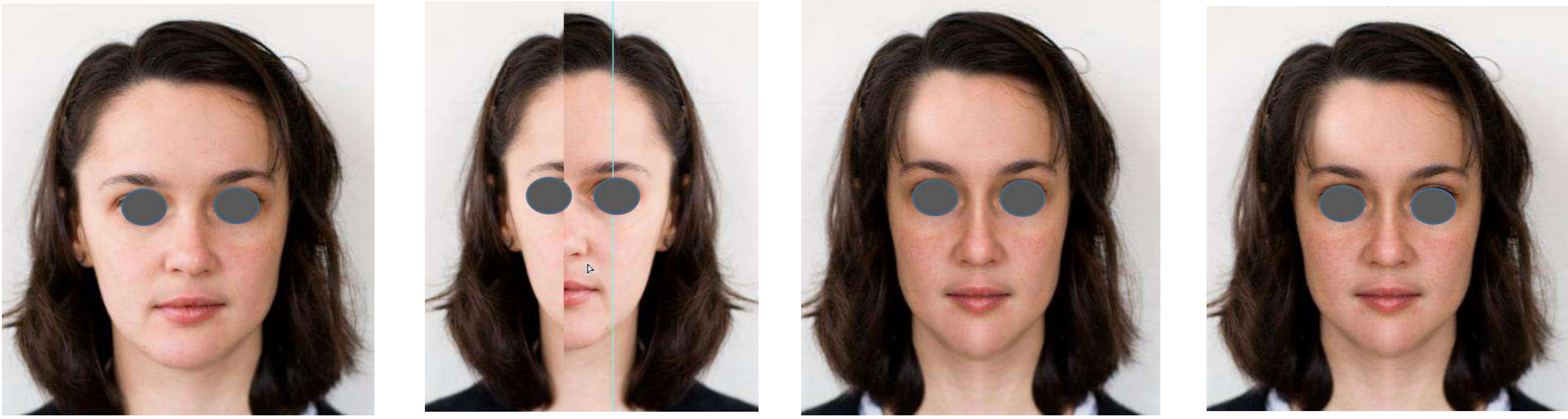
3121cp

Head Dr. A.M. Miotti

A. Dovier, C.D. Napolitano, F. Coppola, G. Ceretti, R. De Gotzen

Aim: Perfect symmetry is associated with beauty concept but a perfect symmetrical face can sound often false or inexpressive. Face asymmetry is a characteristic trait of the human species: asymmetry is the rule, symmetry is the exception. It's distributed in many parts of the face; a complete elimination of all small components would be impossible as well as undesirable.

ONE FACE, TWO DIFFERENTS PHOTOSHOP RESULTS



V.I.P. asymmetric faces

In Byzantine painting and Renaissance perfect geometric symmetry was the attribute of divinity. Donatello (1386-1466), first, represented a "peasant" Christian on the cross with an asymmetrical face: aroused dismay and indignation



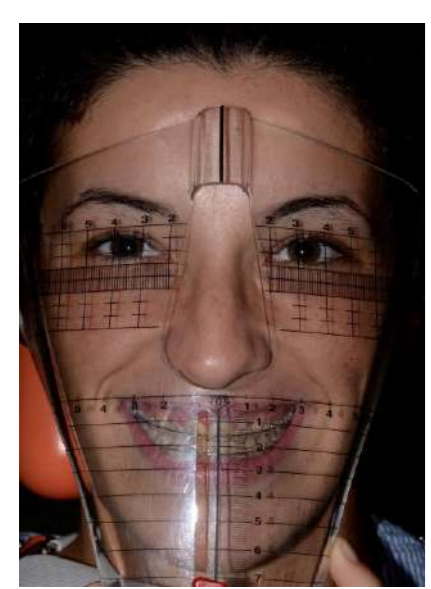
OUR DECISION TREE

Materials and methods: There are reversible asymmetries (correction possible during growth) and real, irreversible asymmetries. Proper correction needs adequate diagnosis and aetiological evaluation. We describe our diagnostic path and decision tree.

OUR DIANOSTIC PATH

Patient should be evaluated from 12 o'clock. In folder must be registered:

- A) midlines position at the beginning and throughout orthodontic treatment
- B) minimum occlusal plane obliquities (with a lower wedge retained between the lips in premolars area)
- C) coincidence between dental midlines in maximum intercuspitation (PMI) and midlines position at opened mouth



- stone casts mounted in articulator
- Photographic evaluation (virtual facial design)
- Dr Bedet Mask (simmetroscope)
- Postero-anterior teleradiograph
- Rapid prototyping from facial massive Tac



Often underestimated, but frequently associated to facial asymmetries, is presence of an oblique occlusal plane

TYPE OF ASYMMETRIES	MIDLINES IN PMI	MIDLINES IN MAXIMUM OPENING	ETIOLOGY	THERAPY	
FUNCTIONAL	not centred	centred	nasal breathing incorrect habits osas osas reduction of nasal discharge atypical shallowing low lingual posture	1) incorrect habits modification 2) bur milling 3) palatal expansion	
Unilateral chewing (PLANAS)	not centred	centred	incorrect habits	1) bur milling to reduce stiffness cusps 2) composite to smooth AFM angles 3) canine torque correction	
DENTAL	DDA	not centred	crowding early loss of deciduous or definitive teeth	orthodontic correction 1) bur milling 2) ortho prosthetic retreatment surgery	
SKELETAL	precontacts with mandibular desplacement Hypercondylar growth	not centred	partially centred not centred	incorrect prosthetics and orthodontics therapies primitive skeletal trauma or anchilosis	
ATM asymmetries	monolateral mandibular hypoplasia	not centred	not centred	closed md lock	surgery
	ATM disorders	centred or partially centred	not centred		1) atm therapy 2) bur milling 3) surgery

*PMI= Position in maximum intercuspitation

A correct treatment choice, in addition, requires to take into account patient age and the growth factor. Residual growth can become a double-cut weapon, especially if not considered.

AFM EVALUTATION ACCORDING TO PLANAS THEORIES

Right Functional masticatory angle (AFM) detected by sliding md to right; same thing is done in opposite side and then angles steepness is compared.

Symmetrical AFM of 15-20° is ideal for up to 30 years.

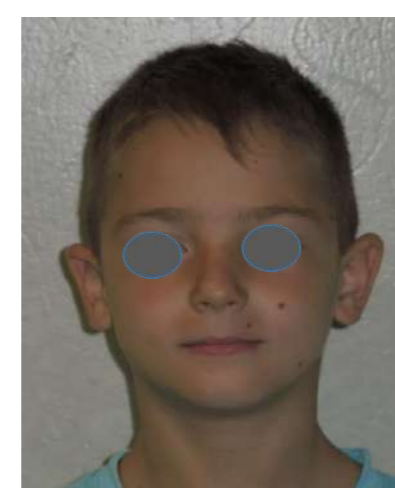
Pathologic asymmetric AFM: the patient is obliged to left side unilateral chewing. Right side muscles hyper-activity is detected.

Selective milling of excessive stiff cusps and use of composites for smoothing the AFM in opposite side.

Chewing always occurs in side where mandible is constricted to lower itself less (Planas minimal vertical dimension law)

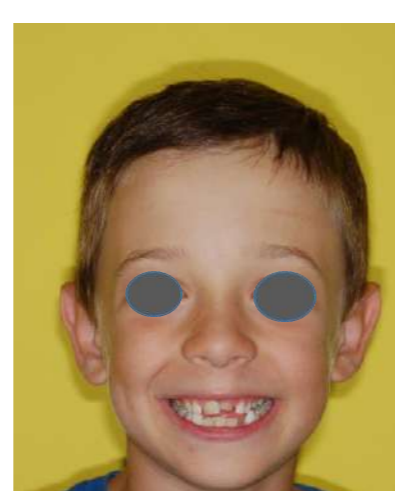


An asymmetrical case treated with Planas principles

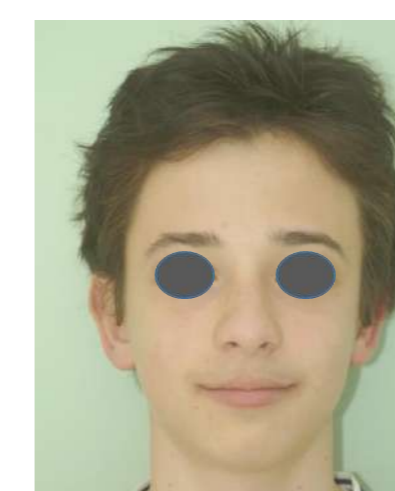


2 typologies: of occlusal plane bending

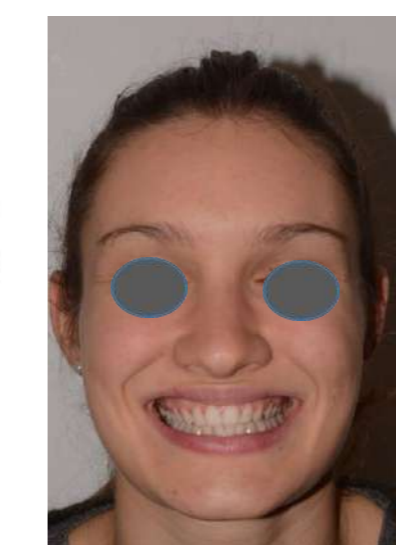
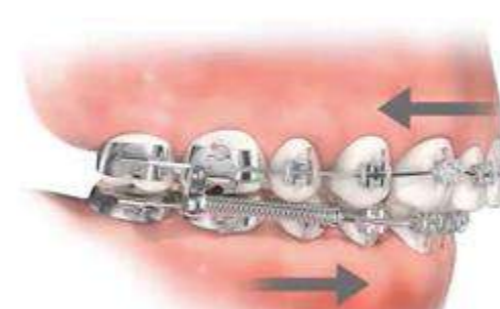
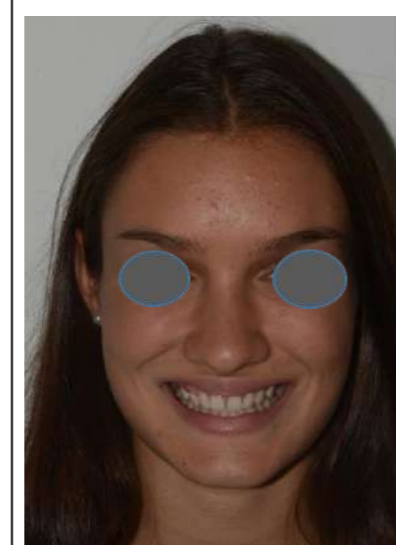
- a) Bending of both arches with oblique lips: banana skull or side bending skull (skeletal problem = surgical solution)
- b) Occlusal plane bending, without by lips obliquity (most unpleasant): functional. Result of unilateral chewing. It 's detected by measuring functional chewing angles (AFM-Planas Functional masticatory angle). Right AFM and left AFM must be compared.



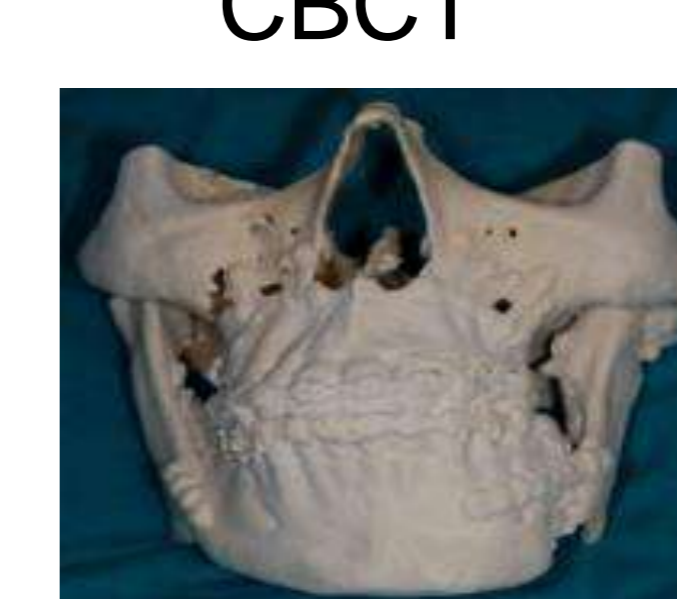
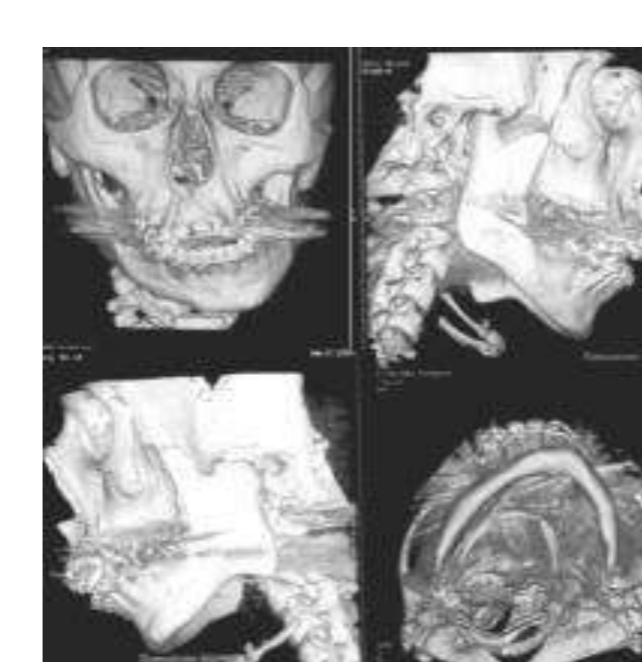
Asymmetrical case treated with RME in growth period



Asimmetrical dental and skeletal occlusion treated with a monolateral bite jumper



Skeletal asymmetry with TmJ ankylosis



Rapid prototyping



CBCT

SURGICAL CORRECTION

References

C. Santariello, F. Ballanti, M. Baroni, A. Baldrini, P. Cozza Inquadramento diagnostico e clinico delle asimmetrie scheletriche di interesse ortodontico
Diagnostic and clinical evaluation of skeletal asymmetry of orthodontic interest. Dental Cadmos | 2013;81(8):472-481

Conclusions: proper diagnosis is necessary. Different aetiologies need different therapeutical approaches. It is a tough test as the anomaly is never localized but distributed in most parts of the face. Therapy may require unpleasant choices, often forced to accept compromises: in nature, asymmetry is the rule, symmetry is the exception. Median lines slight deviation and slight occlusal cant are acceptable if not associated with functional problems.

- dental level: 1 mm of midlines asymmetry is difficultly noted by anyone but 3 mm are noted.
- facial level: 3 mm of facial asymmetry are not noted by anyone but 6 mm of facial asymmetry begin to be relevant.

Results: Perfect symmetry is a chimere and often compromise must be accepted: slight deviation of midlines is acceptable if not associated with functional problems.

- at dental level: 1 mm of midline asymmetry is not evident unlike 3 mm
- at facial level: 3 mm of facial asymmetry is hardly noted but 6 mm is relevant