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ACHIEVING THE BALANCE IN RHINOPLASTY

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- Open approach provides unlimited access to ALAR
CARTILAGES, SEPTUM AND
NASAL DORSUM
- Maximizes the control and predictability and minimizes the risks of a secondary operation

Best results in rhinoplasty are those in which the nose does not appear to have been “operated” upon, balanced between the parts and in harmony with other facial structures.

At the present time rhinoplasty is not a routine reduction procedure of the nose. It is rather a balancing procedure in which the reduction of some skeletal structures and augmentation of some deficient parts are performed together, for aesthetic and functional improvement.

For a predictable outcome stability of bony and cartilaginous skeleton is of upmost importance.

Overresections may lead to the loss of skeletal stability and may cause redraping problems of the skin envelope.

Loss of skeletal stability due to aggressive resections may lead to the functional and aesthetic deformities and problems related to skin redraping.



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**Balance Concept is first
described by
JACK SHEEN**

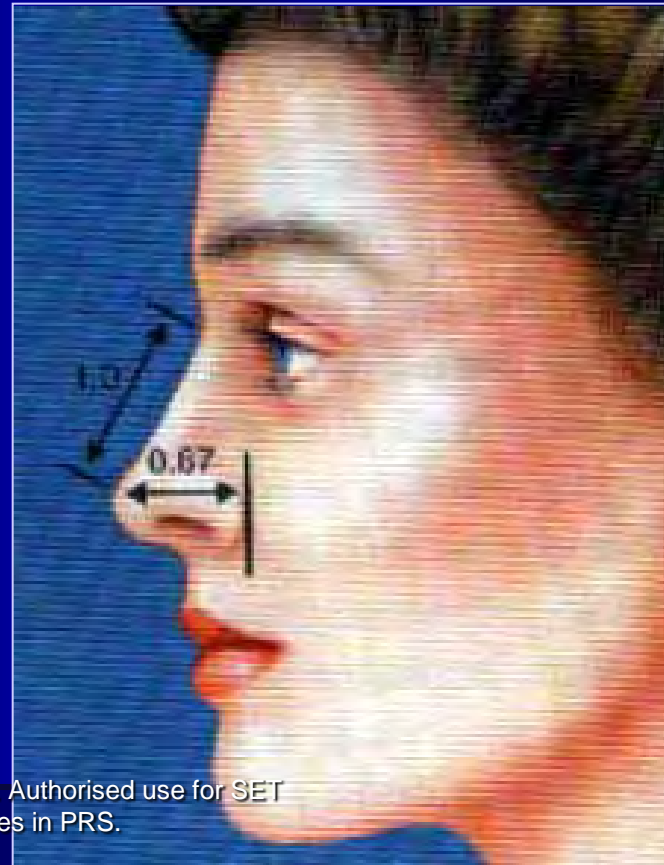
INITIAL CONSULTATION

COMPUTER IMAGING

- Computer imaging is helpful for the surgeon in the planning of the operation
- Computer analysis is useful to show the patient what changes are feasible in surgery
- Computer imaging helps to surgeon to understand the expectations of patient

PREOPERATIVE ANALYSIS

Systematic nasofacial analysis and accurate diagnosis of deformities is essential to establish the operative plan



For a natural and good rhinoplasty outcome achieving the balance on frontal, lateral and basal views is necessary

ADJUSTMENT OF LATERAL VIEW

3 IMPORTANT DETERMINANTS OF LATERAL VIEW

- Height of Nasal Dorsum
- Nasal Tip Projection
- Height of Radix

NASAL DORSUM

In women the dorsal line should connect the radix with supratip breakpoint at a level slightly lower than the point of nasal tip projection.

In men it should be planned higher so as not to overfeminize the nose.



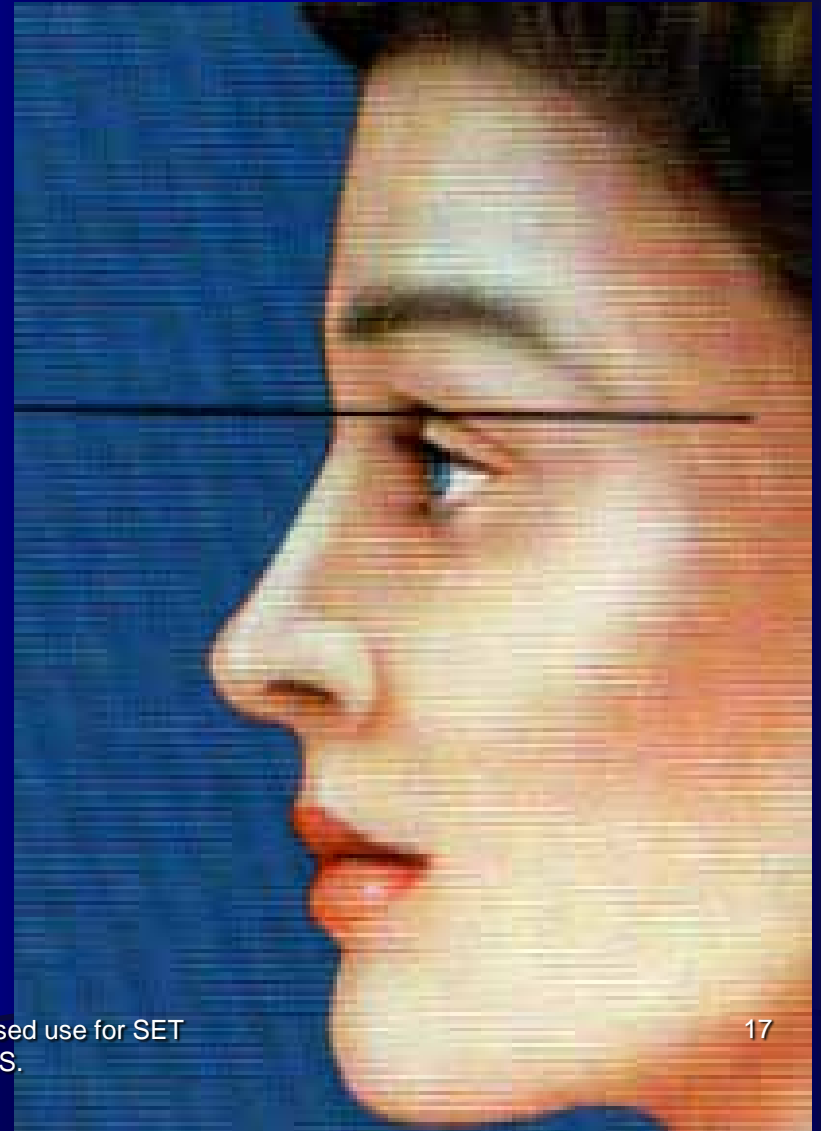
RADIX

Nasofrontal angle determines the character of the radix. Nasofrontal angle is ideally 134 degree. The height of the nasion should be approximately 15 mm. from medial cantus or 11 mm. from corneal plane.



RADIX

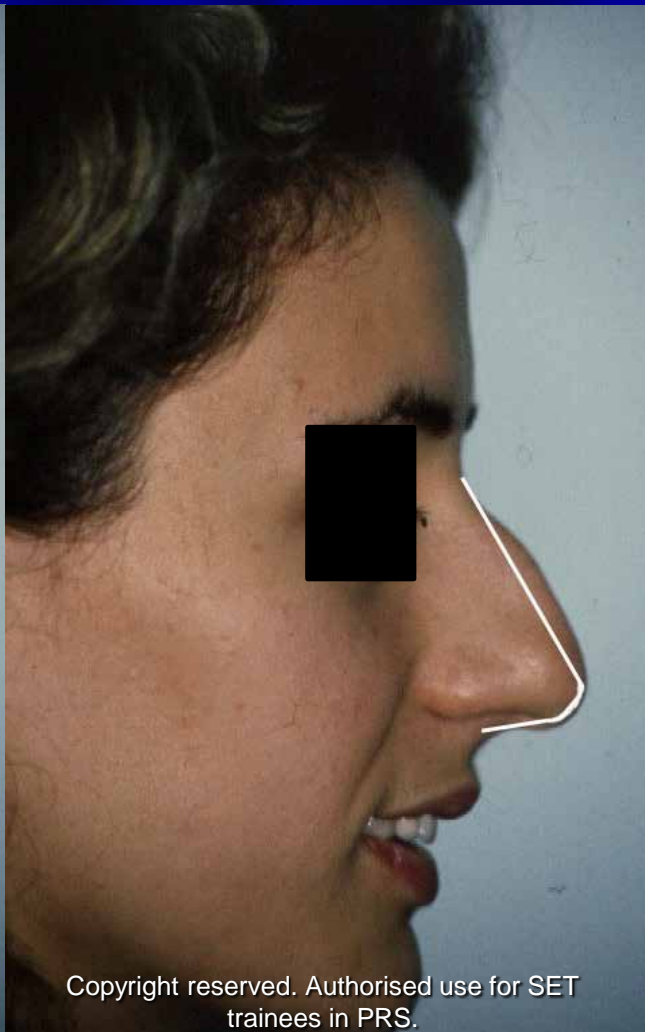
Radix area and nasion are the set point for nasofacial and nasofrontal angles, and their consideration is critical when assessing dorsum/base disproportion.



TRUE DORSAL HUMP



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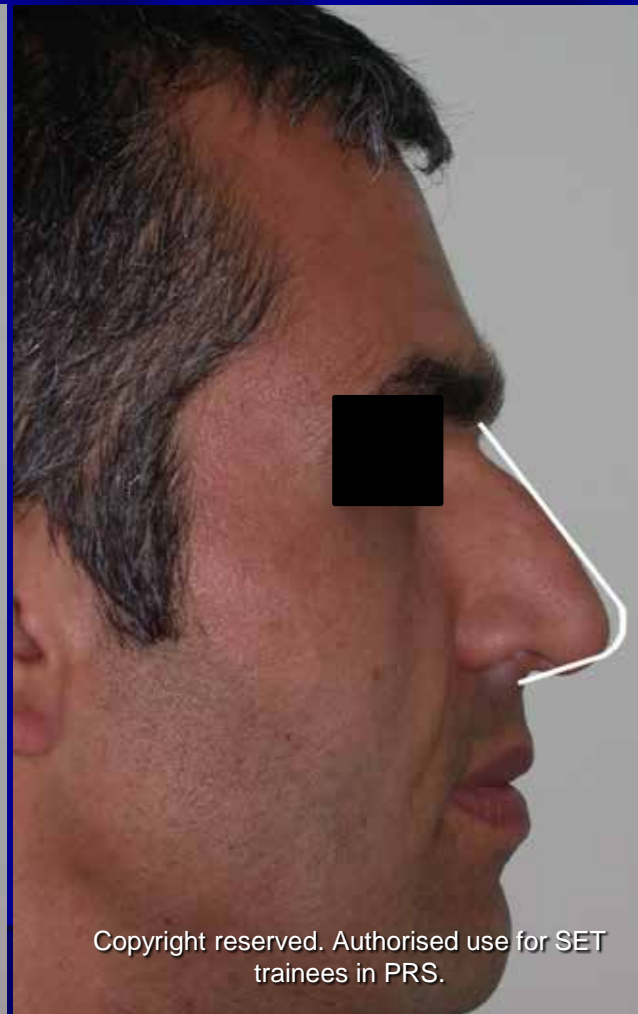
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PSEUDOHUMP

Due to Low Radix, Drooping Tip



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PSEUDOHUMP

Due to Underprojecting Nasal Tip



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DORSAL HUMP+LOW RADIX+ UNDERPROJECTING NASAL TIP



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RADIX AUGMENTATION

Radix augmentation is a balancing procedure to minimize hump reduction, thereby maintaining both dorsal height and a more natural nose.

Radix augmentation reduces the need of the dorsal reduction.

GRAFT OPTIONS FOR RADIX AUGMENTATION

▀ Cartilage

- Septum

- Cephalic trim remnants of alar cartilages

▀ Fascia

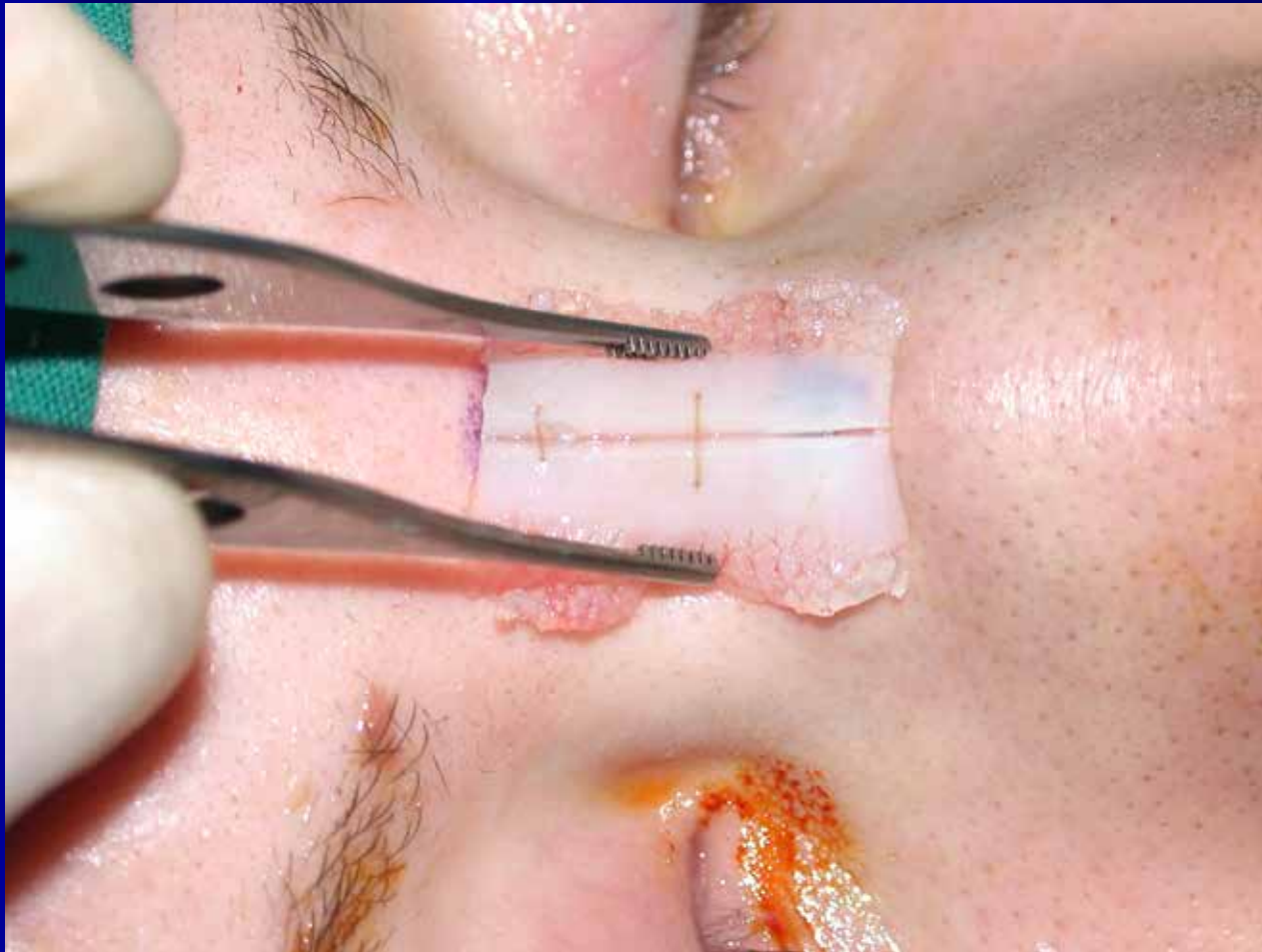
- Mastoid

- Deep temporal

▀ Cartilage+Fascia

▀ Fat

Cartilage Graft



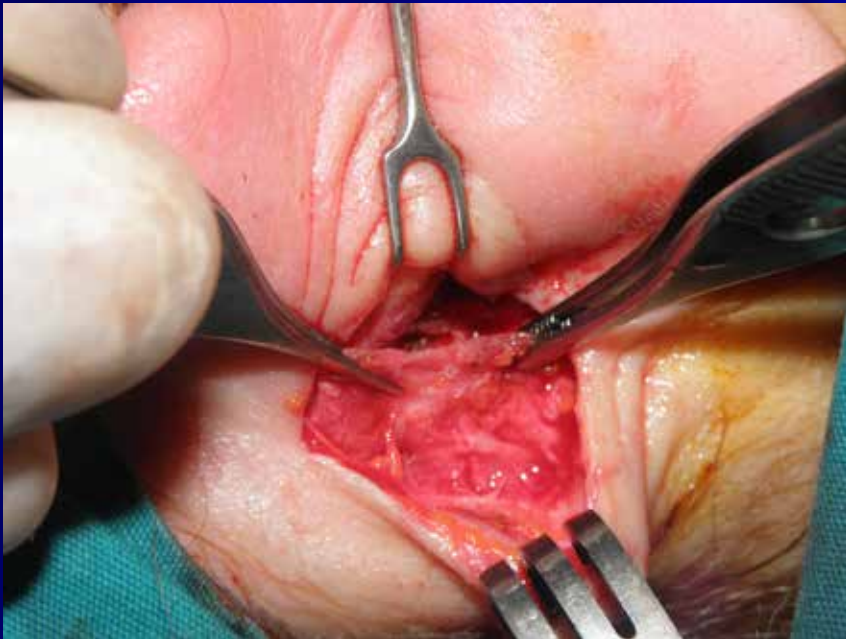
Cartilage Graft



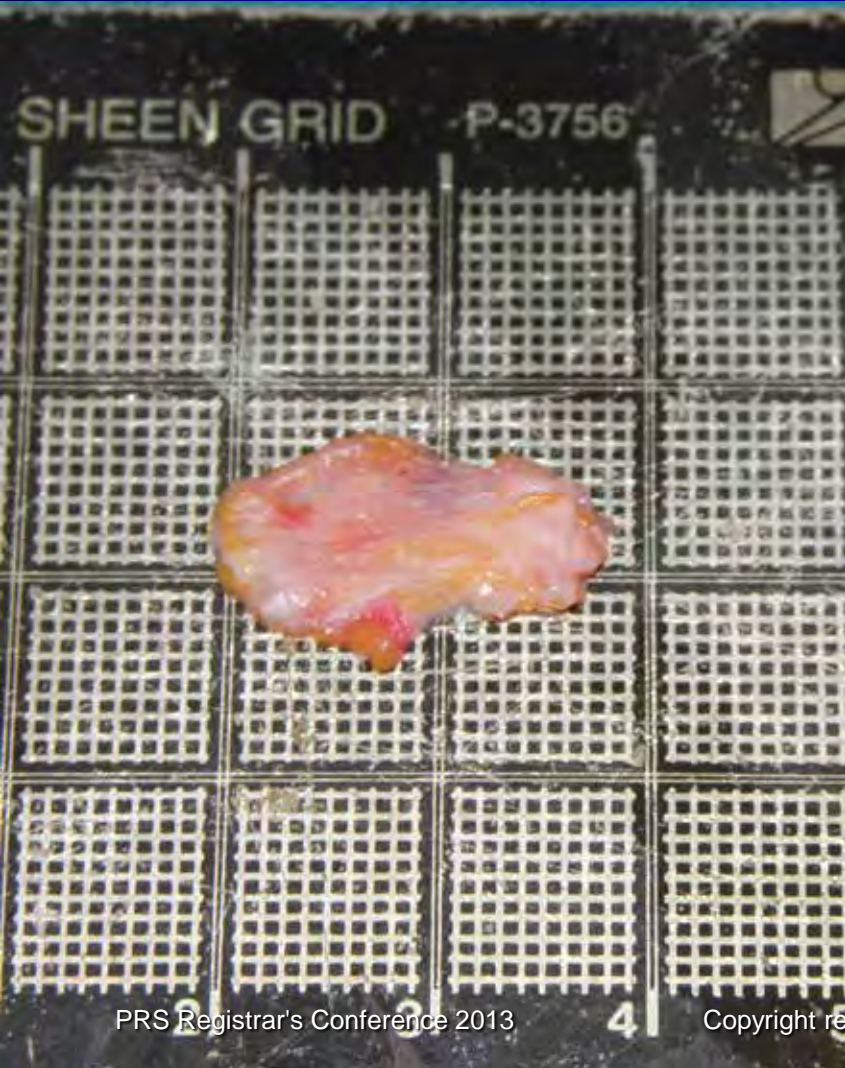
Cartilage Graft



Mastoif Fascia



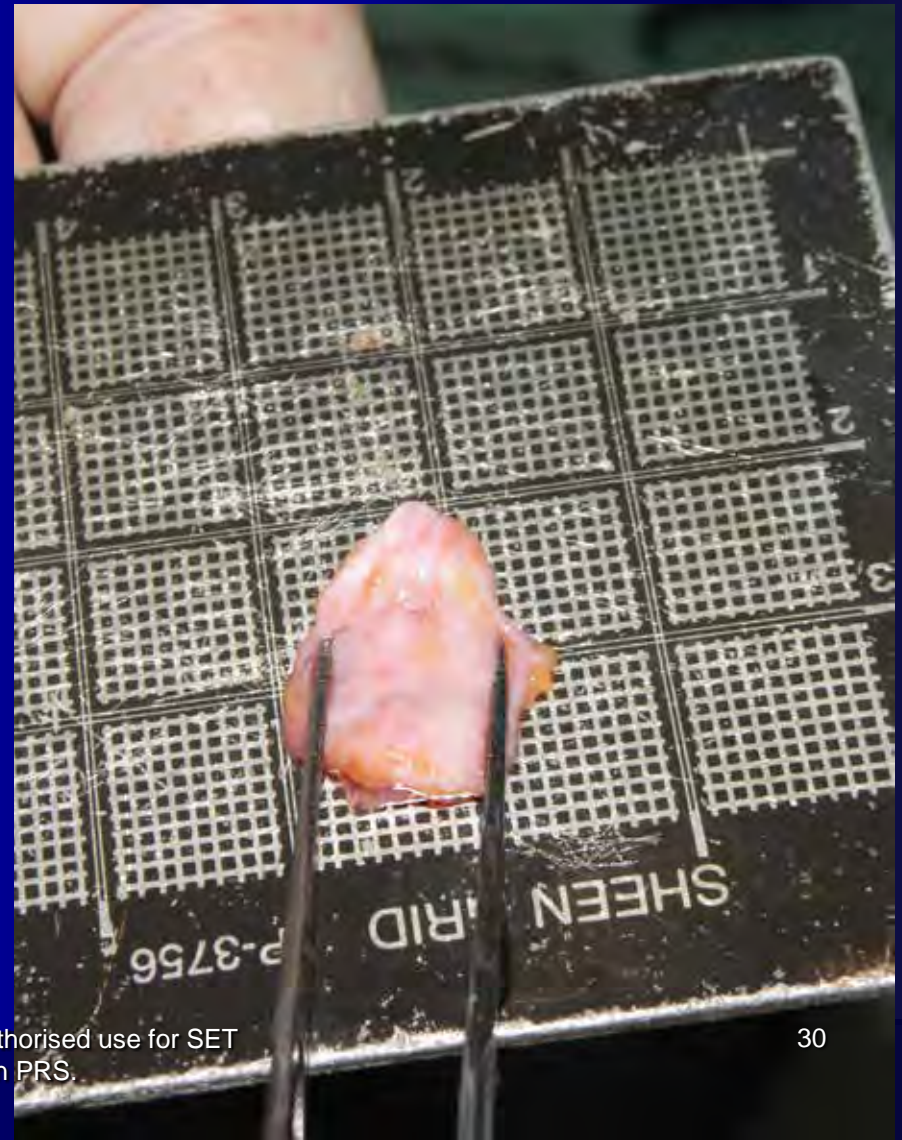
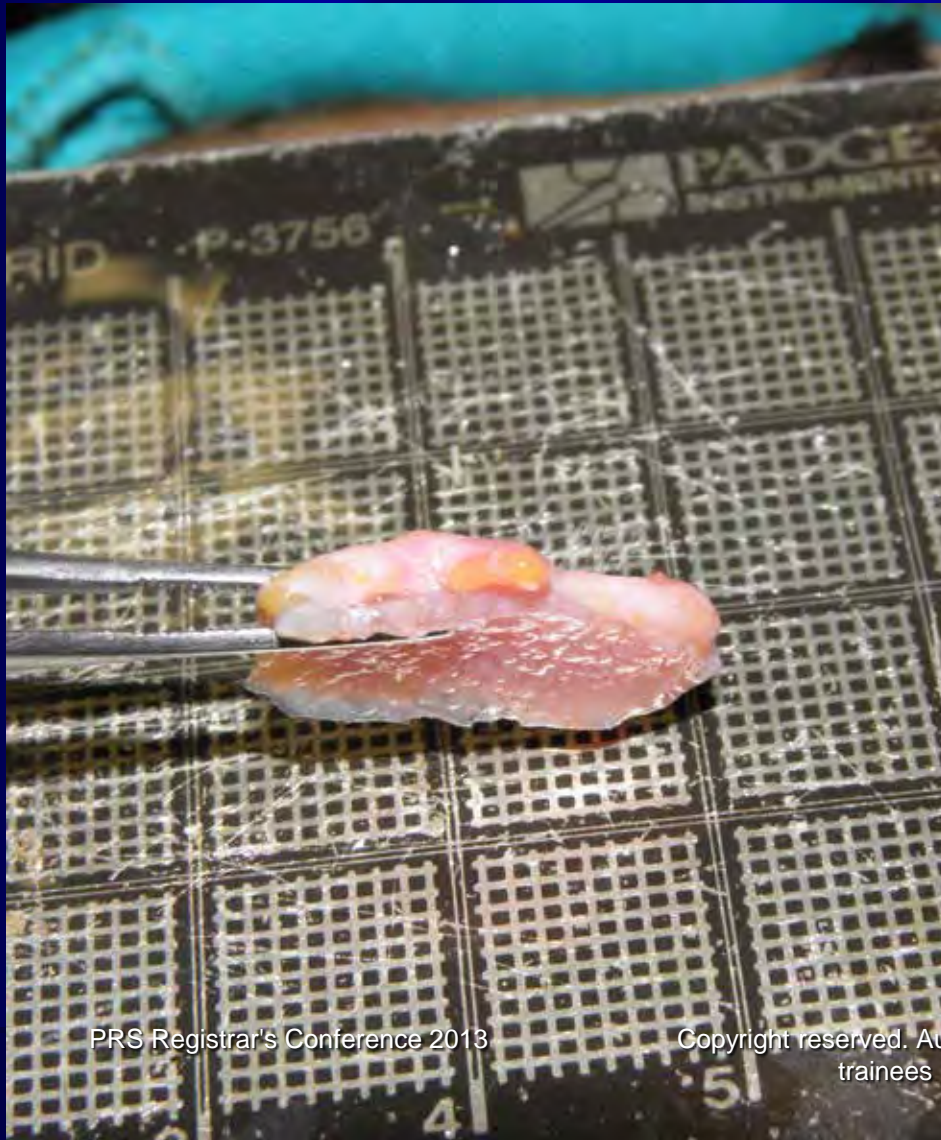
Fascia (Mastoid)



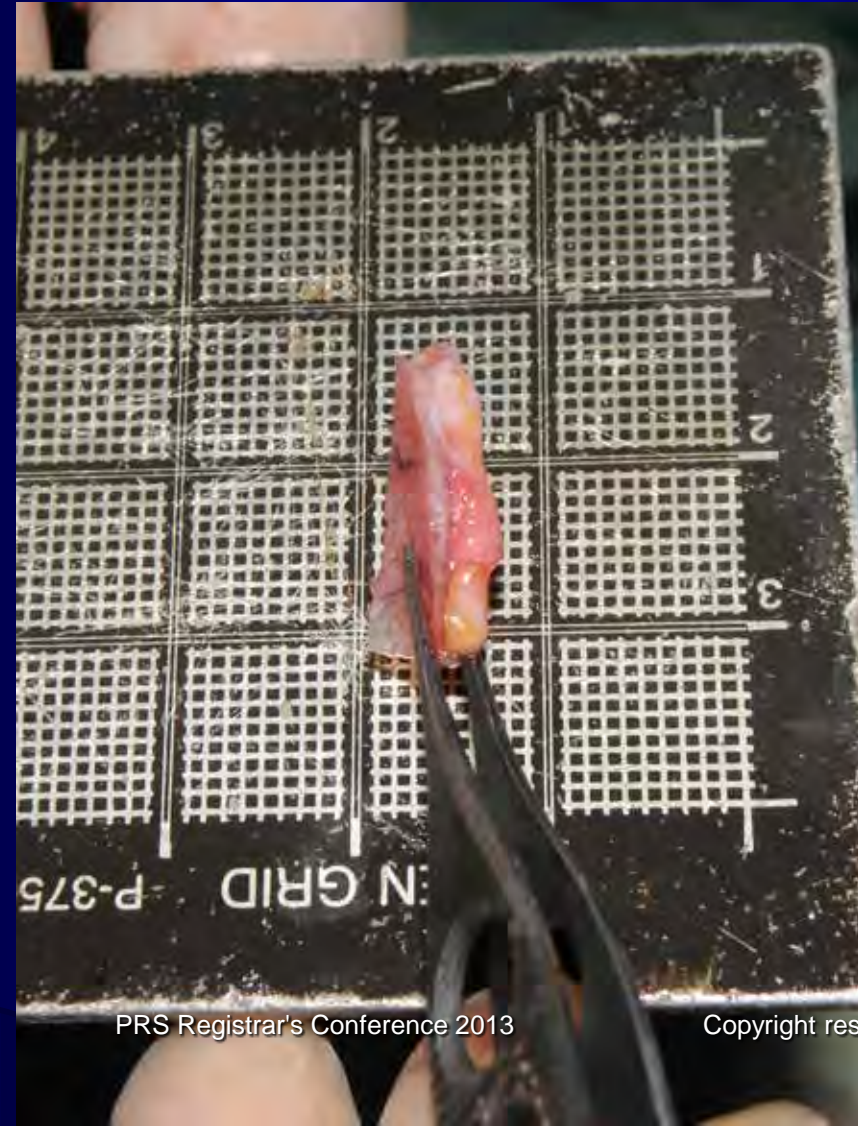
Mastoid Fascia



Cartilage+Fascia



Cartilage+Fascia



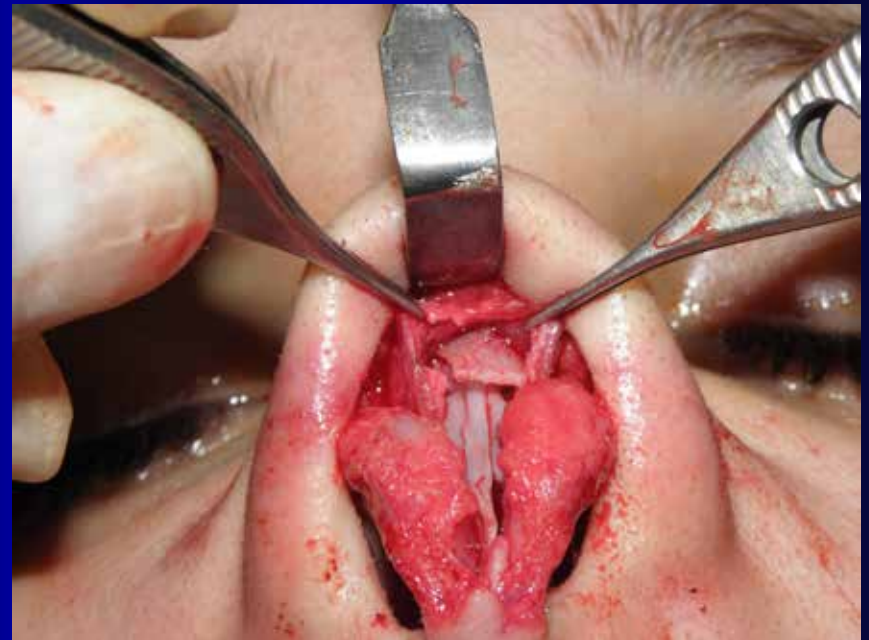
Fat Graft



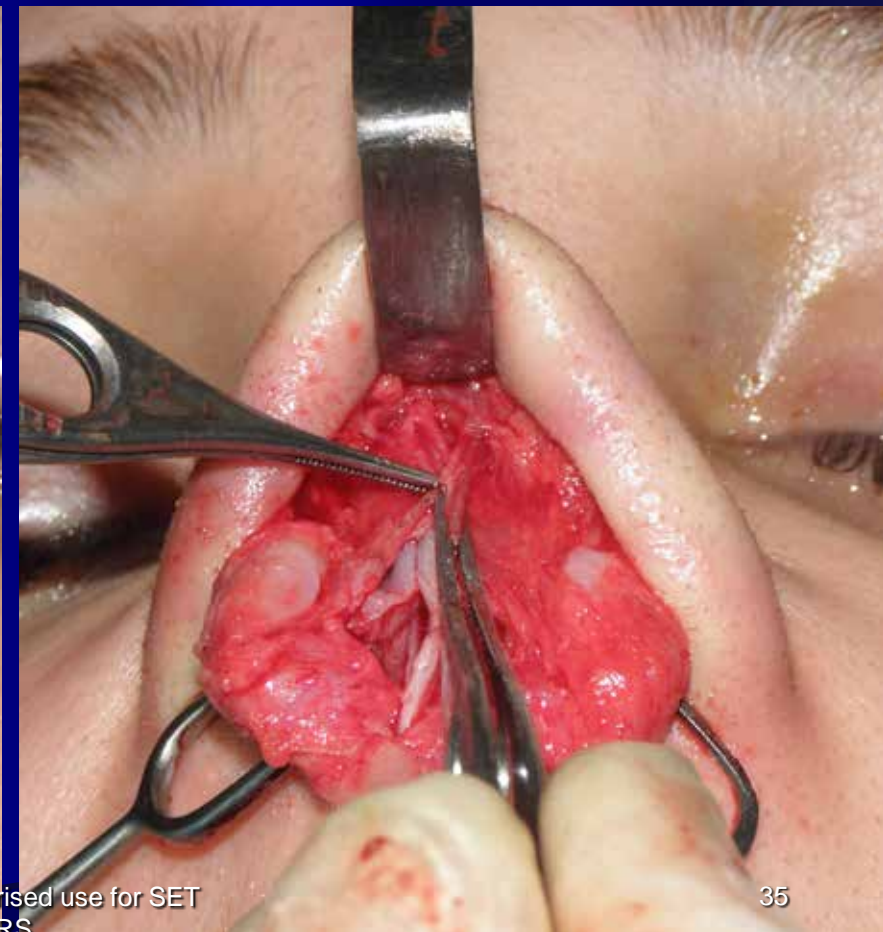
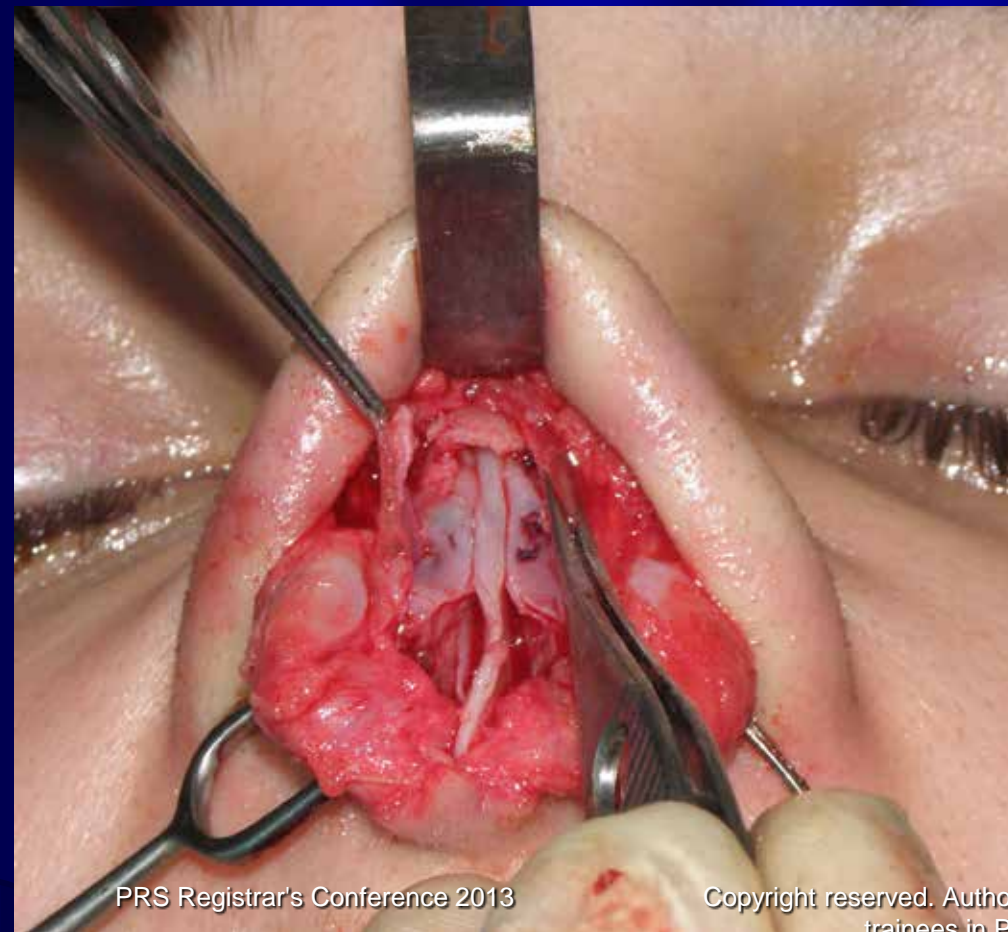
Double Layer Graft (the graft on top is larger)



Placement of Radix Graft



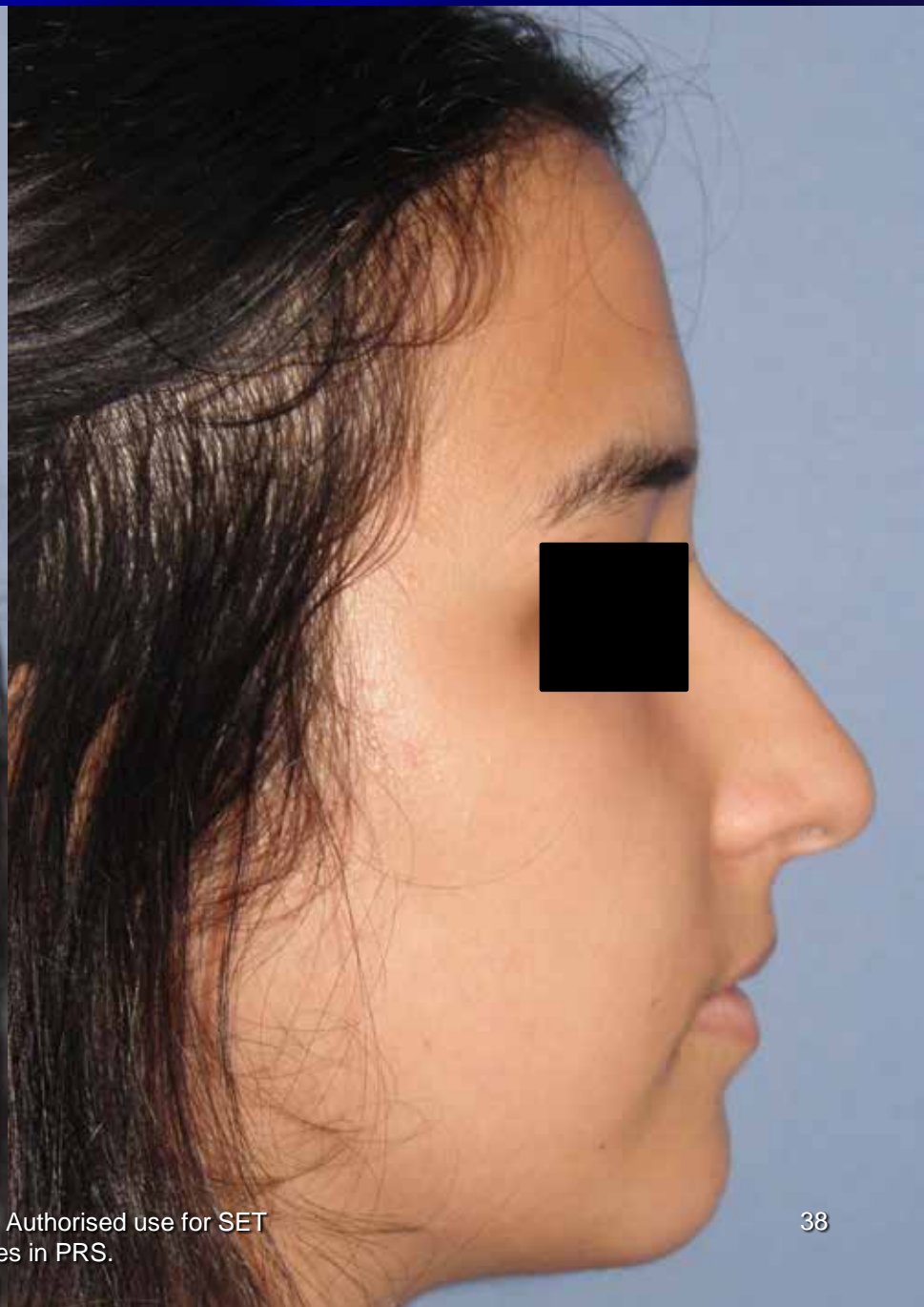
Placement of Radix Graft Under the Periosteum



Stabilization of Radix Graft with Suturing of Perichondro-Periosteal Flaps

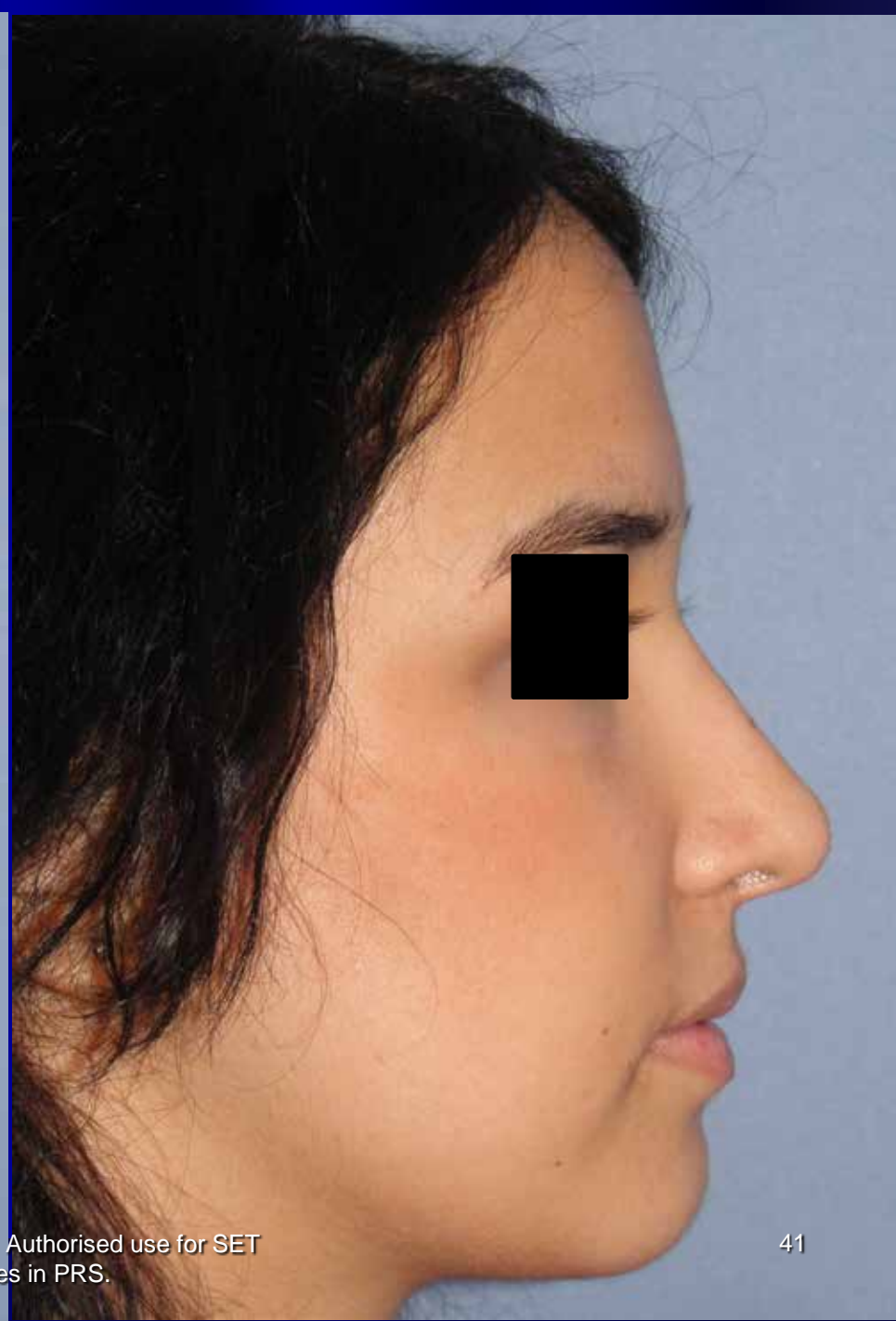


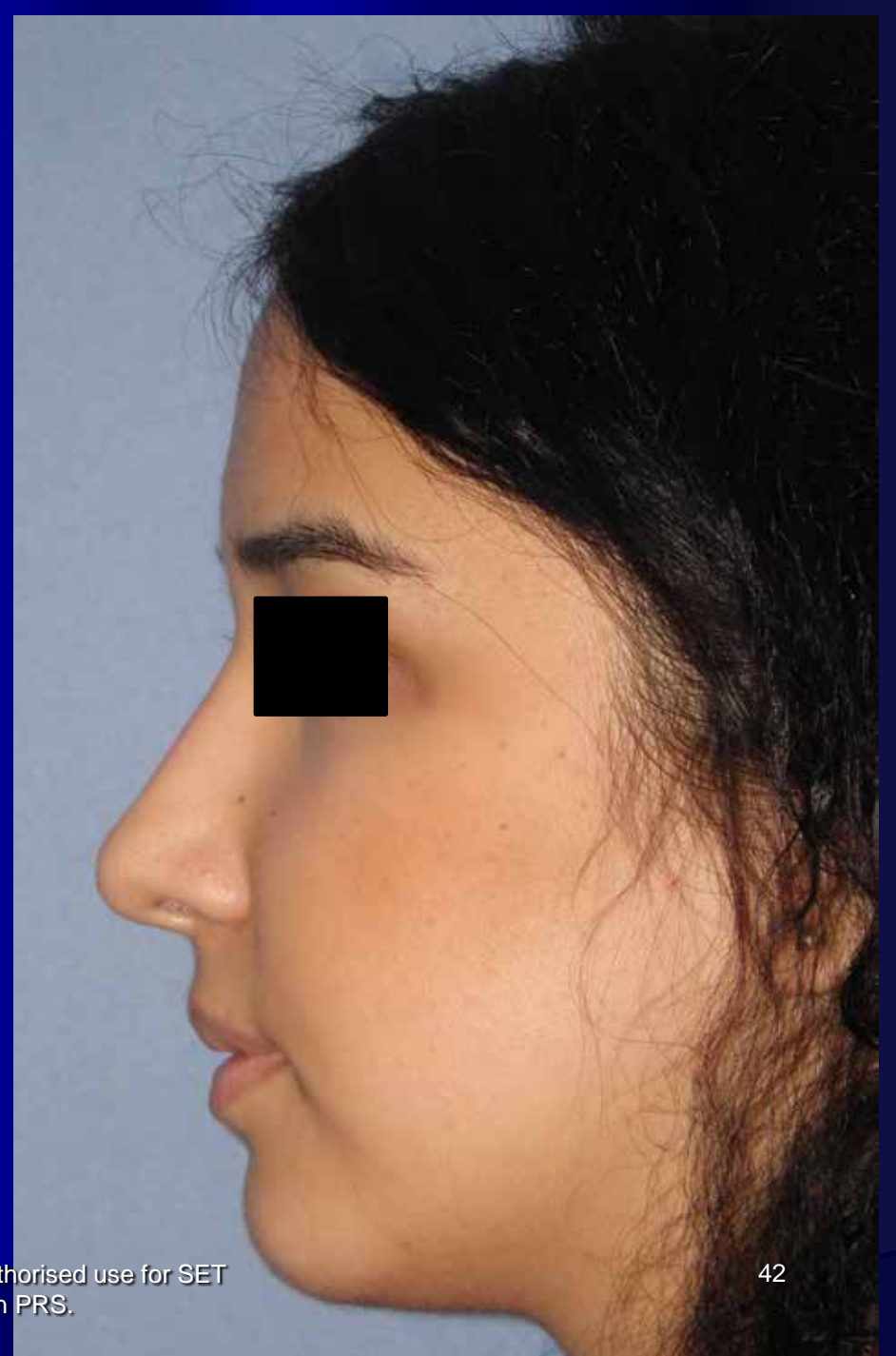
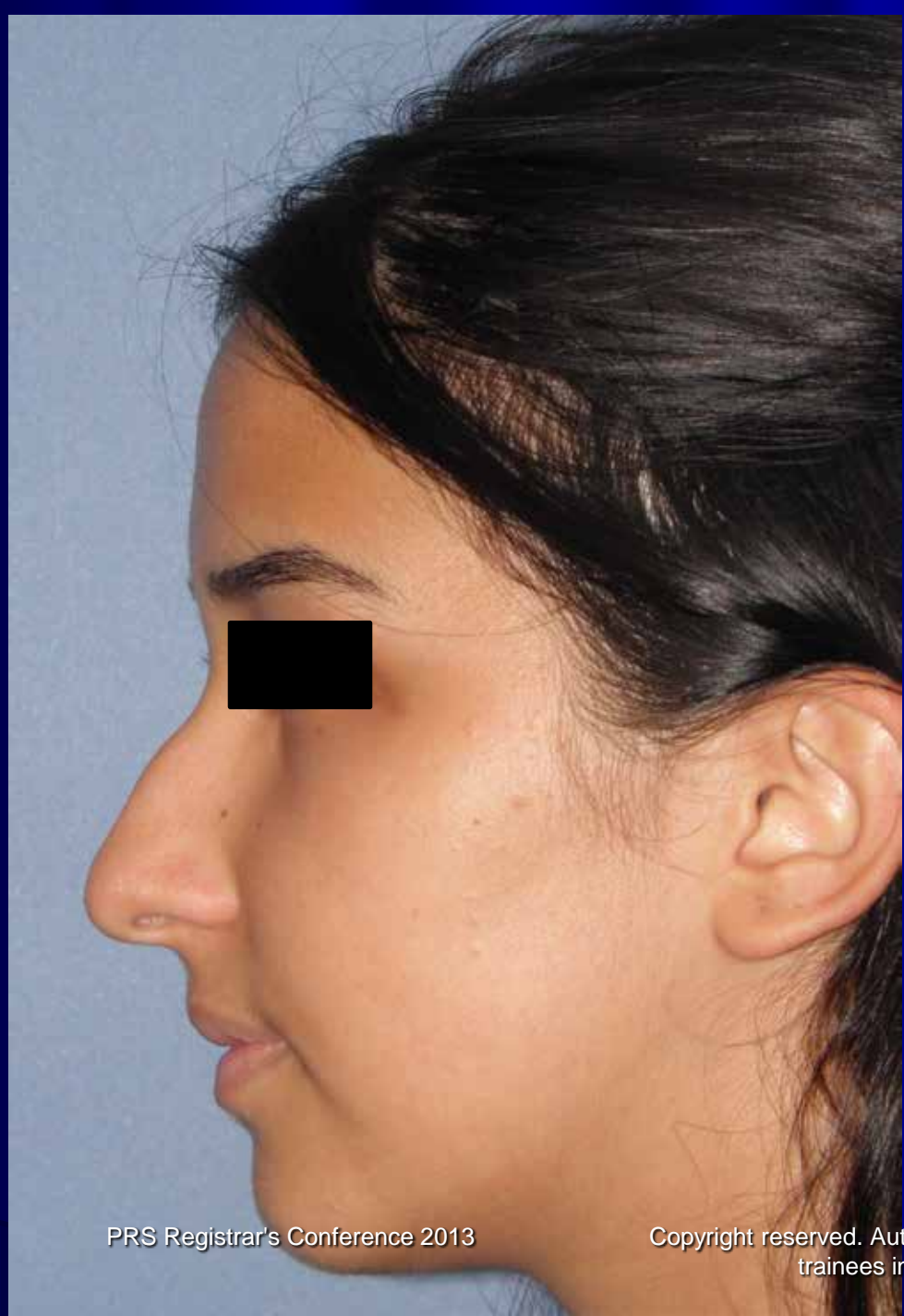
Radix graft for less dorsum reduction

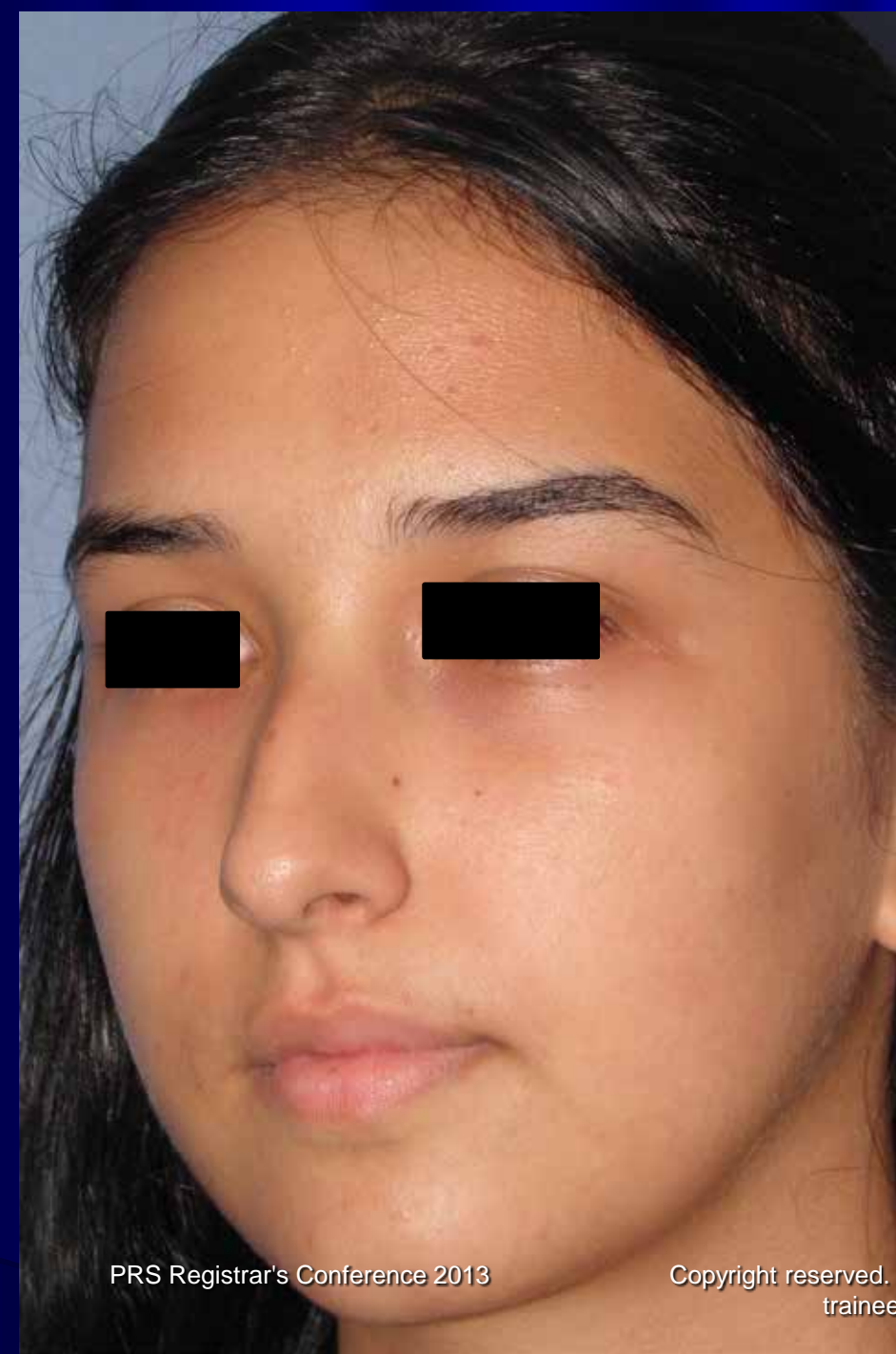




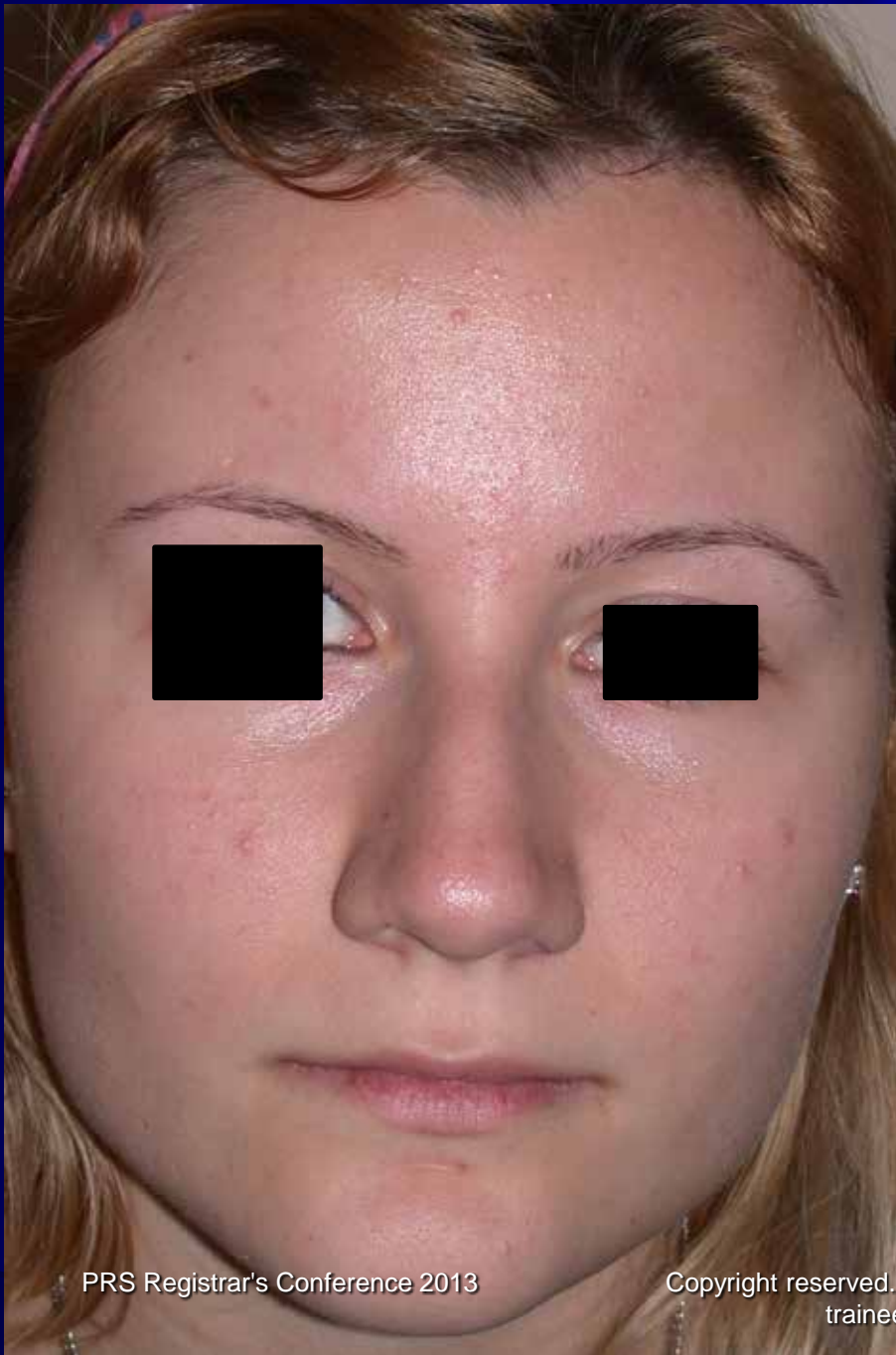


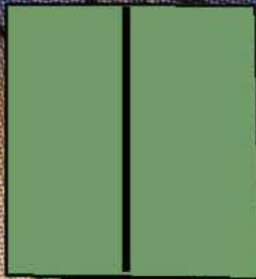












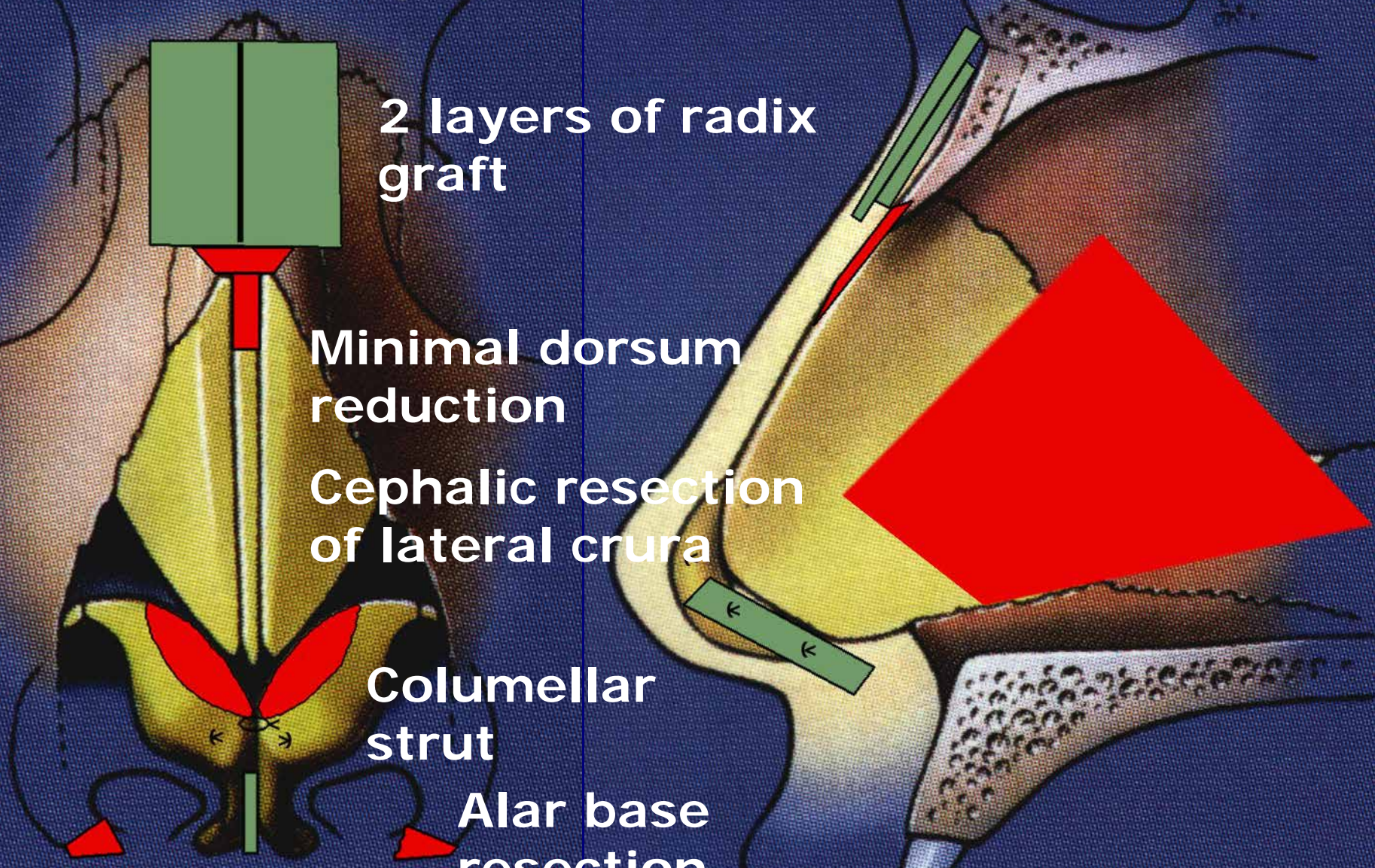
2 layers of radix graft

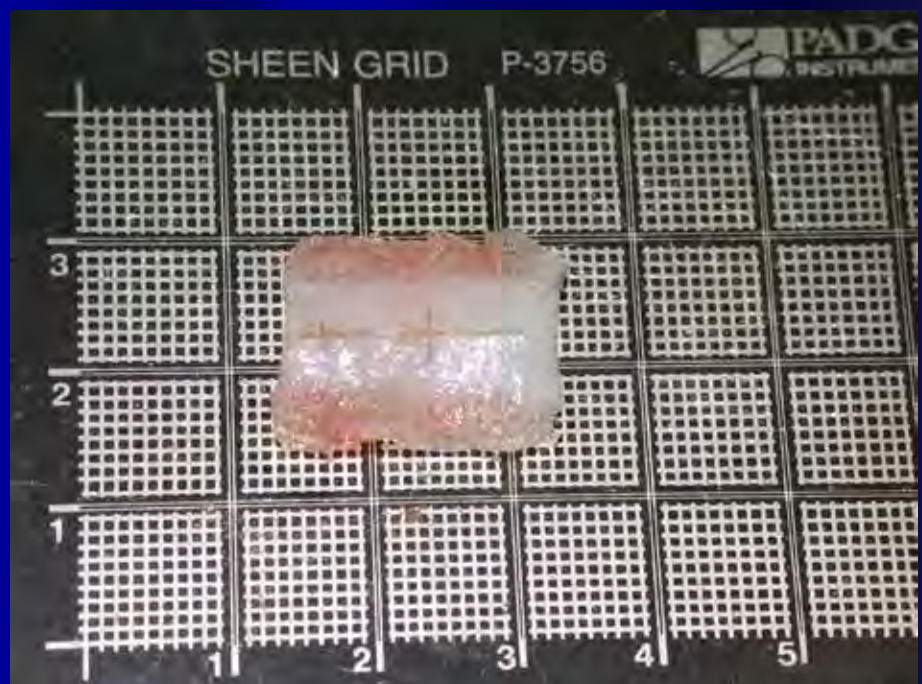
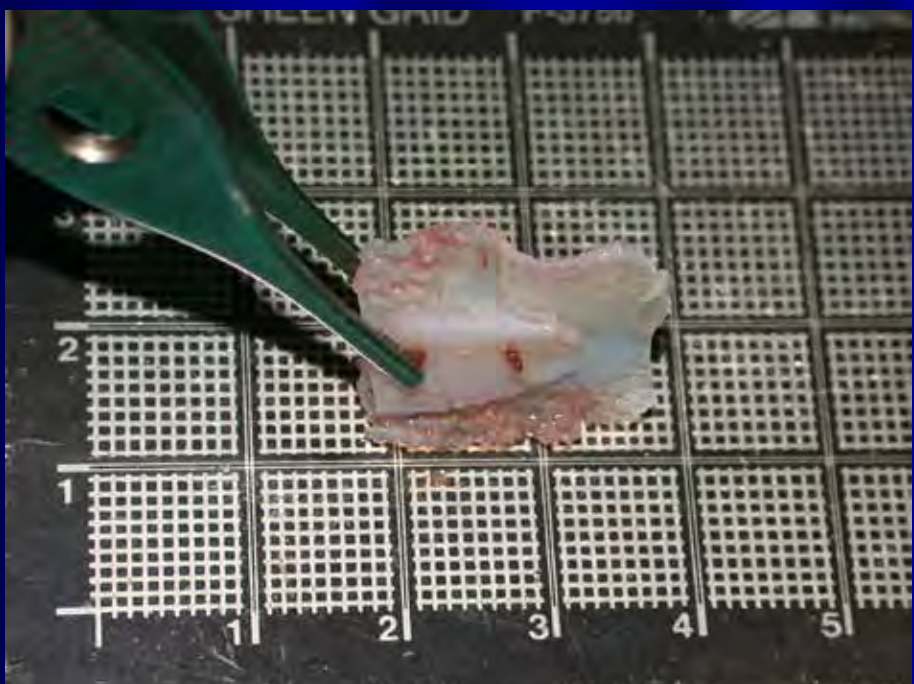
Minimal dorsum reduction

Cephalic resection of lateral crura

Columellar strut

Alar base resection

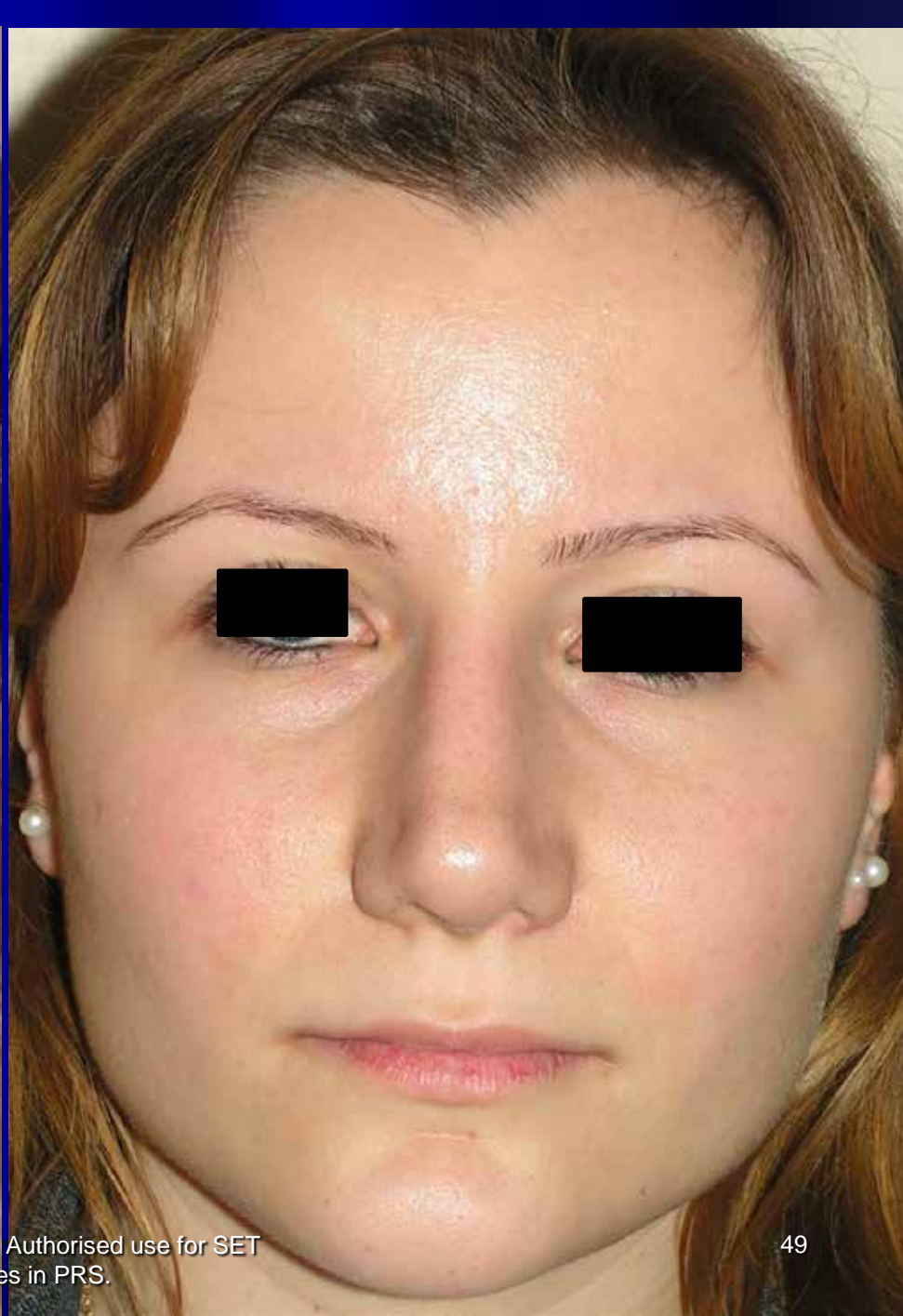








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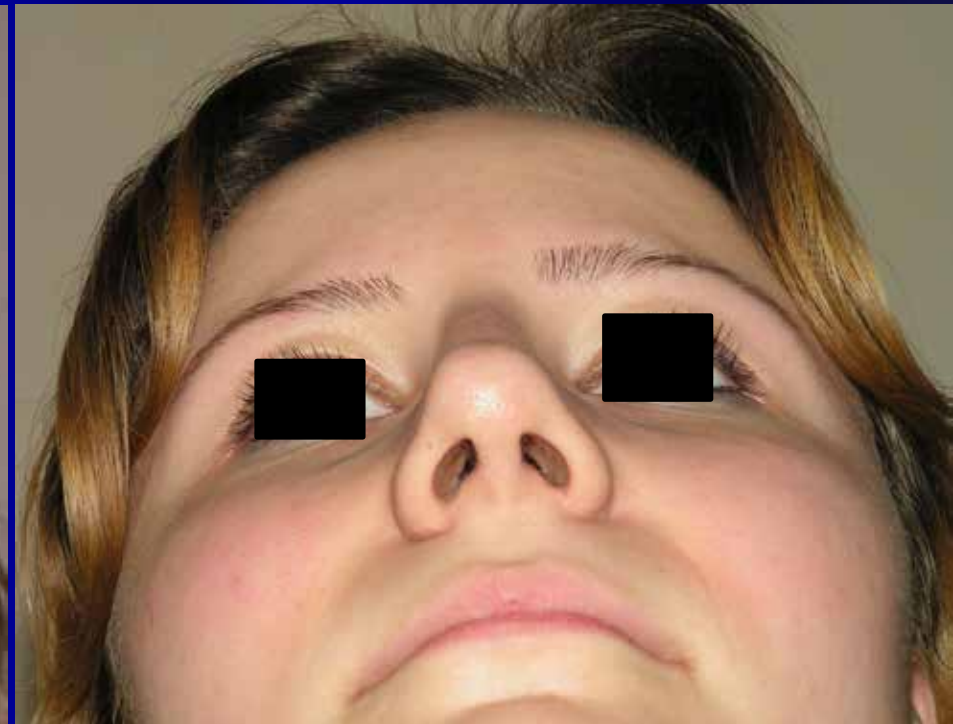
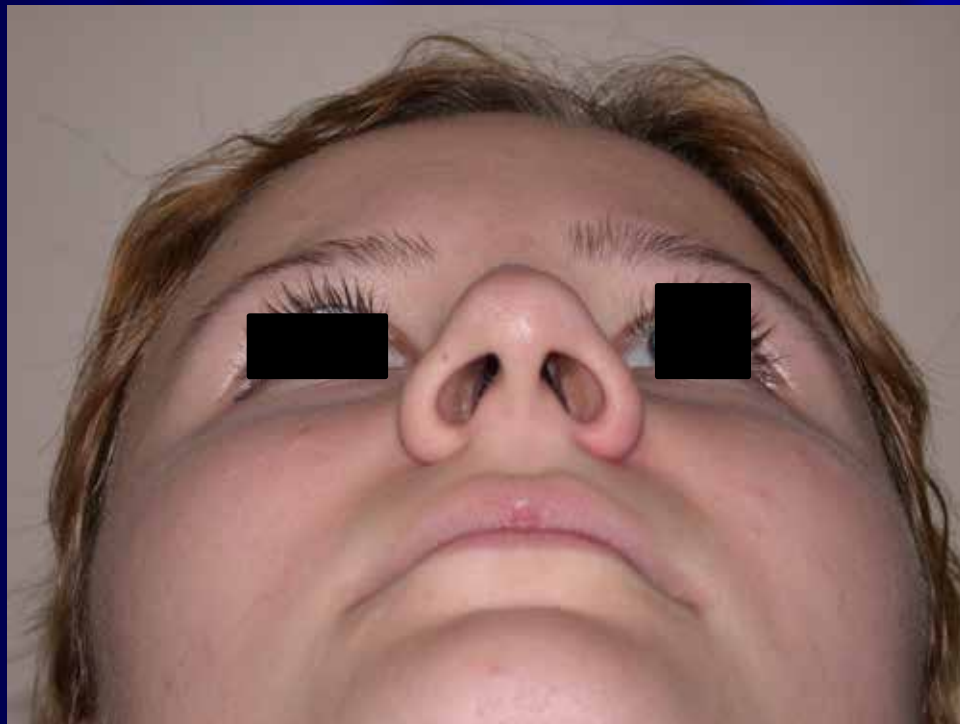


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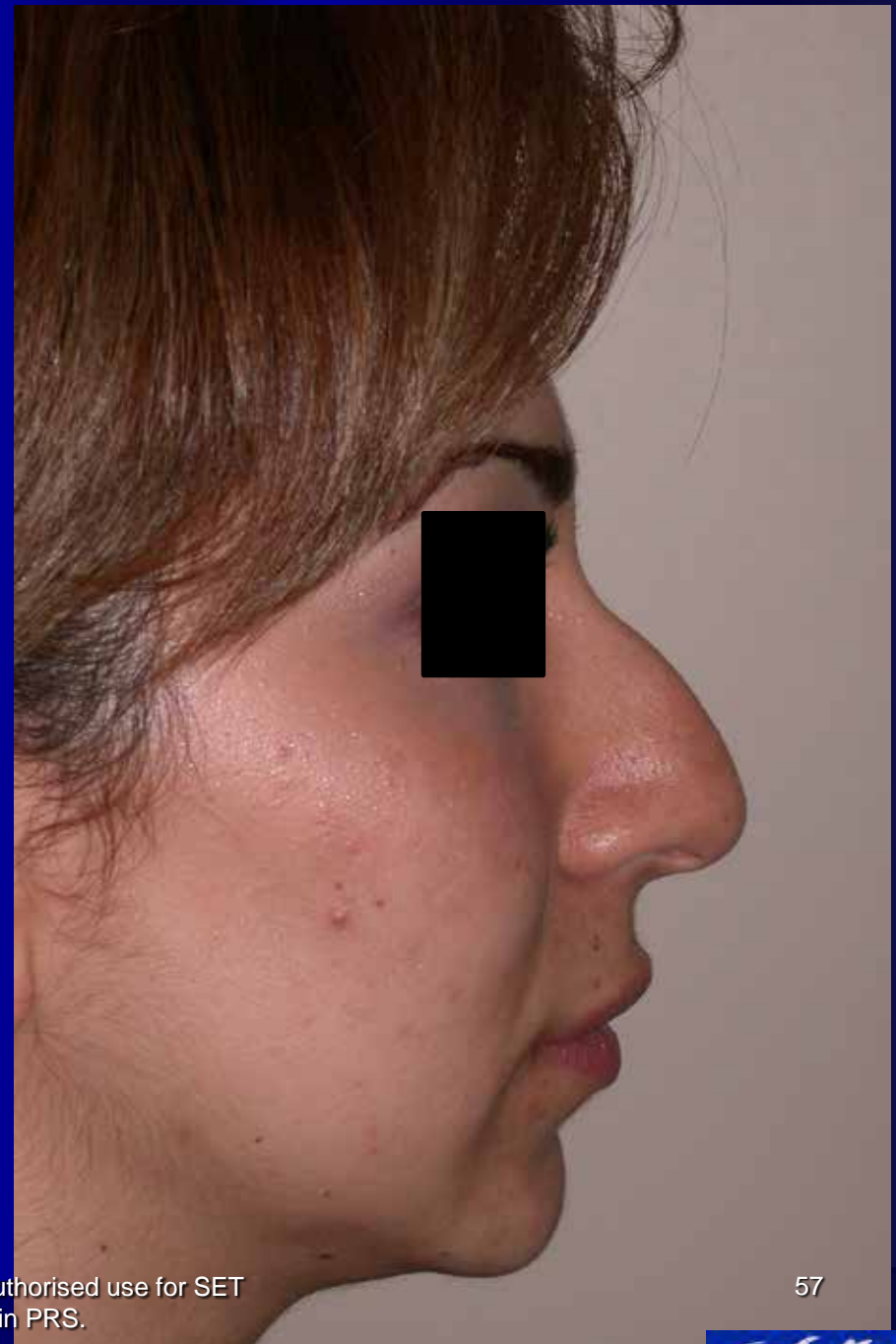
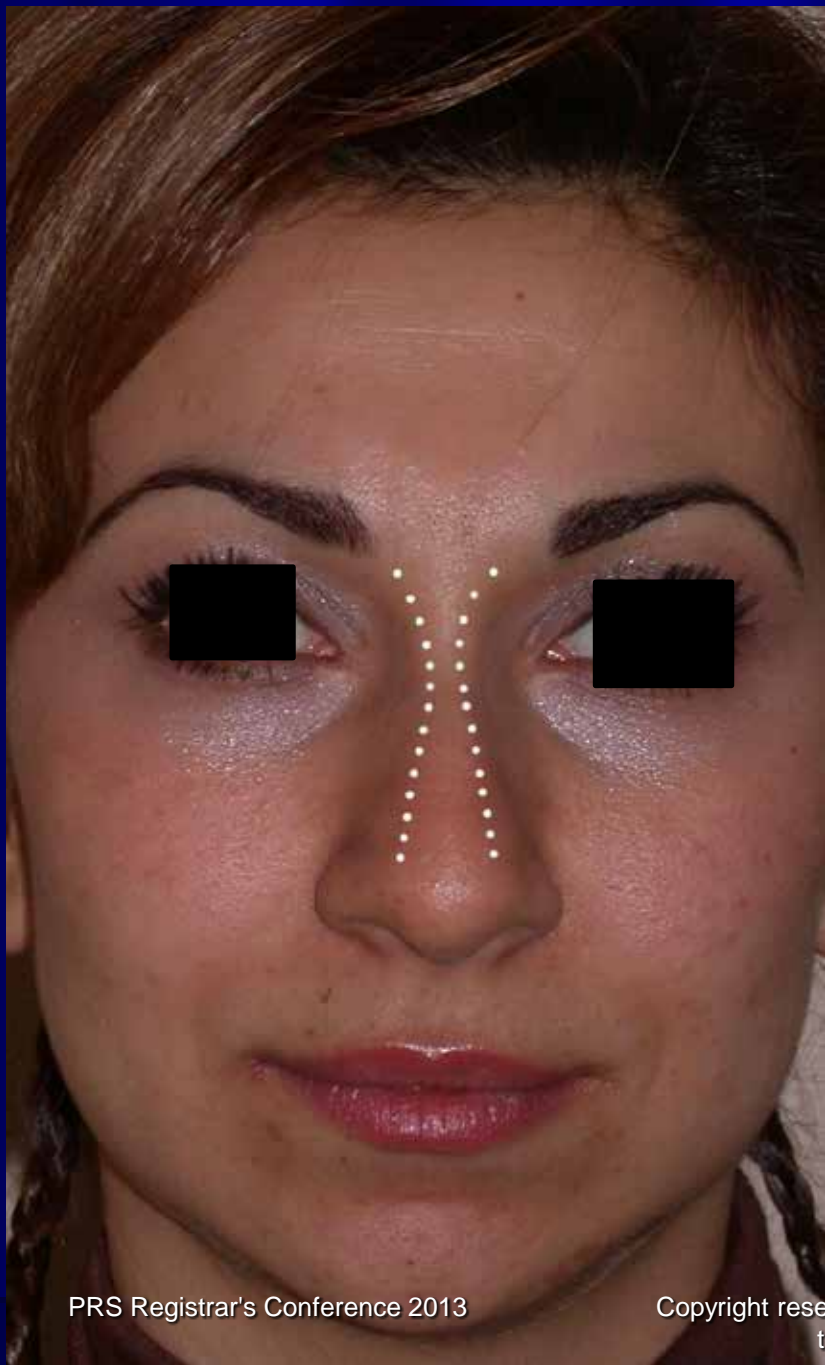






WIDENING AND AUGMENTING OF RADIX





Radix augmentation

Onlay grafts to side walls

2 mm dorsal reduction

Low to high osteotomies

Autospreaders

Septal extension graft

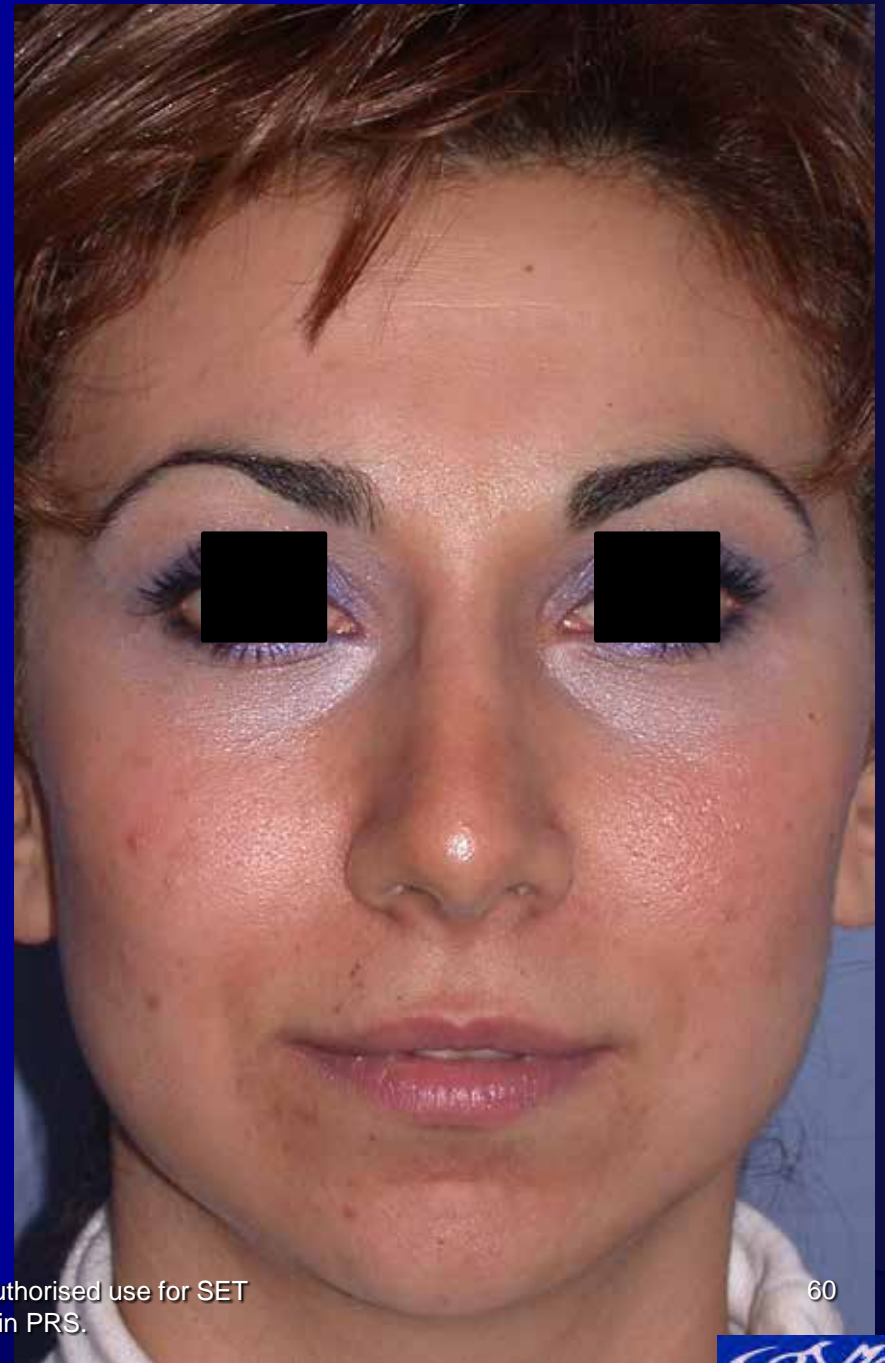
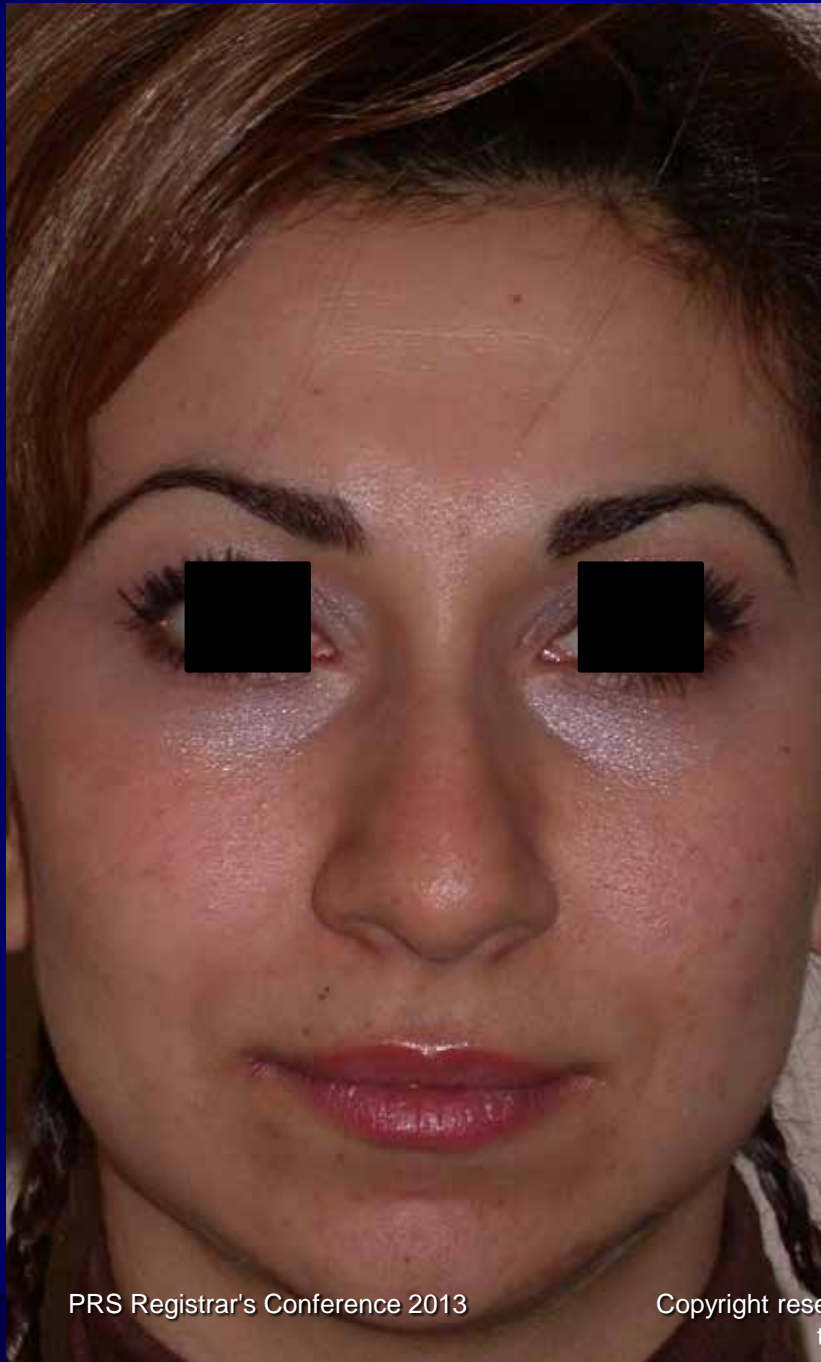
Cephalic trim

Lat. crural span. suture

Domal mattress suture

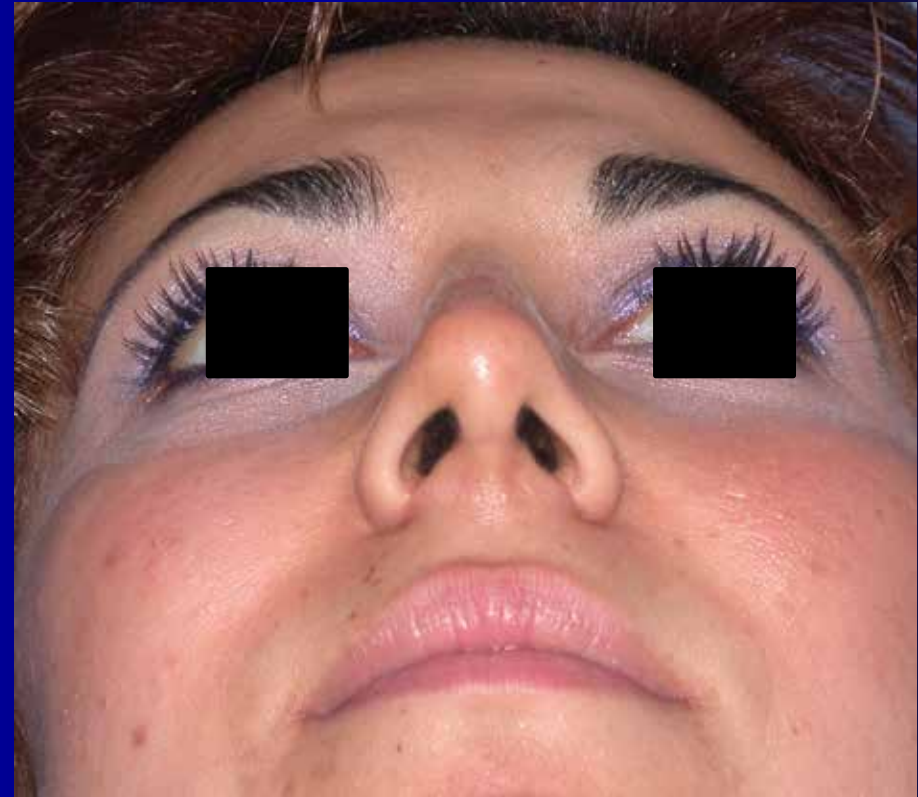
Alar base resection



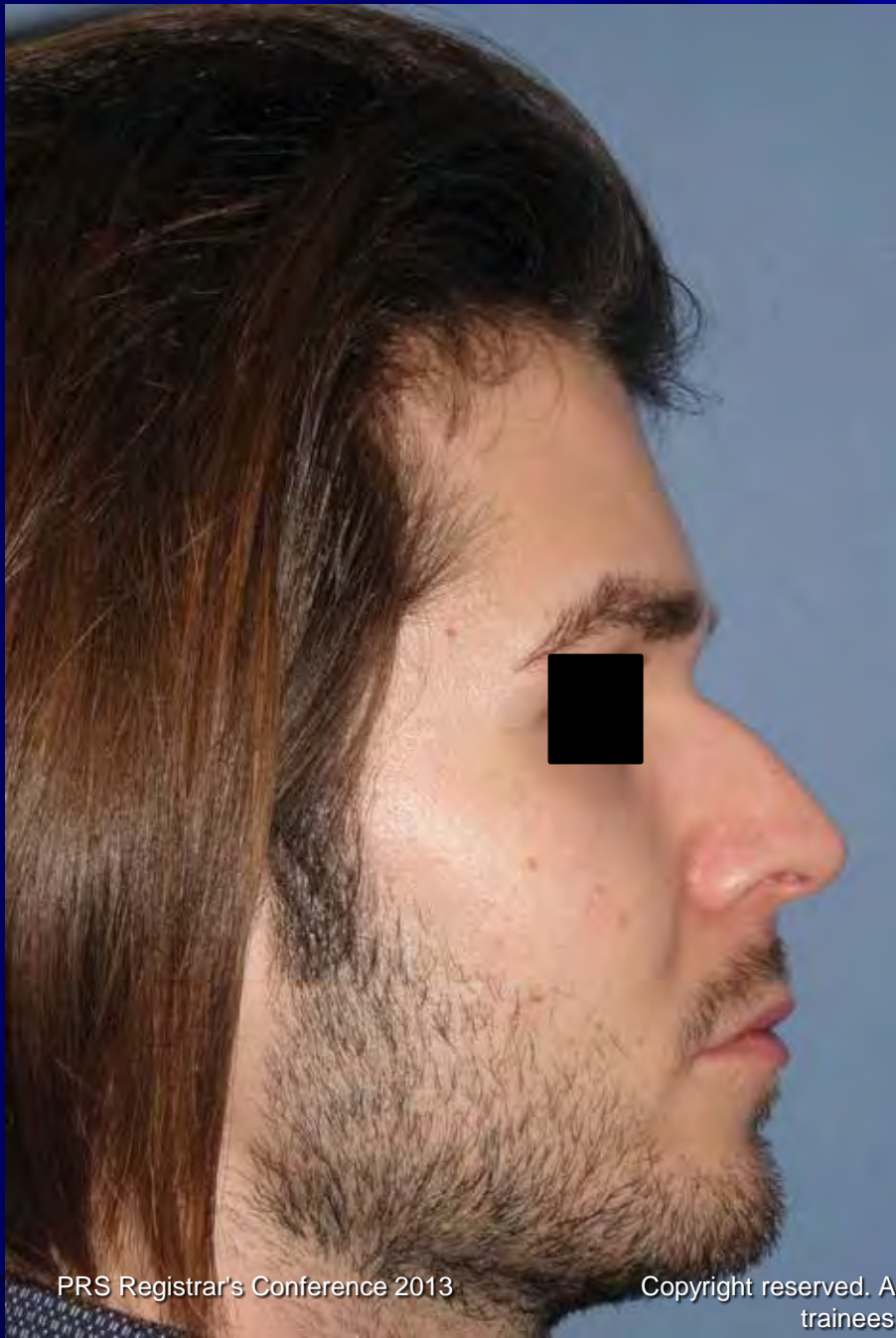


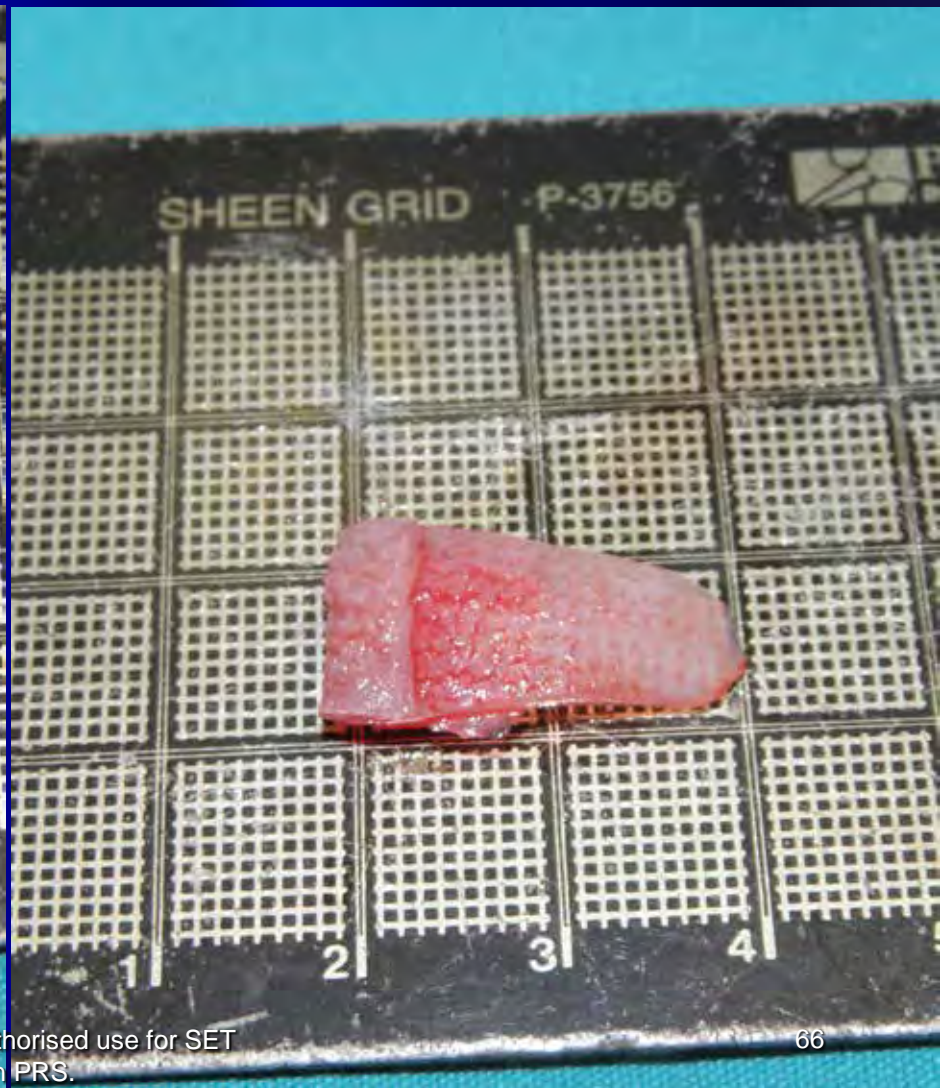
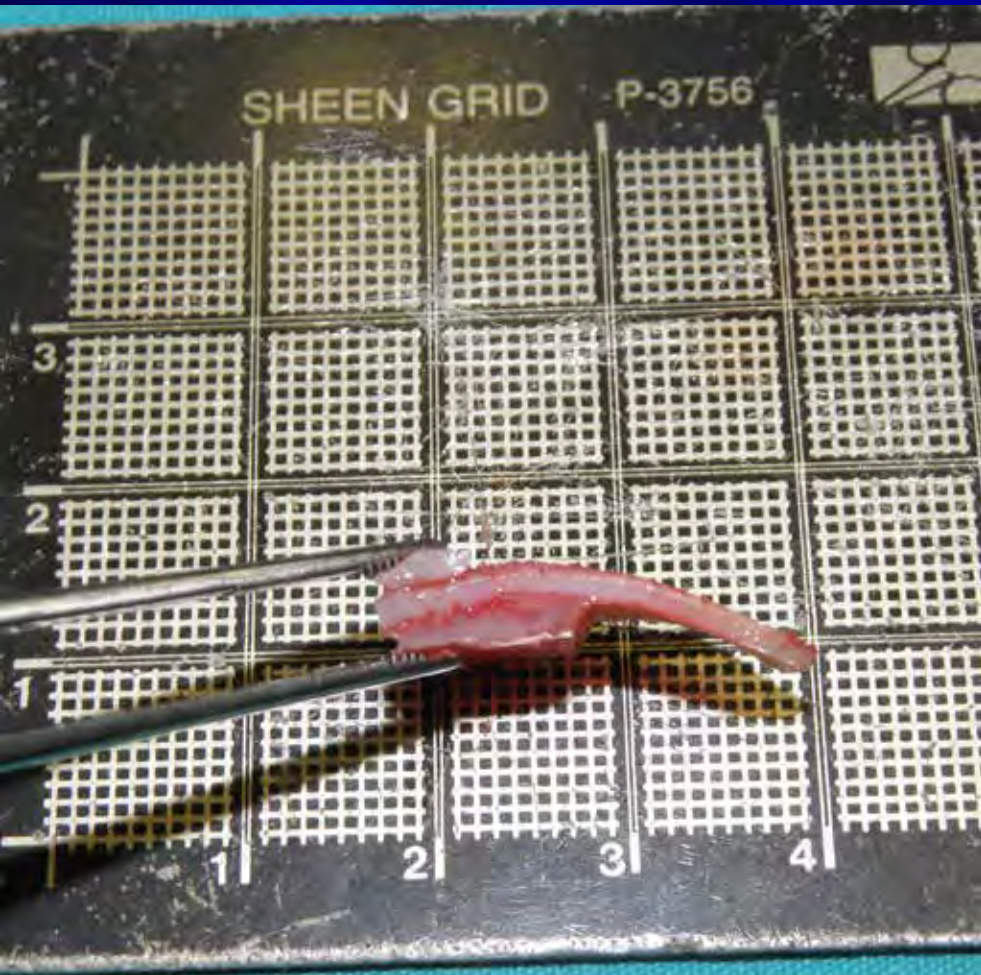






DEEP RADIX



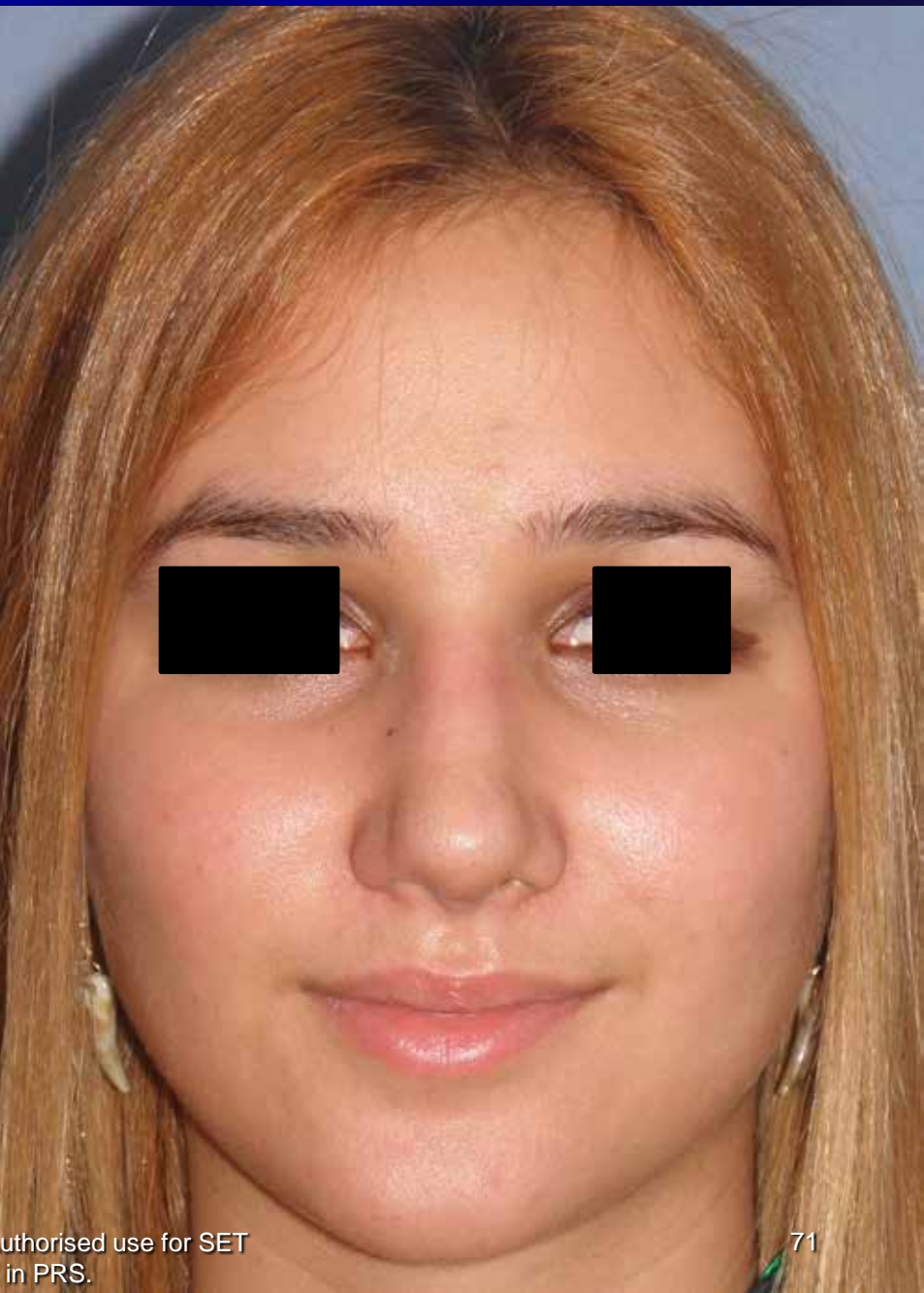
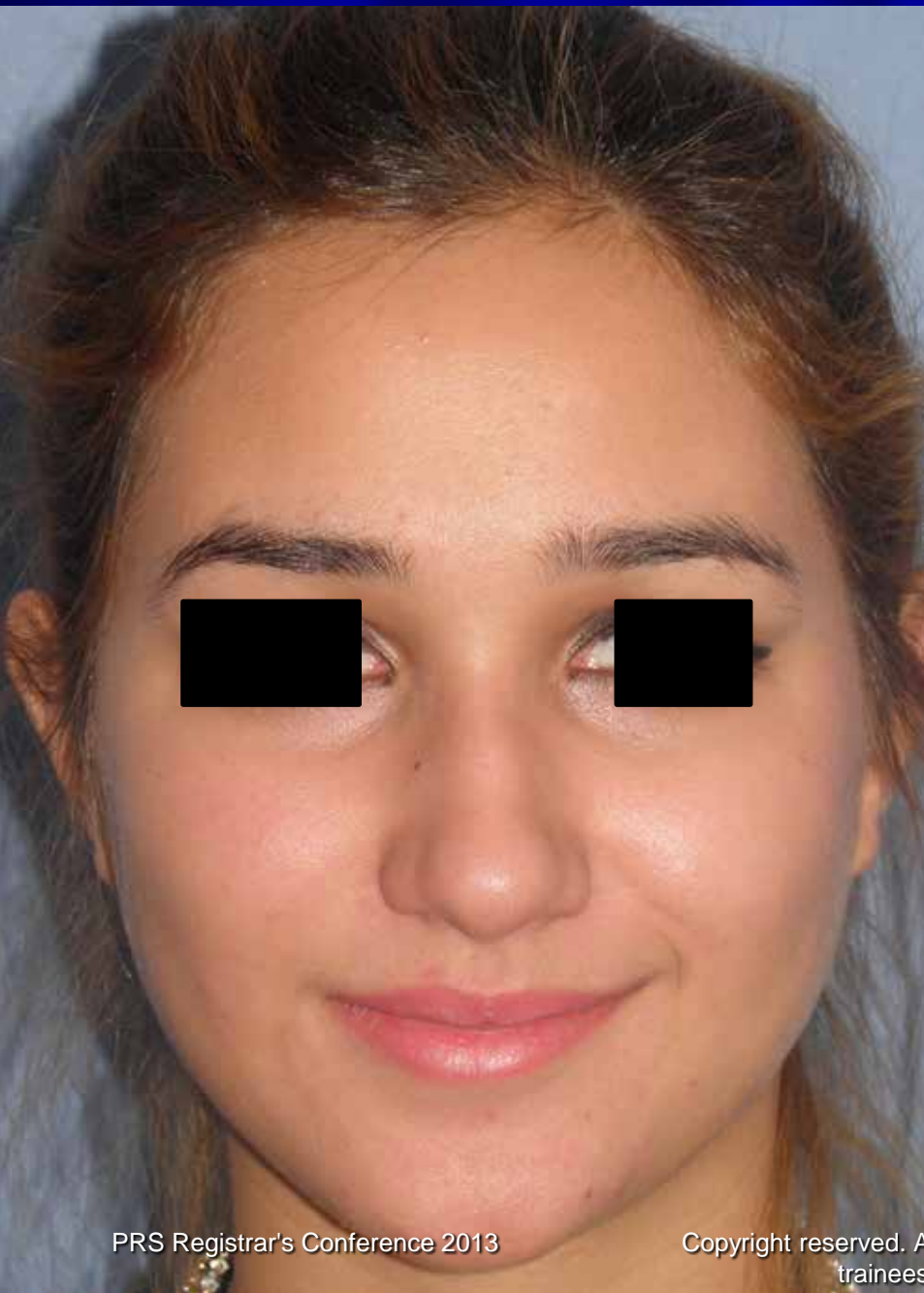




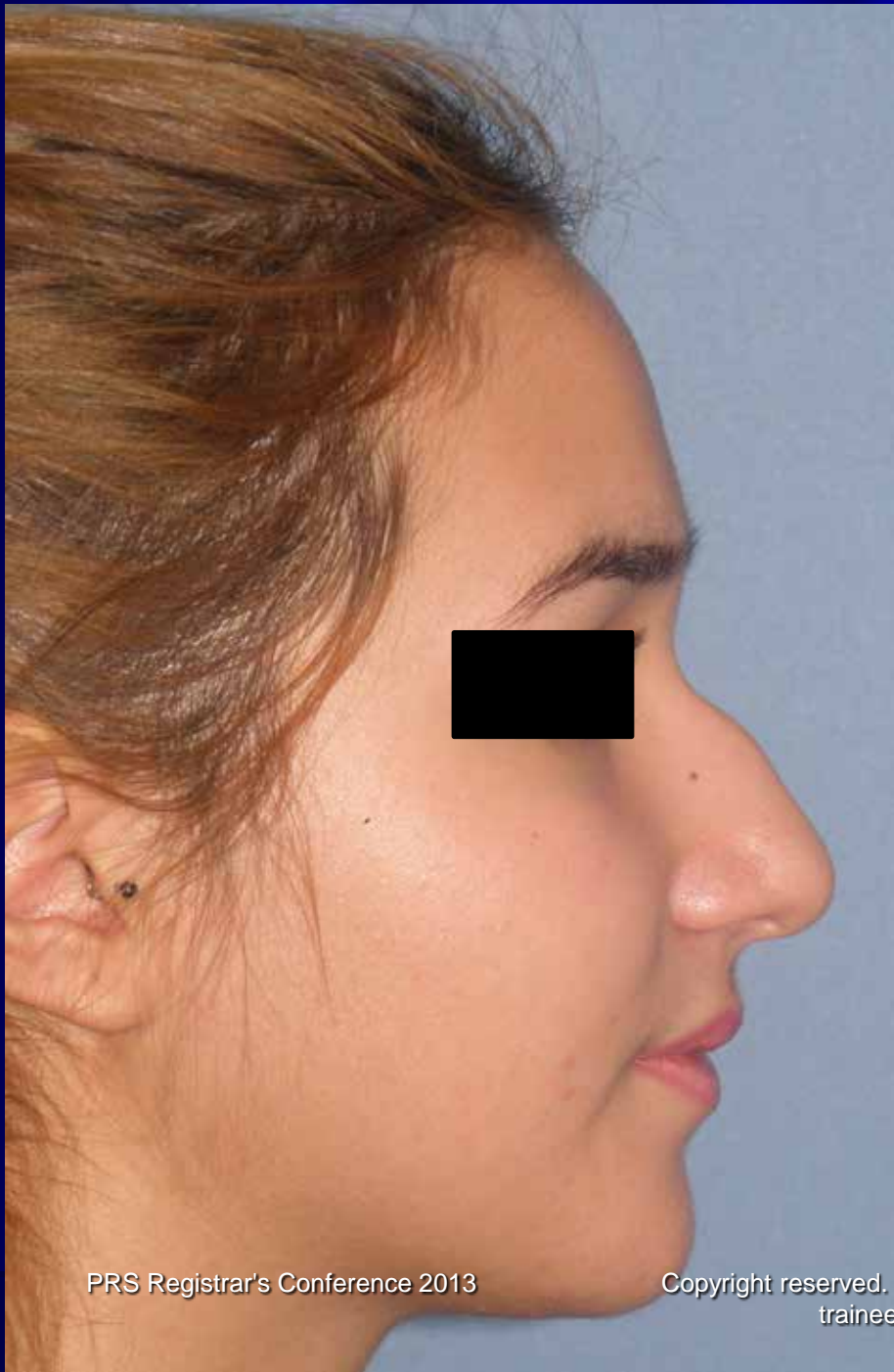


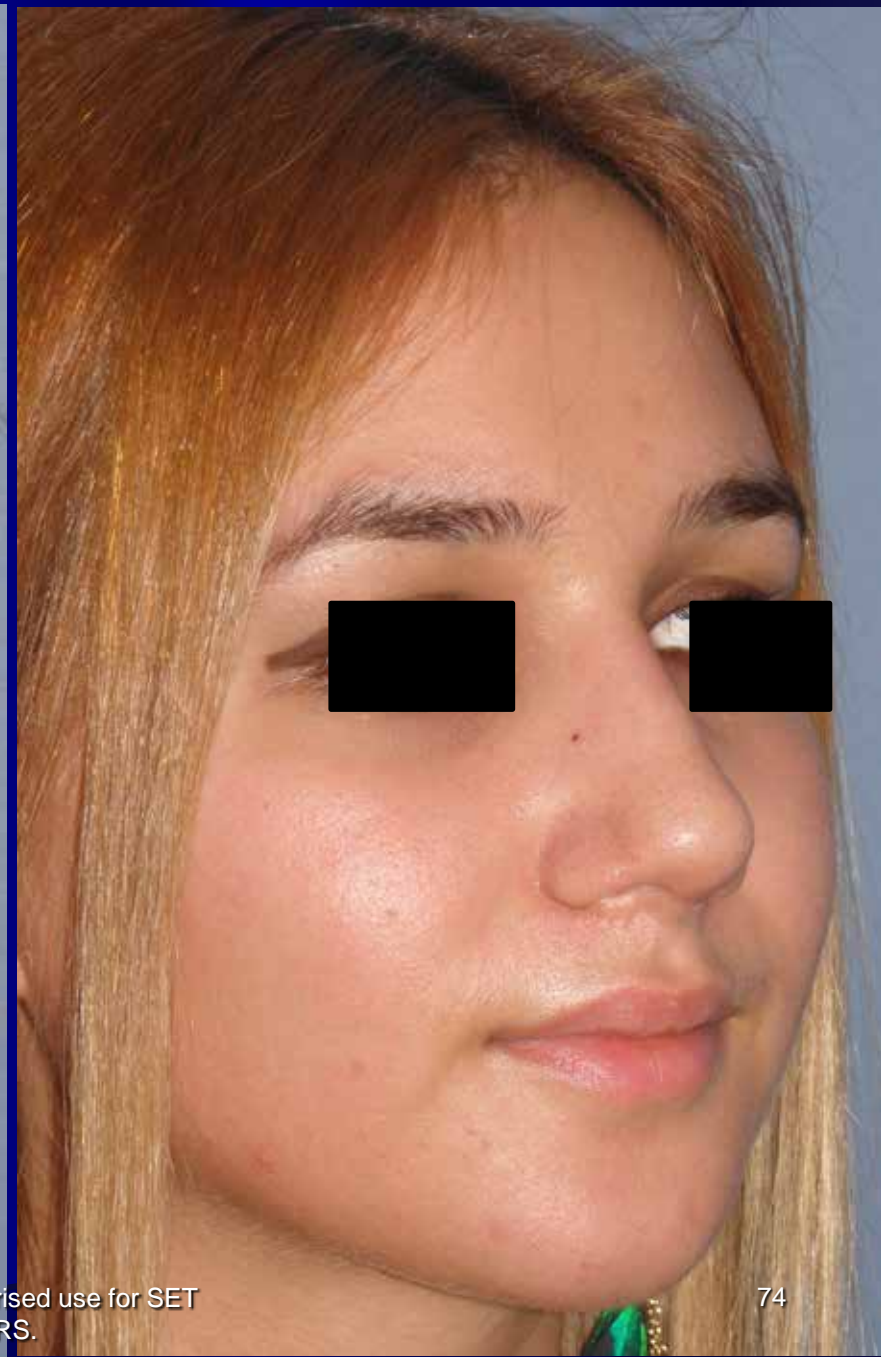
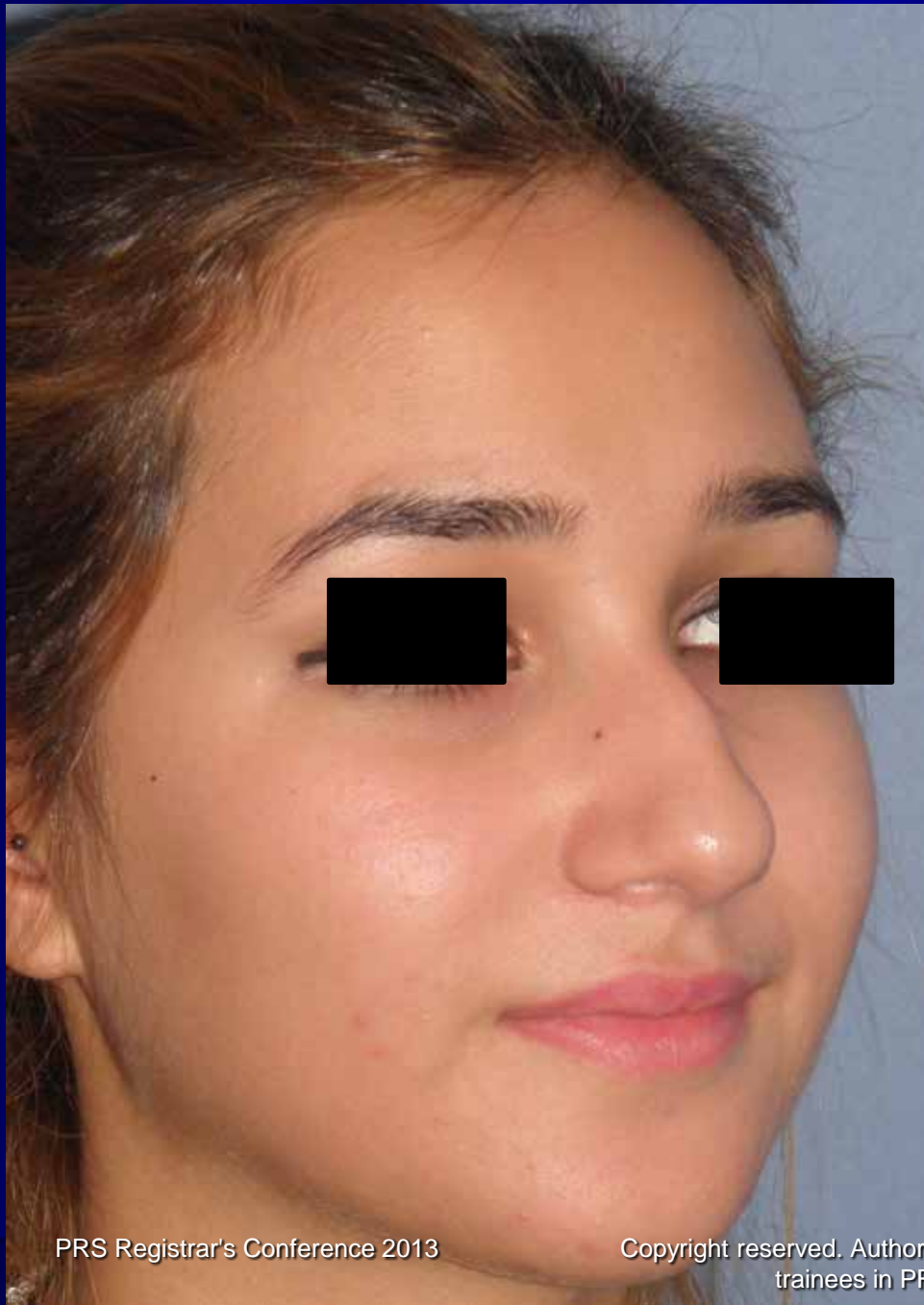




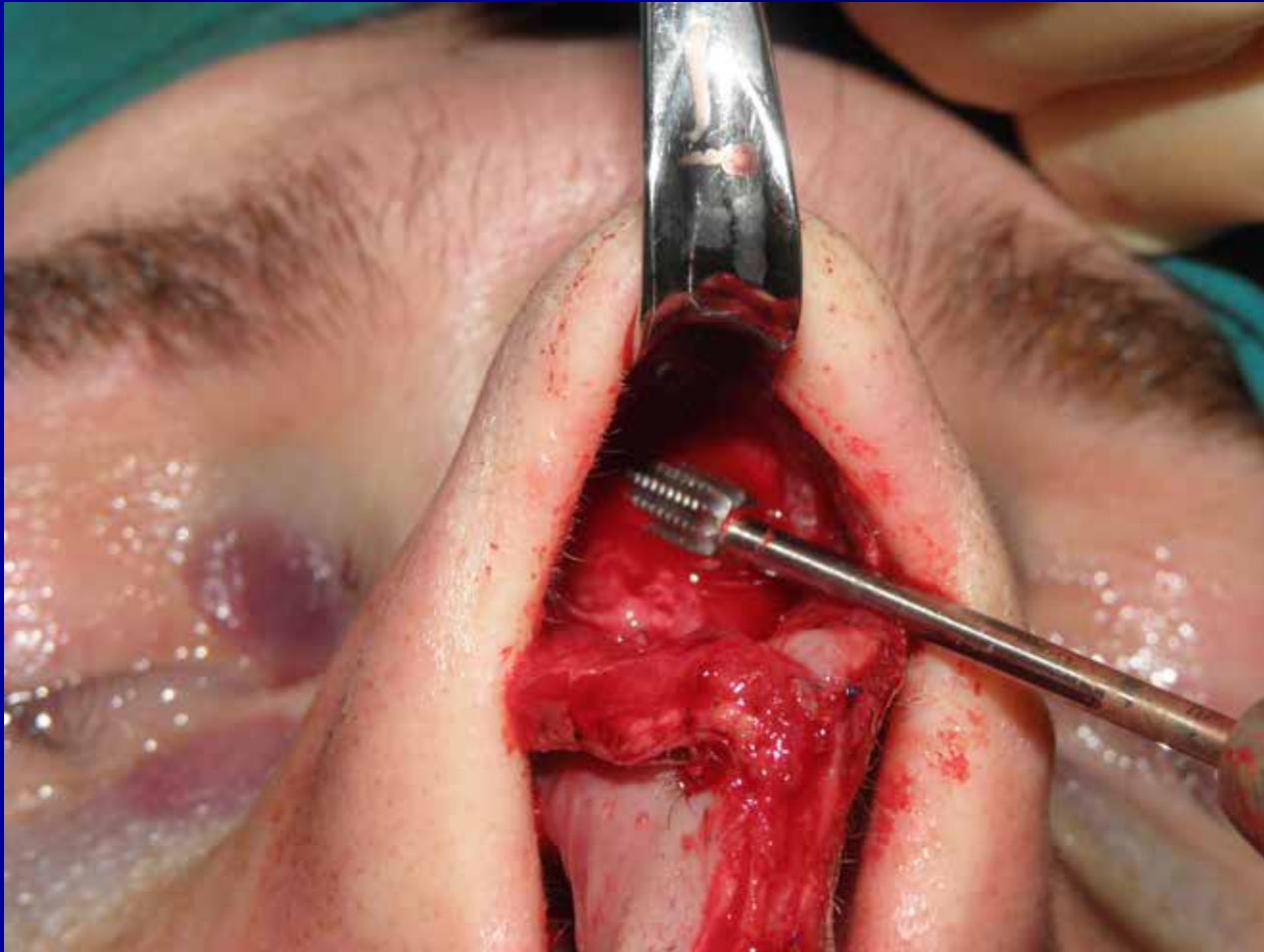


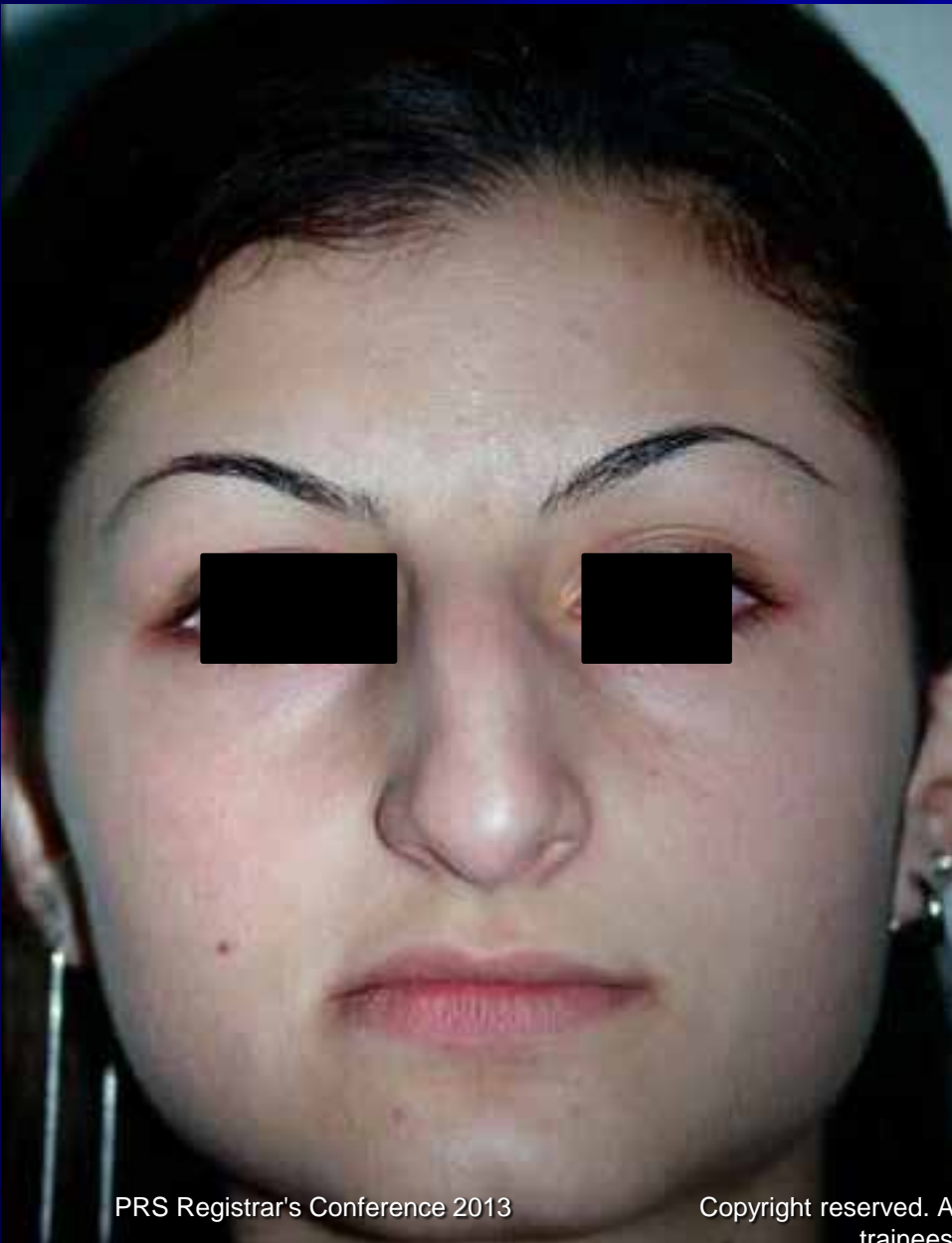






RADIX REDUCTION

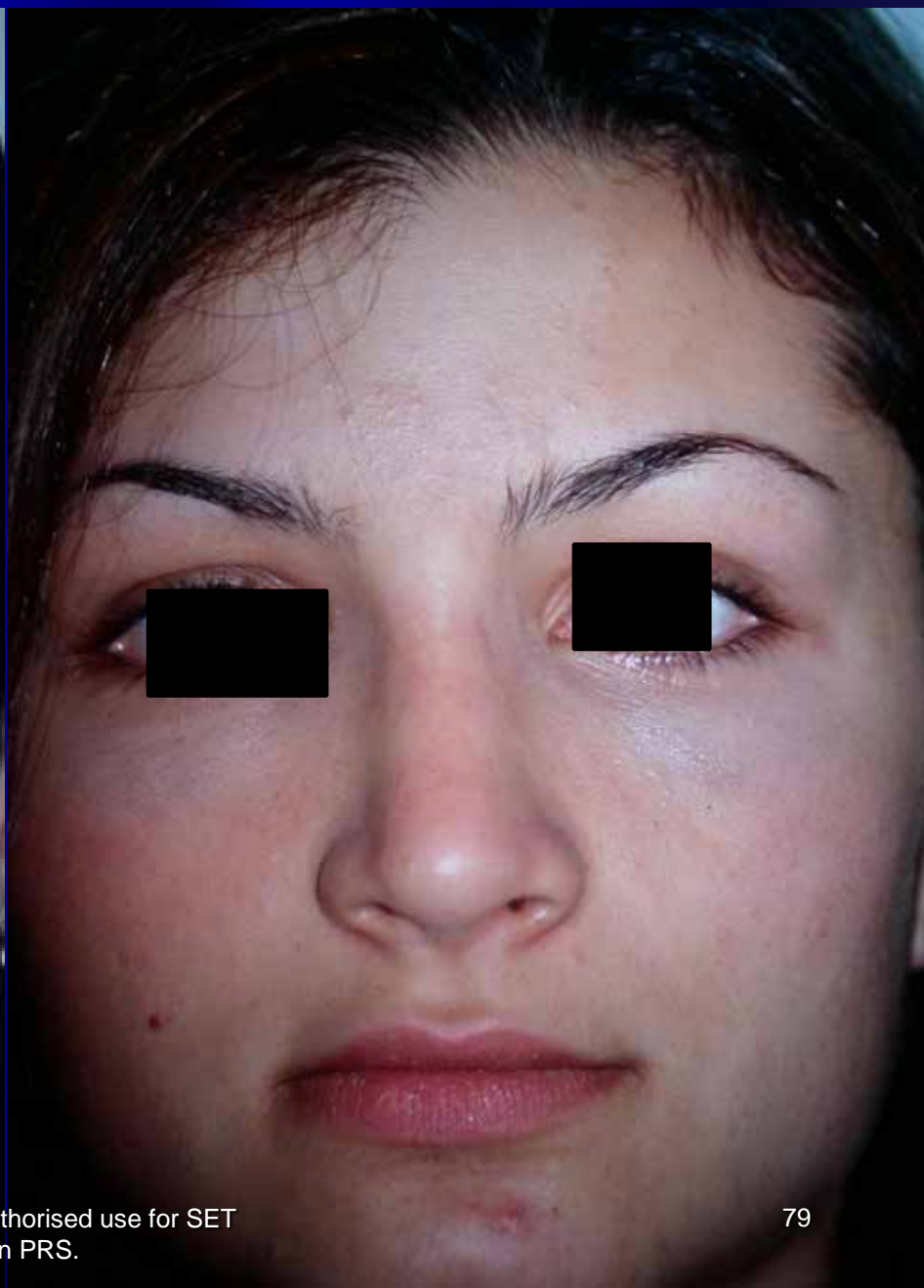
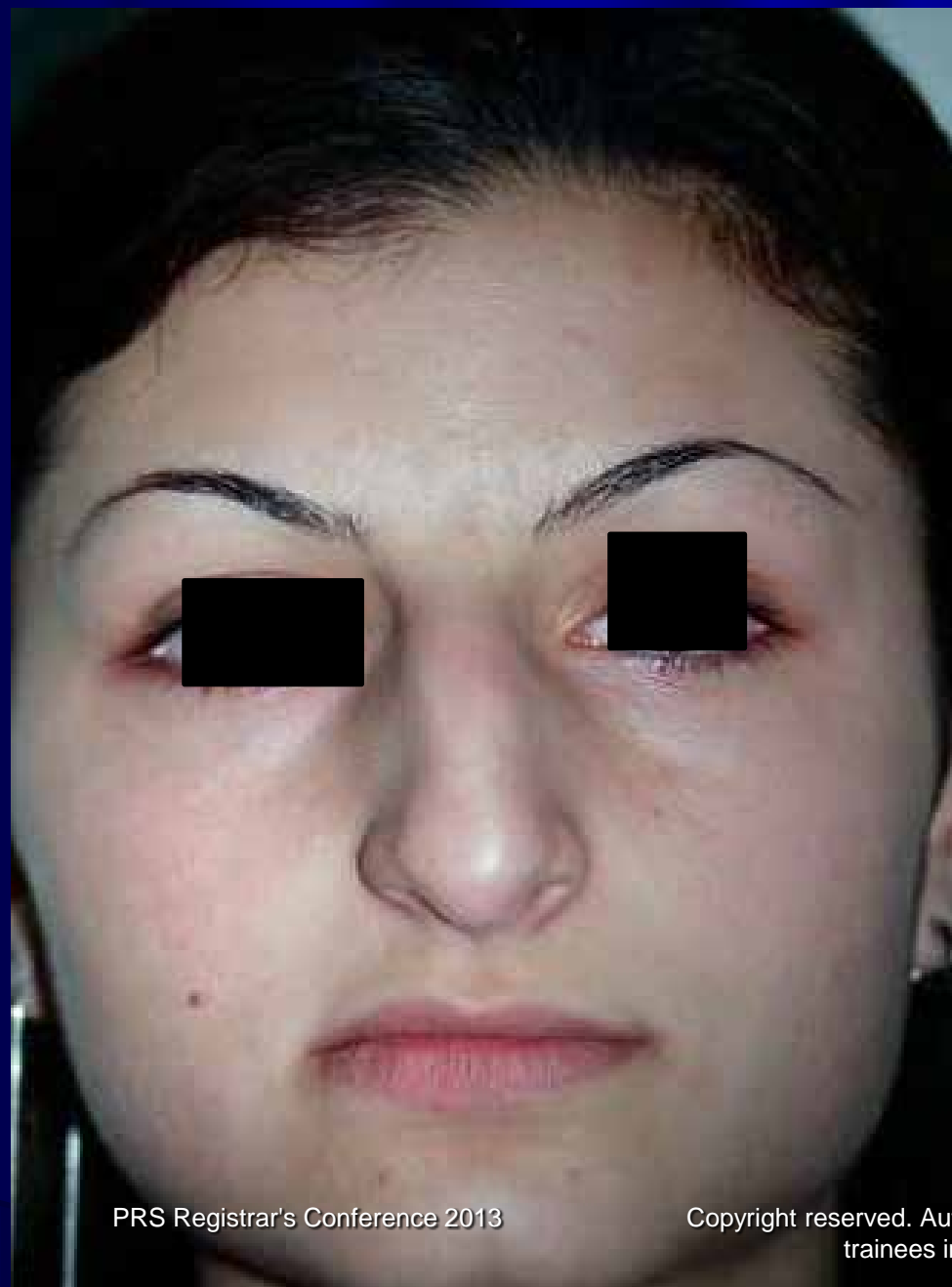




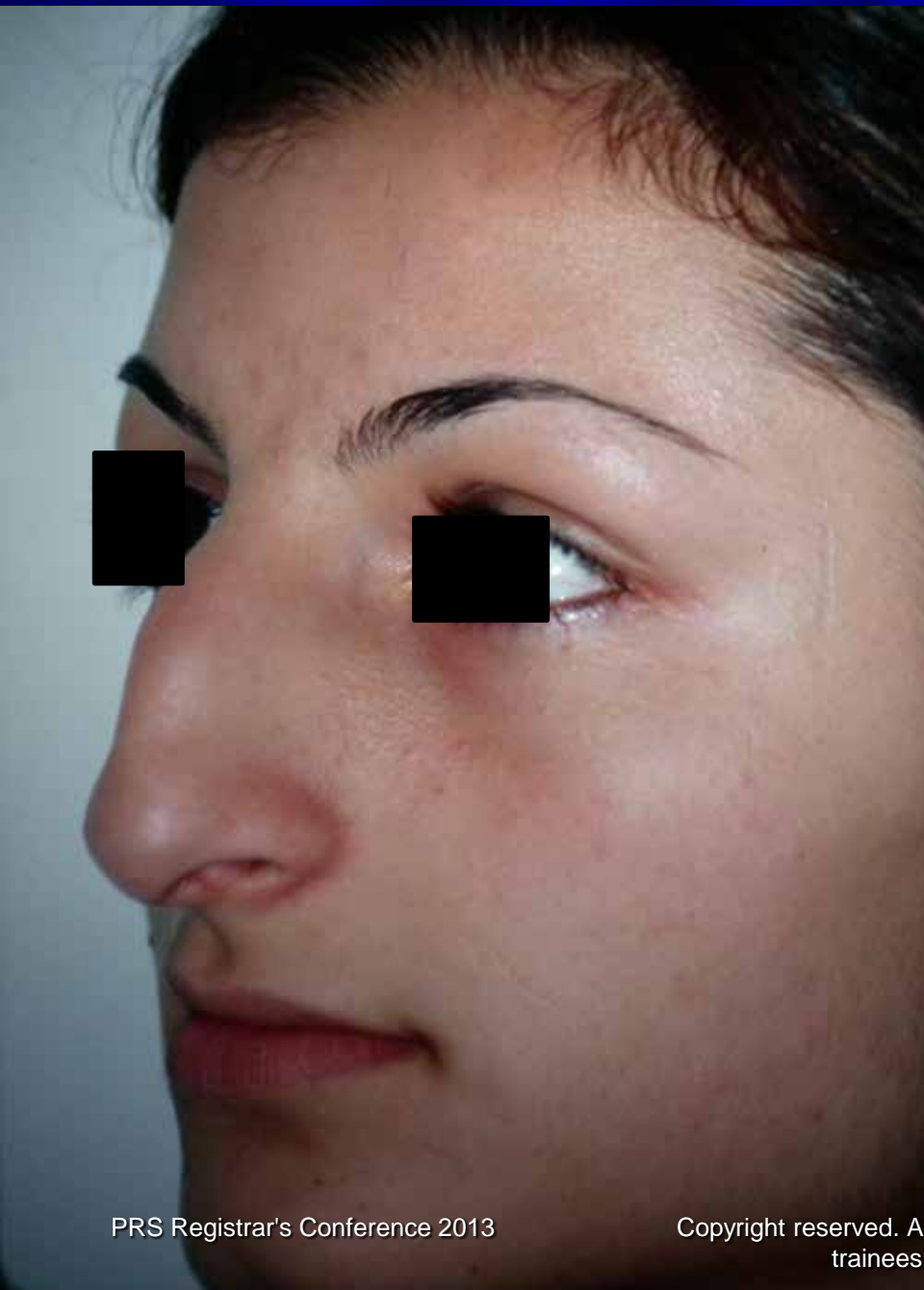
Bony and cartilaginous reduction

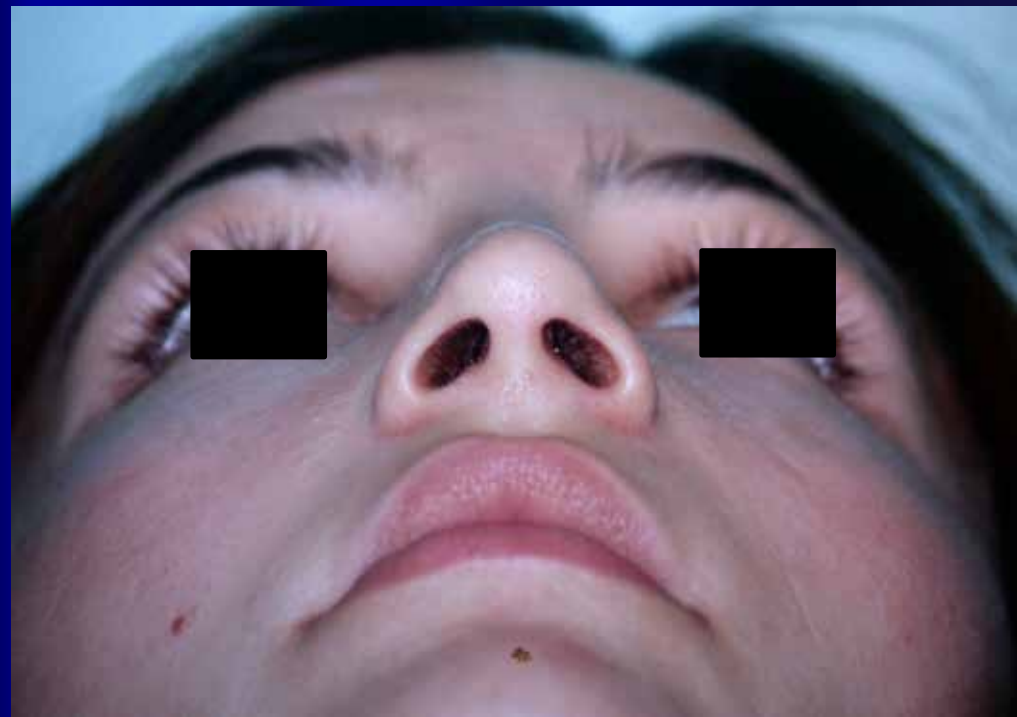
Radix
reduction
ULC spreader
flap
Median and
low to low
osteotomies

Cephalic trim
Columellar
strut
Transdomal
sutures









INCREASING TIP PROJECTION

INCREASING METHODS OF TIP PROJECTION

1. **Suture Techniques**
(Transdomal, Interdomal, Lateral Crural Spanning, etc)
2. **Strong columellar strut and advancement of medial crura with sutures on columellar strut using open approach**
3. **Tongue and groove suture technique**
4. **Stabilization of medial crura to septal extension graft**
5. **Advancing the lateral crura medially with horizontal mattress sutures and columellar strut or septal extension graft)**
6. **Tip grafts (shield shape, tip onlay)**

COLUMELLAR STRUT

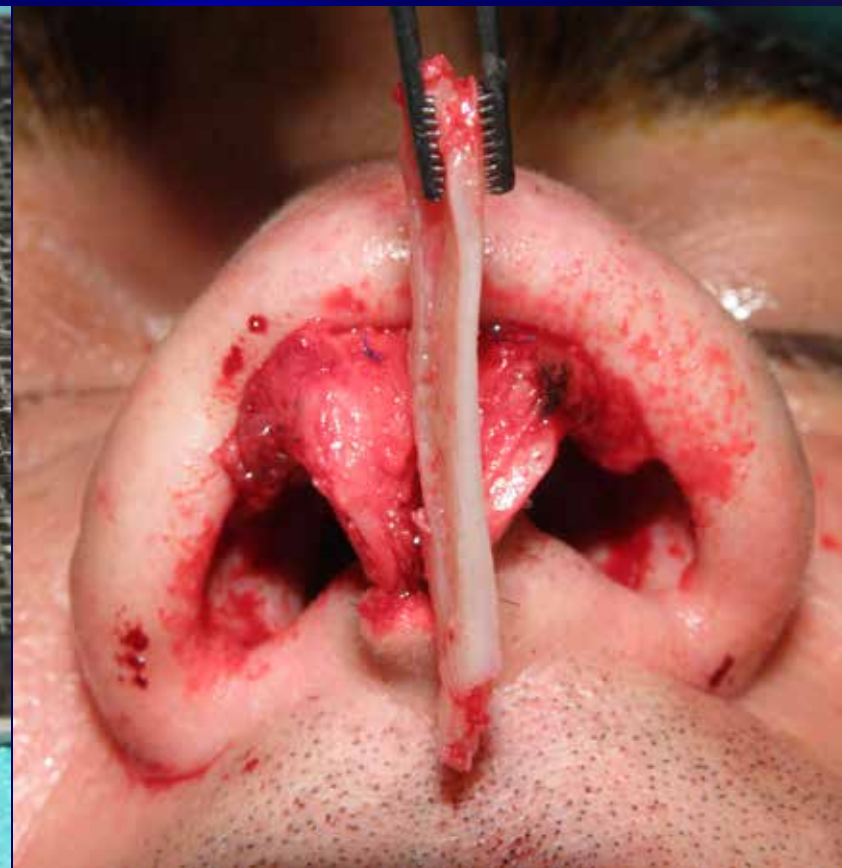
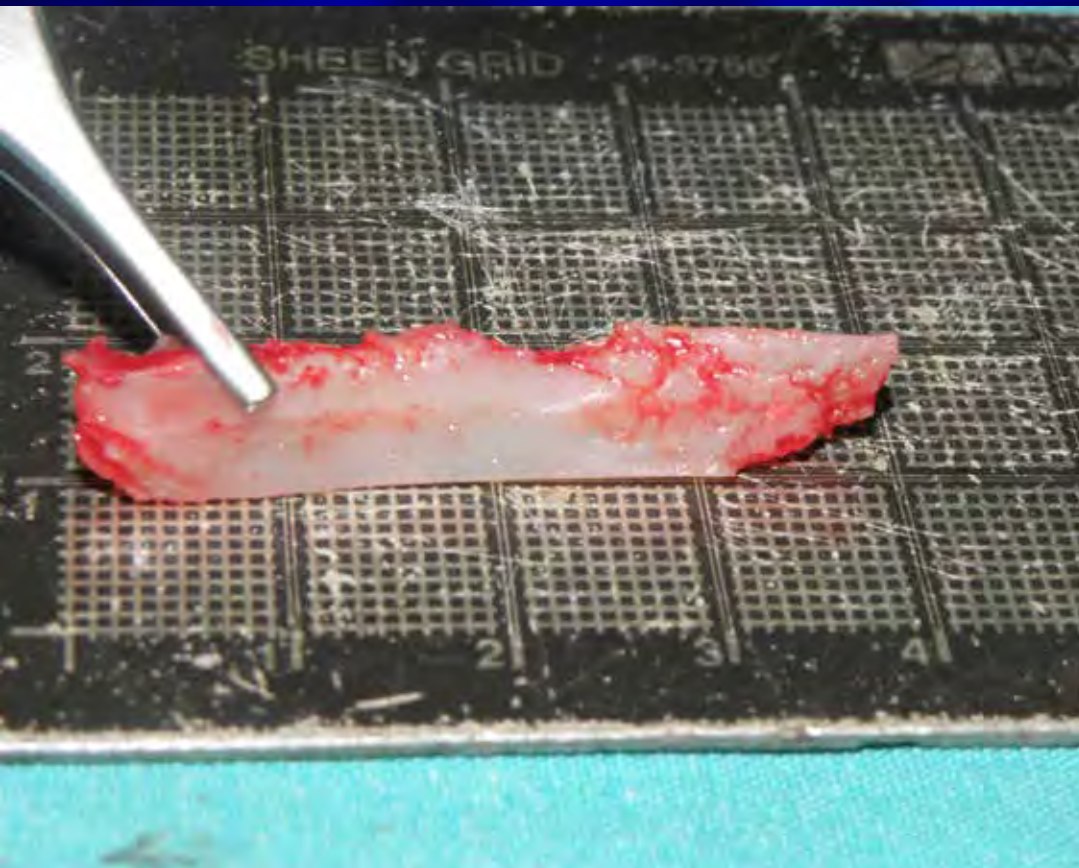
- Supporting and stabilizing the nasal tip
- Controlling shape and profile configuration of medial crura, and maintaining projection and rotation of tip complex
- Changing columella-lobule angle (Bending medial crura to the desired angle and fix them in that position)
- Controlling the length of the medial or middle crural segments
- Increasing tip projection (with advancing medial crura on the strut)
- Correcting intercrural deformities or asymmetries of medial crura
- Correction of retracted columella

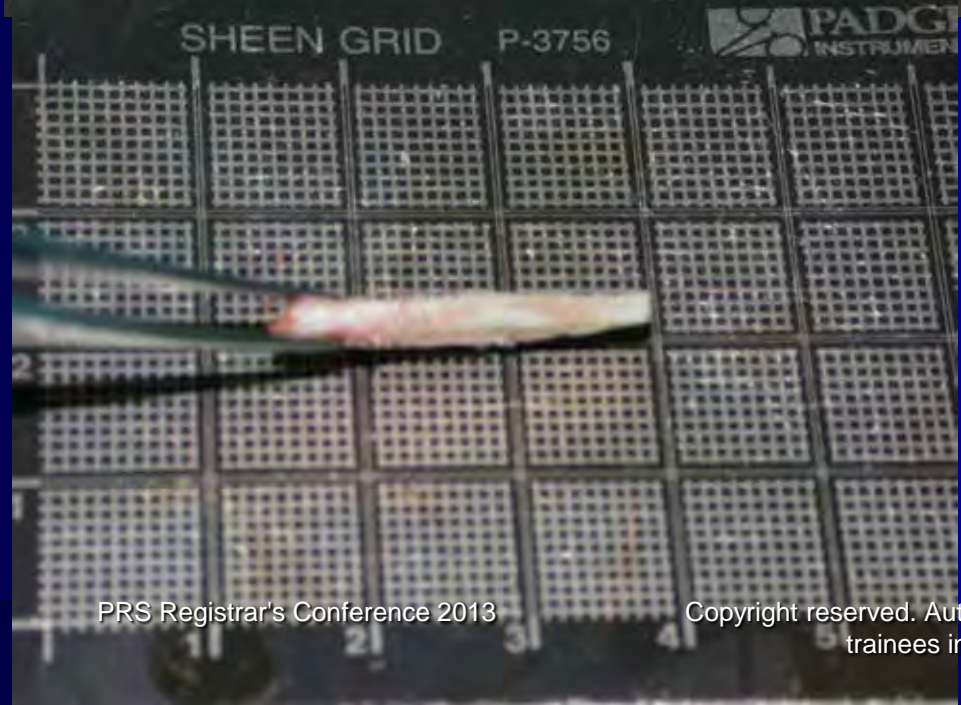
COLUMELLAR STRUT

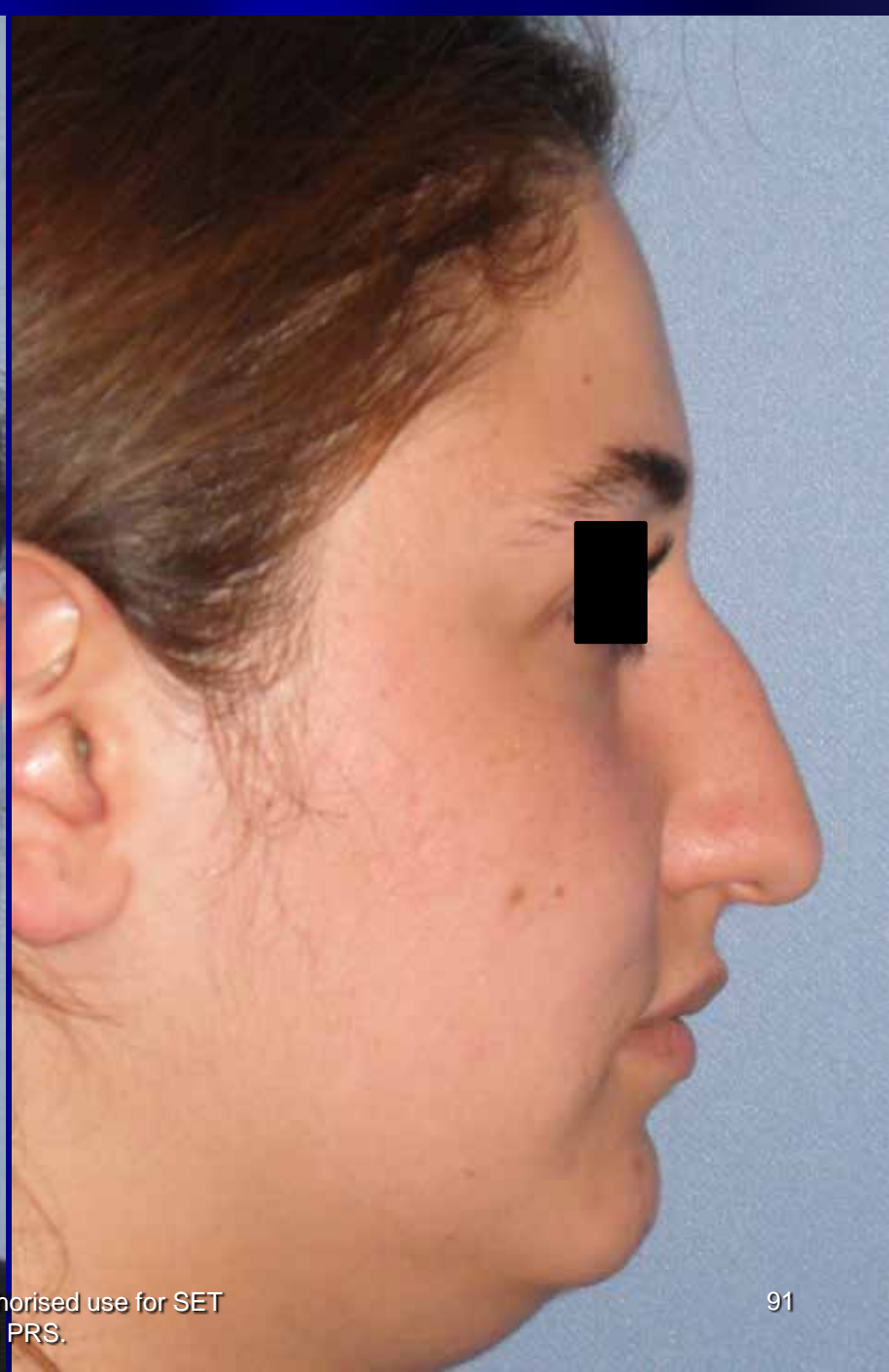
**(Advancement of medial crura
with sutures on a long
columellar strut)**

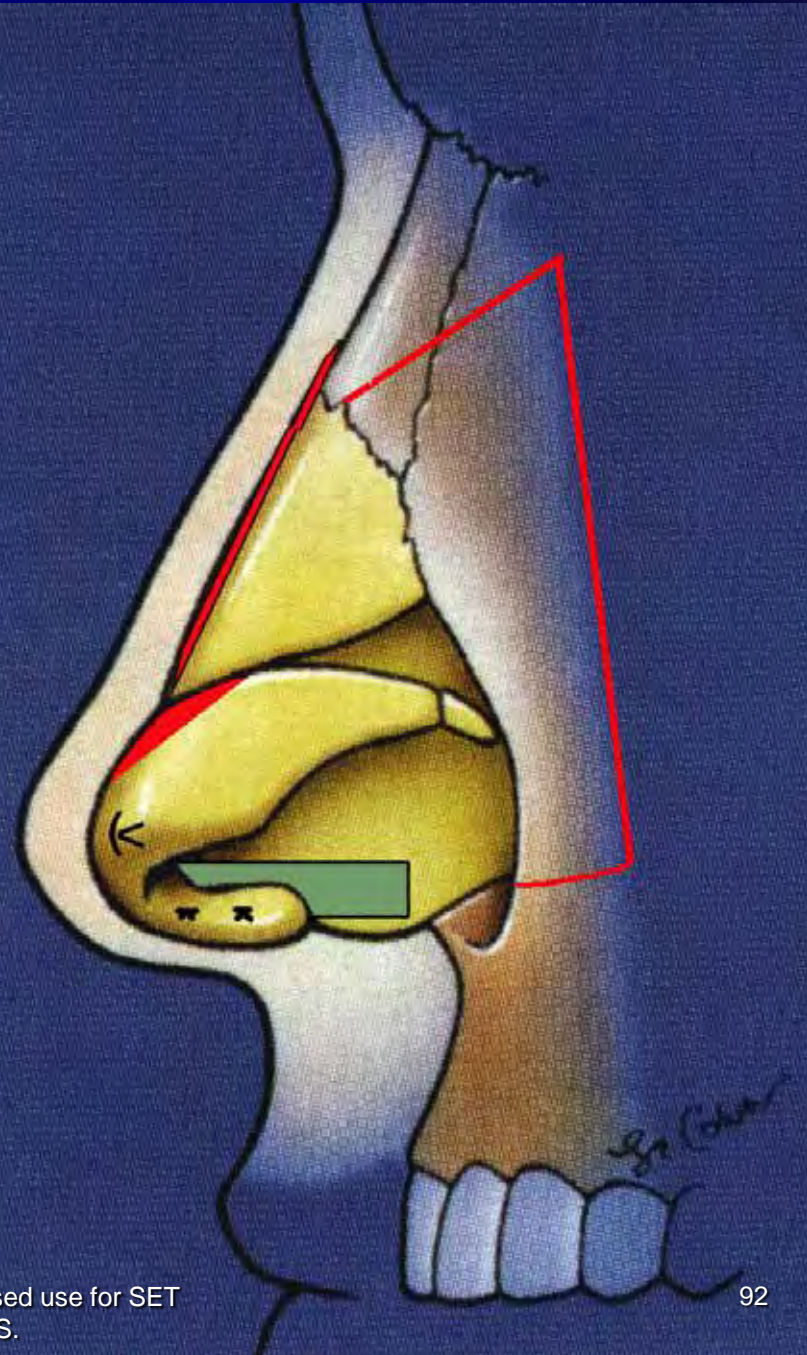
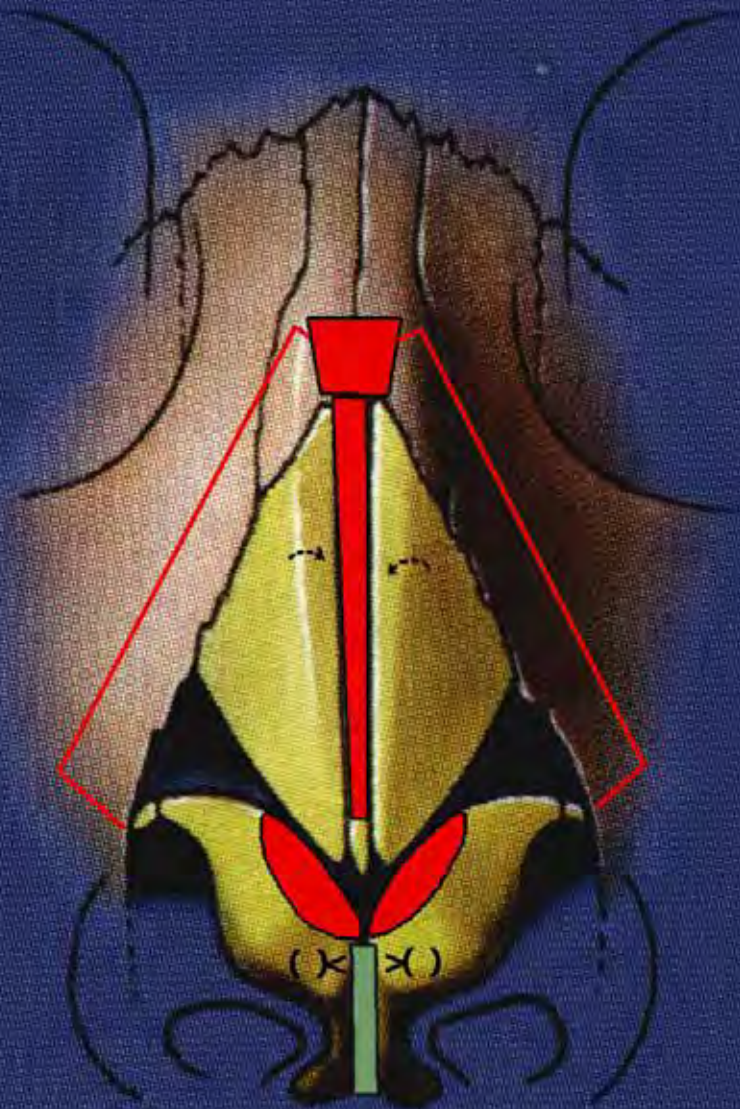




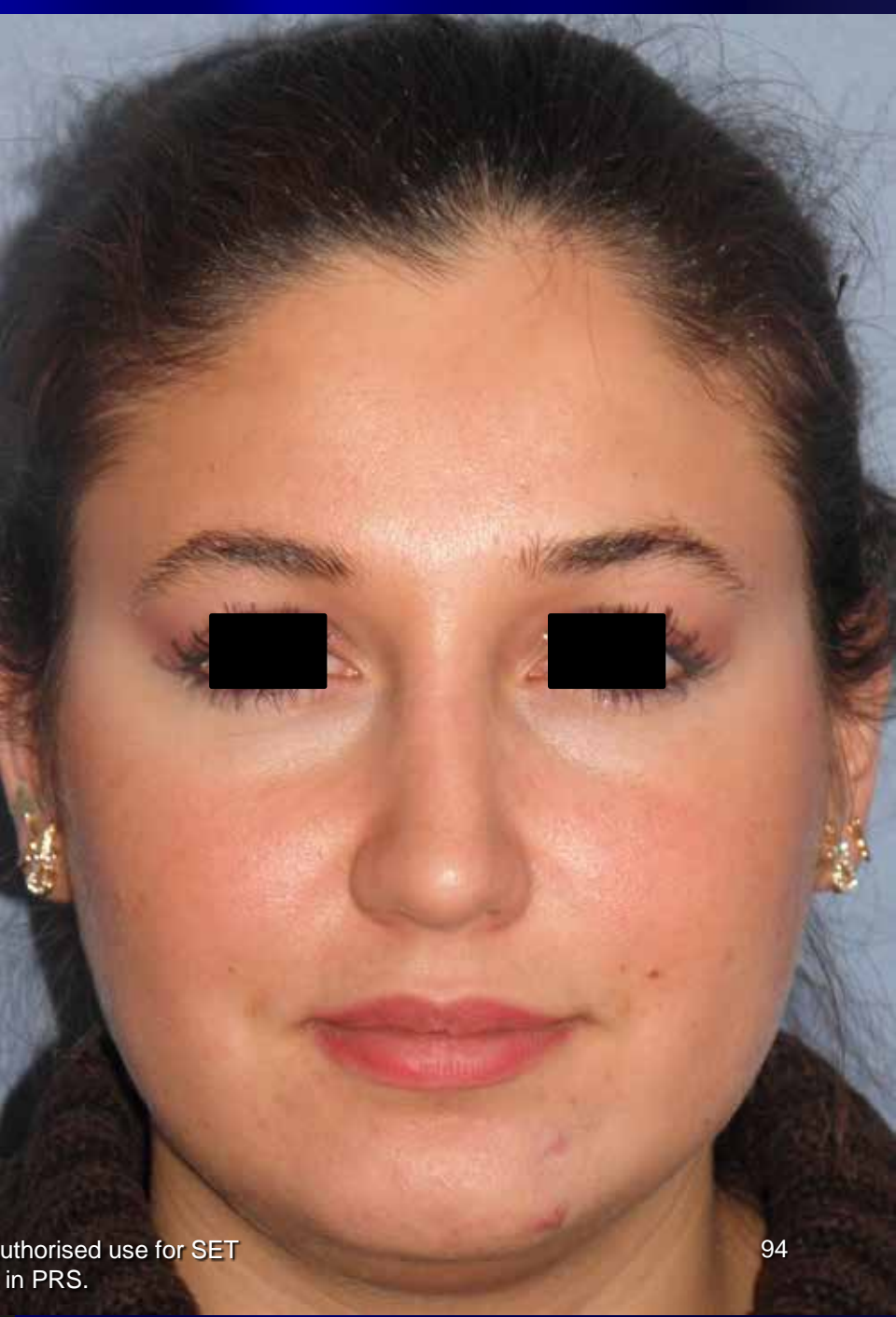
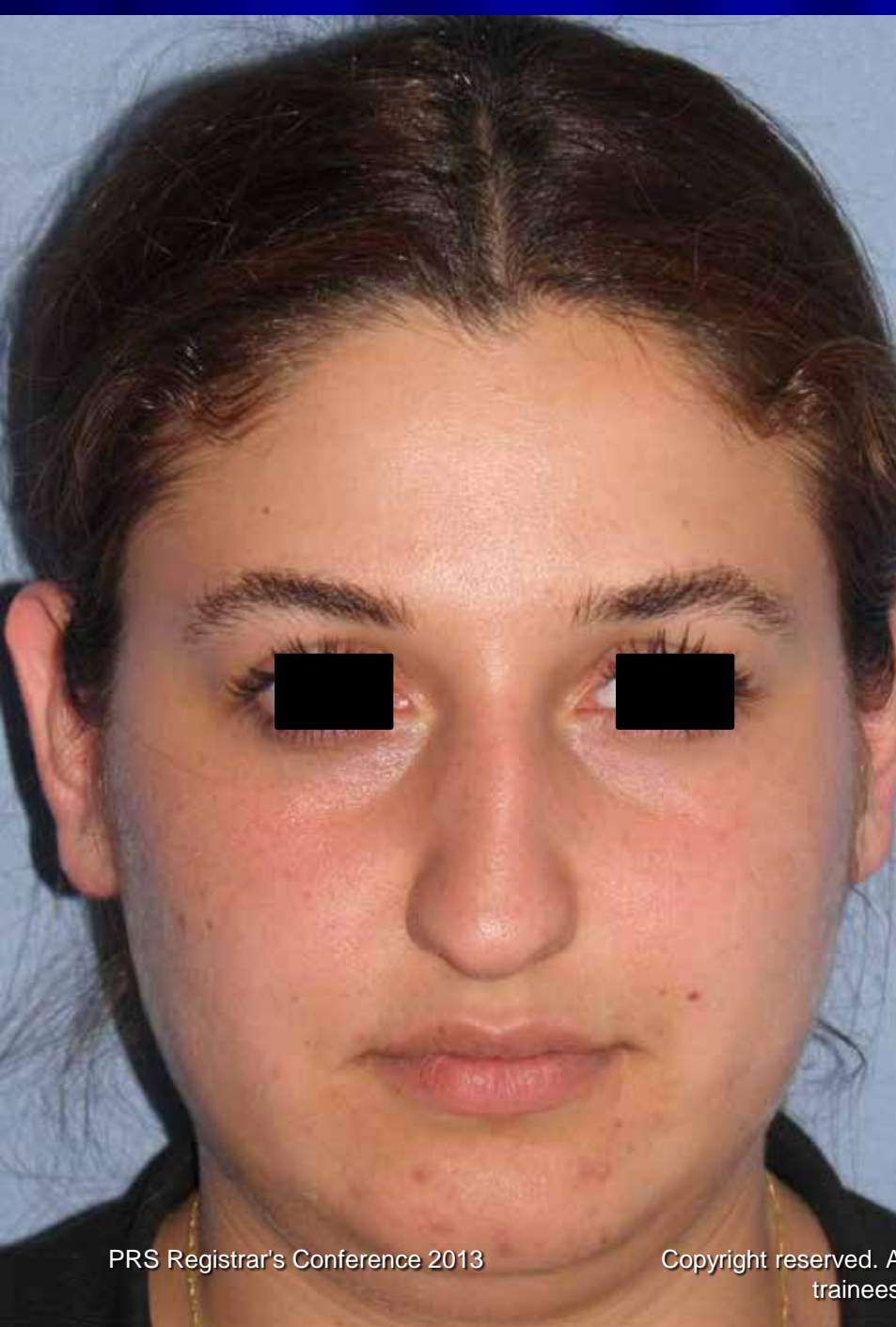




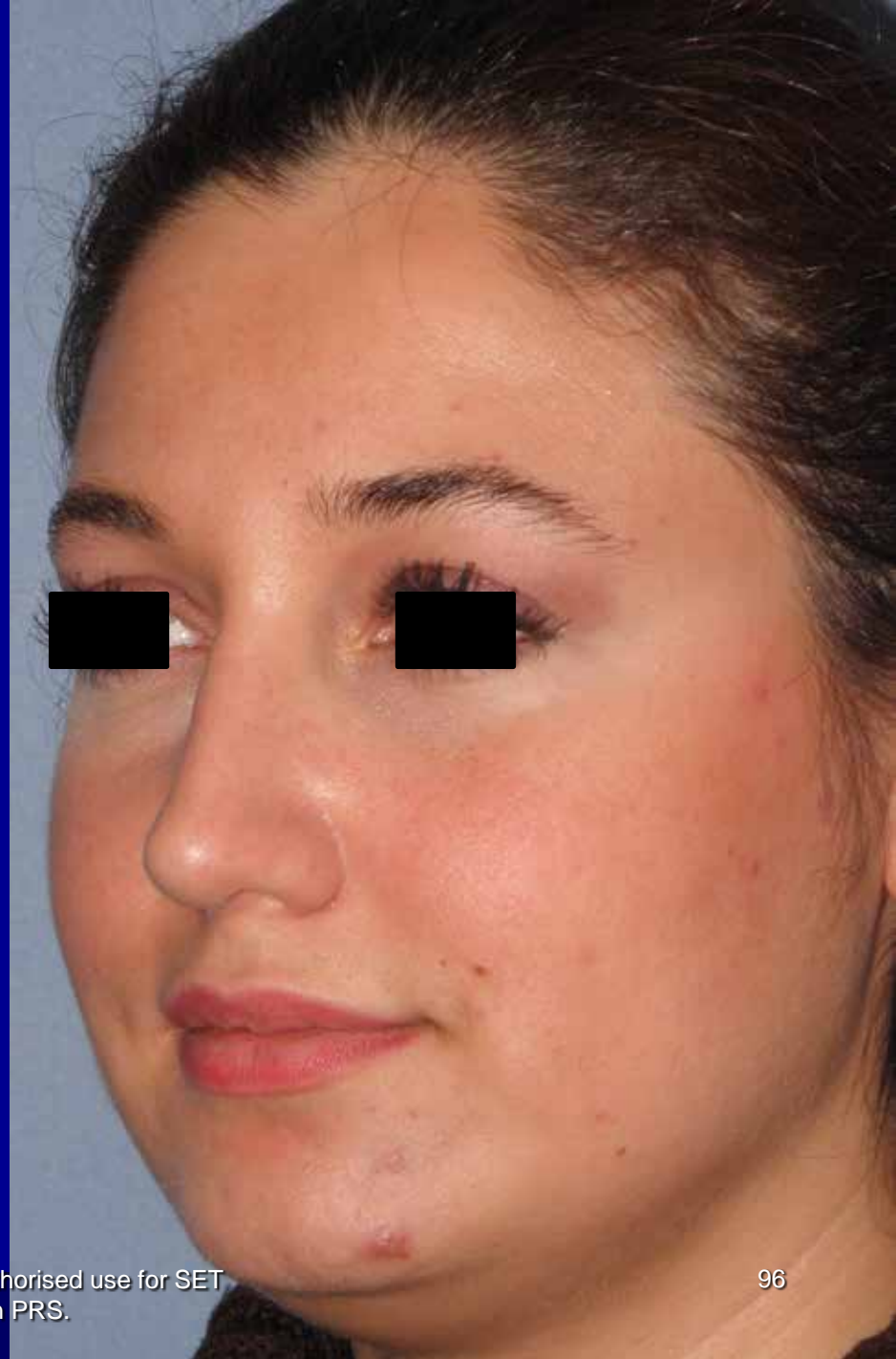
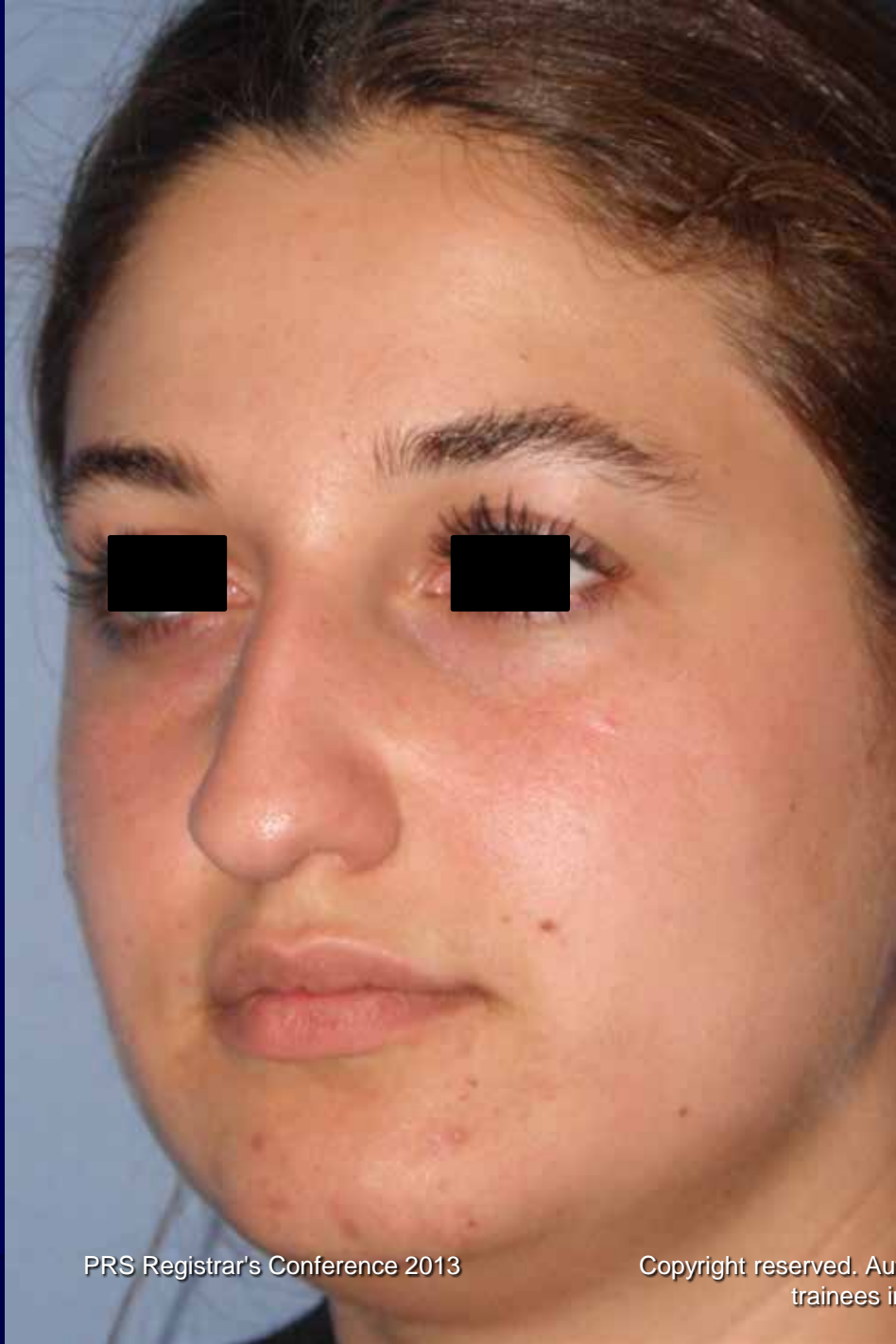














LATERAL CRURAL STEAL

Advancing Lateral Crura Medially with Sutures



LATERAL CRURAL STEAL

- ▮ Lengthens the middle crura
- ▮ Shortens the lateral crura
- ▮ Increases tip projection
- ▮ Rotates the nasal tip upward
- ▮ Narrows nasal tip
- ▮ Changes columella-lobule angle

LATERAL CRURAL STEAL

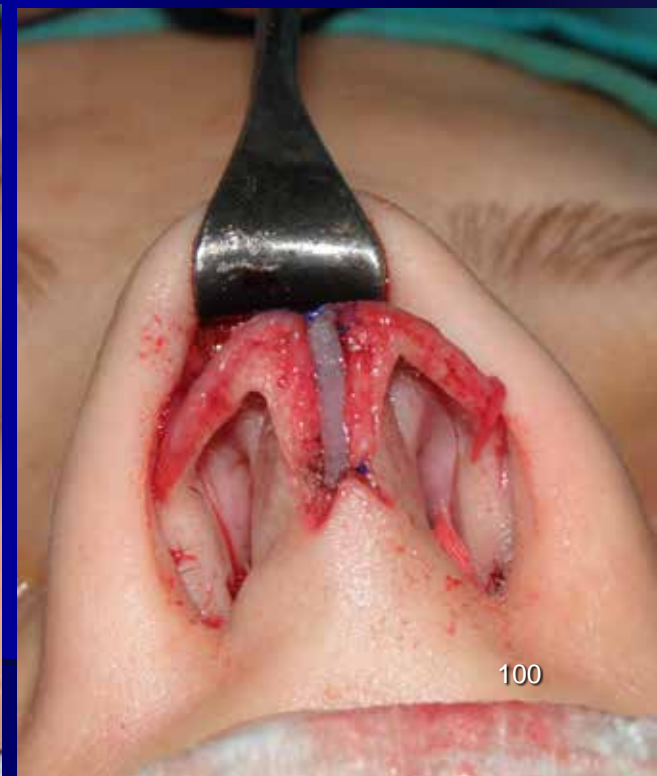
- To increase tip projection usually combined with a columellar strut or a septal extension graft

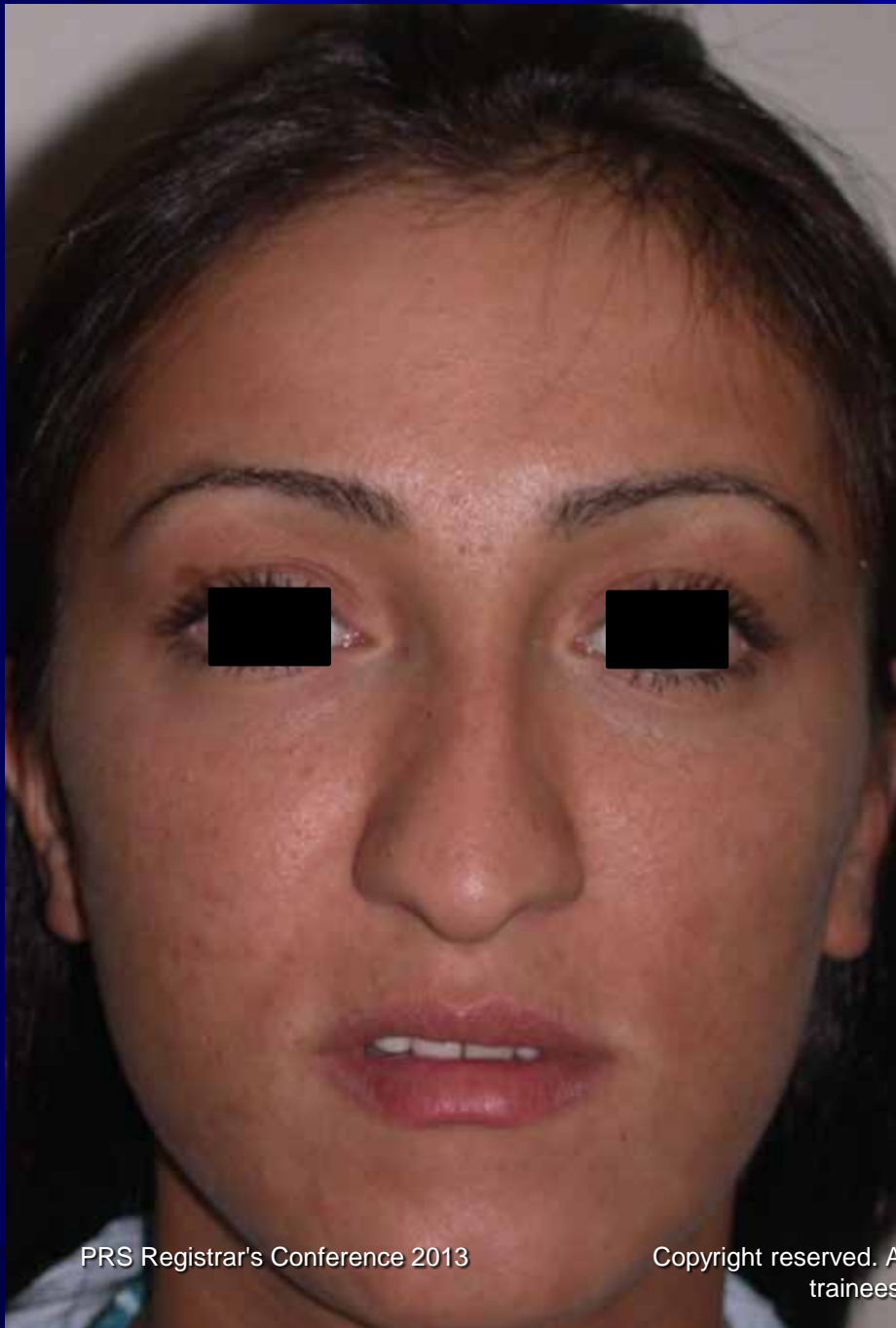


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Medial oblique osteotomy with outfracture
right side only

Superiorly extended spreader
graft right side only

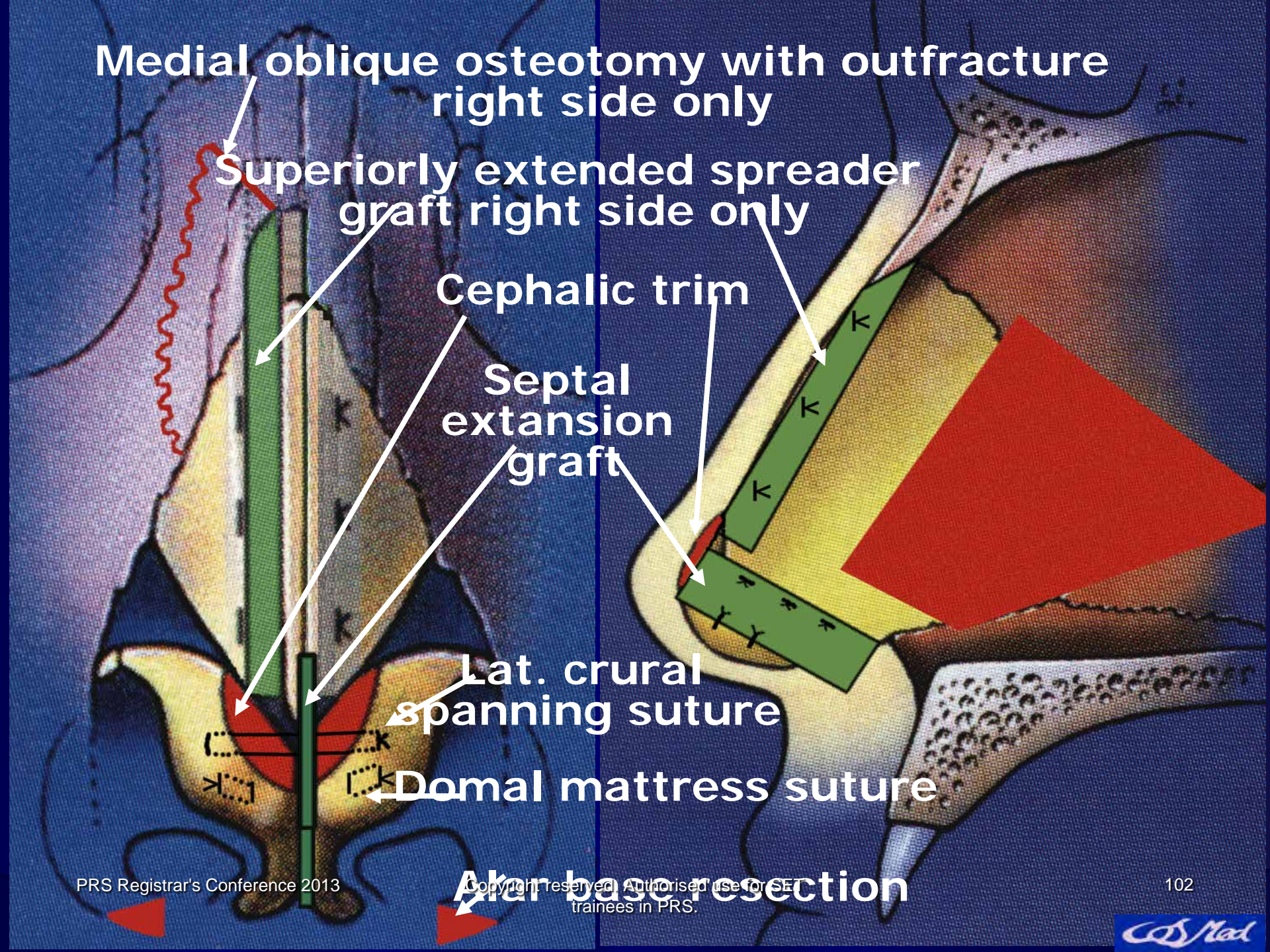
Cephalic trim

Septal
extension
graft

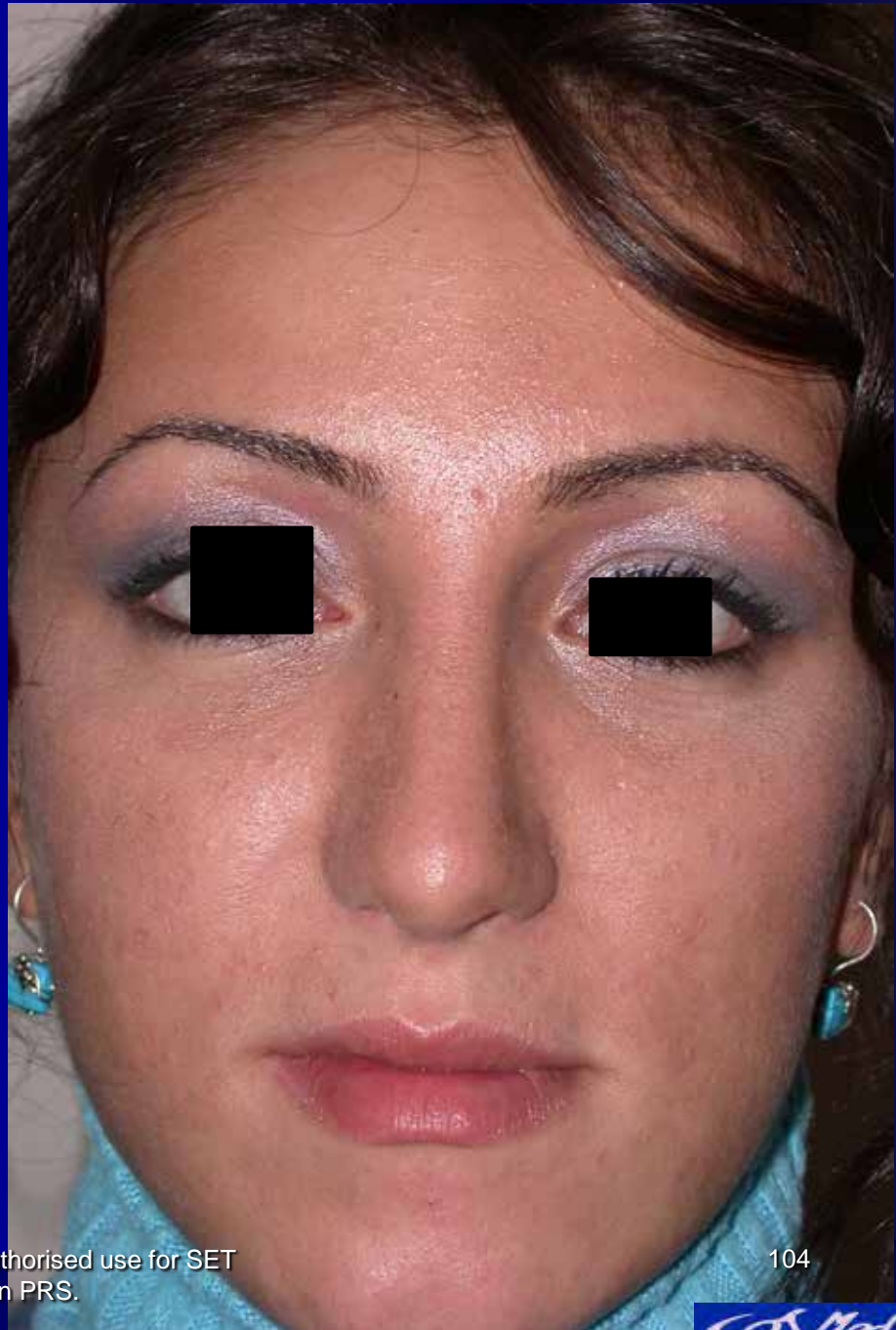
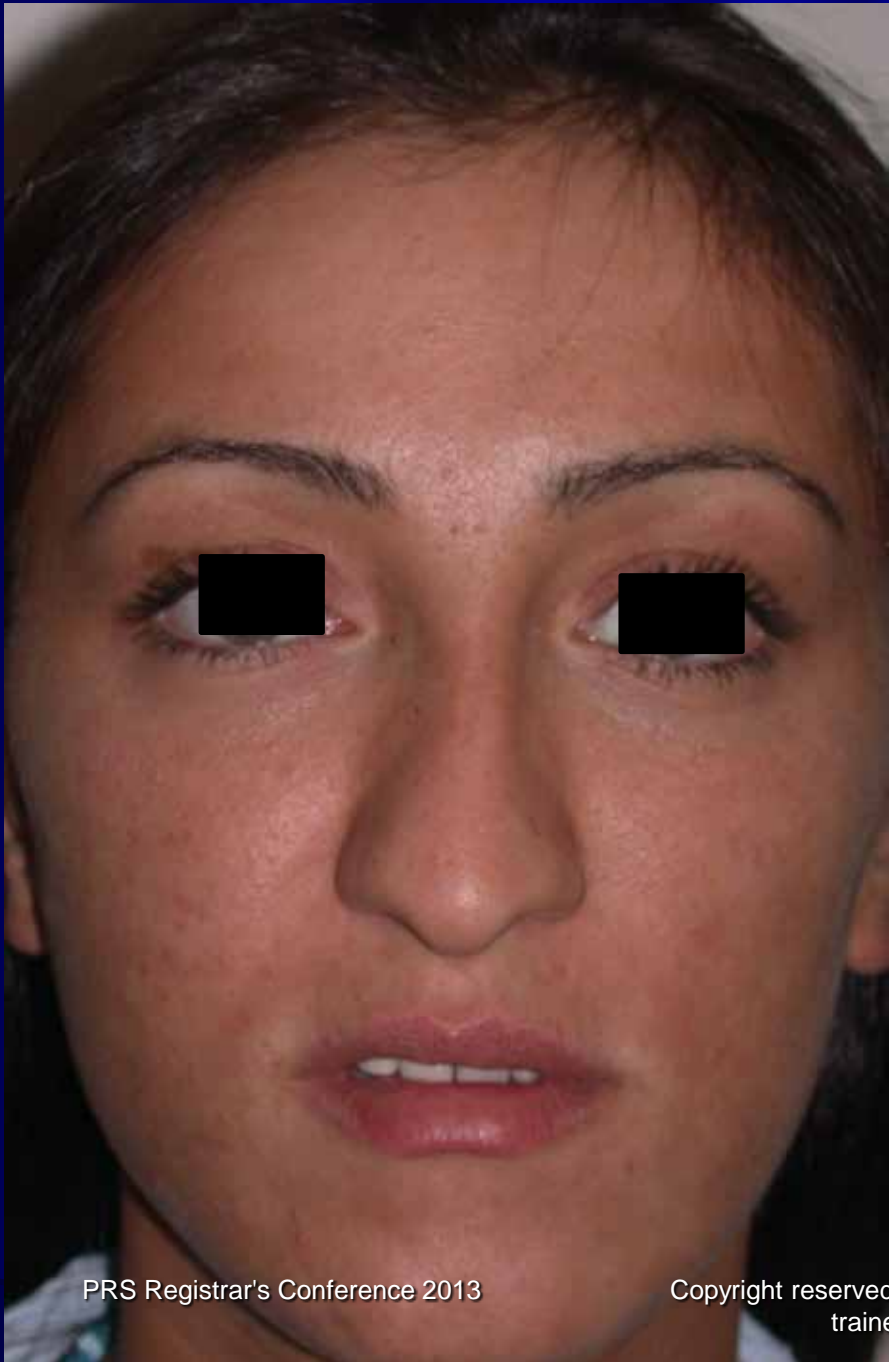
Lat. crural
spanning suture

Domal mattress suture

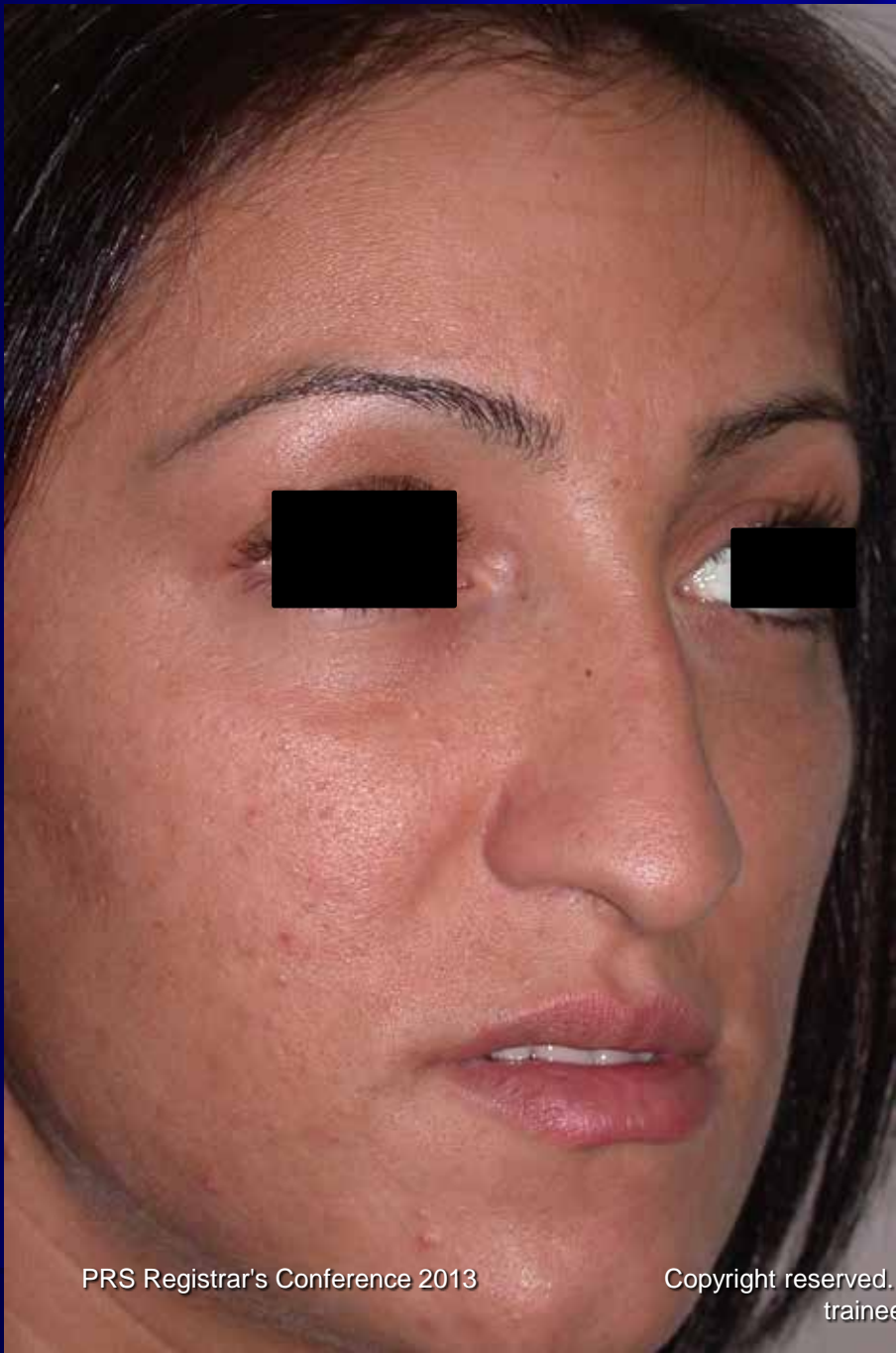
Alar base resection







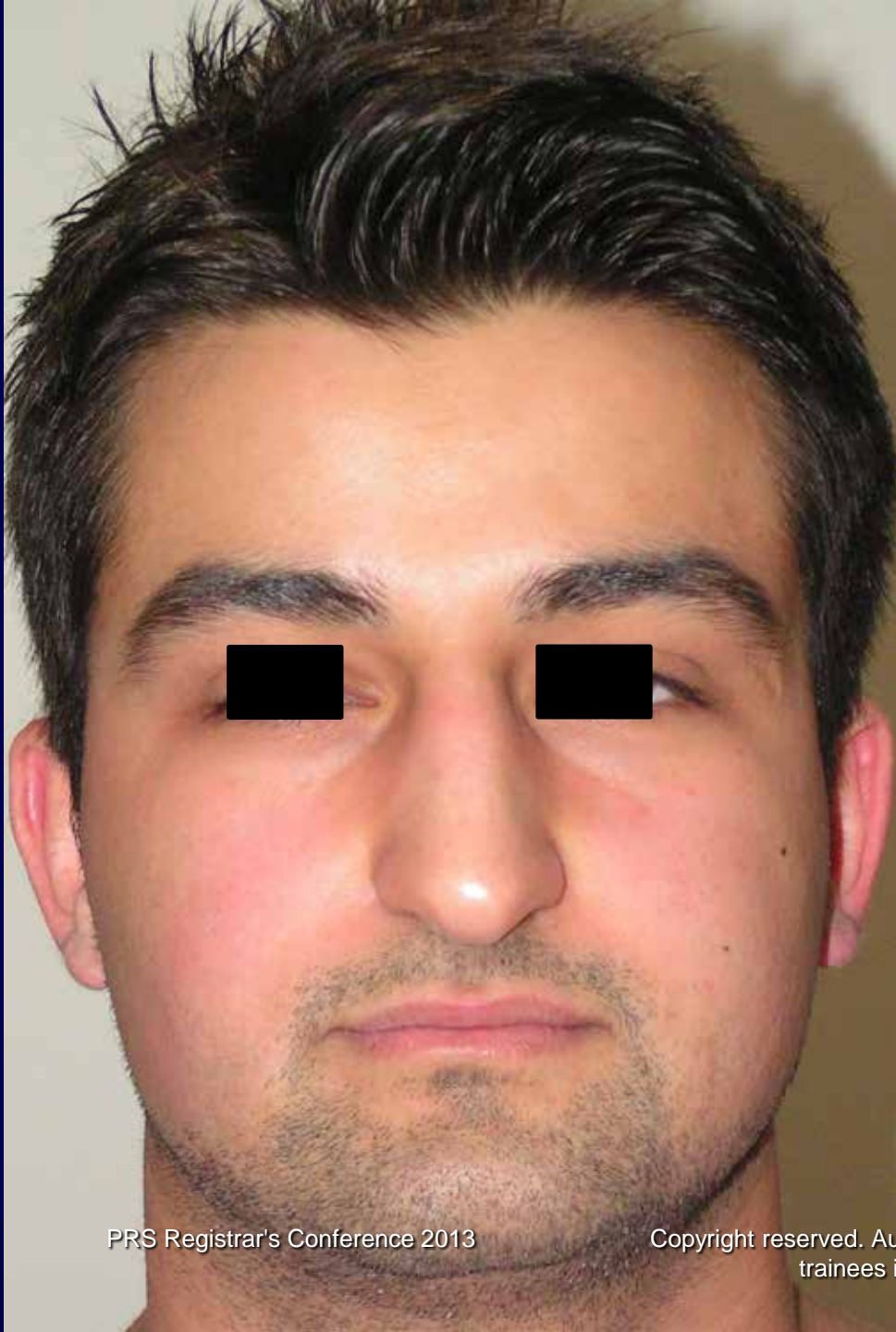


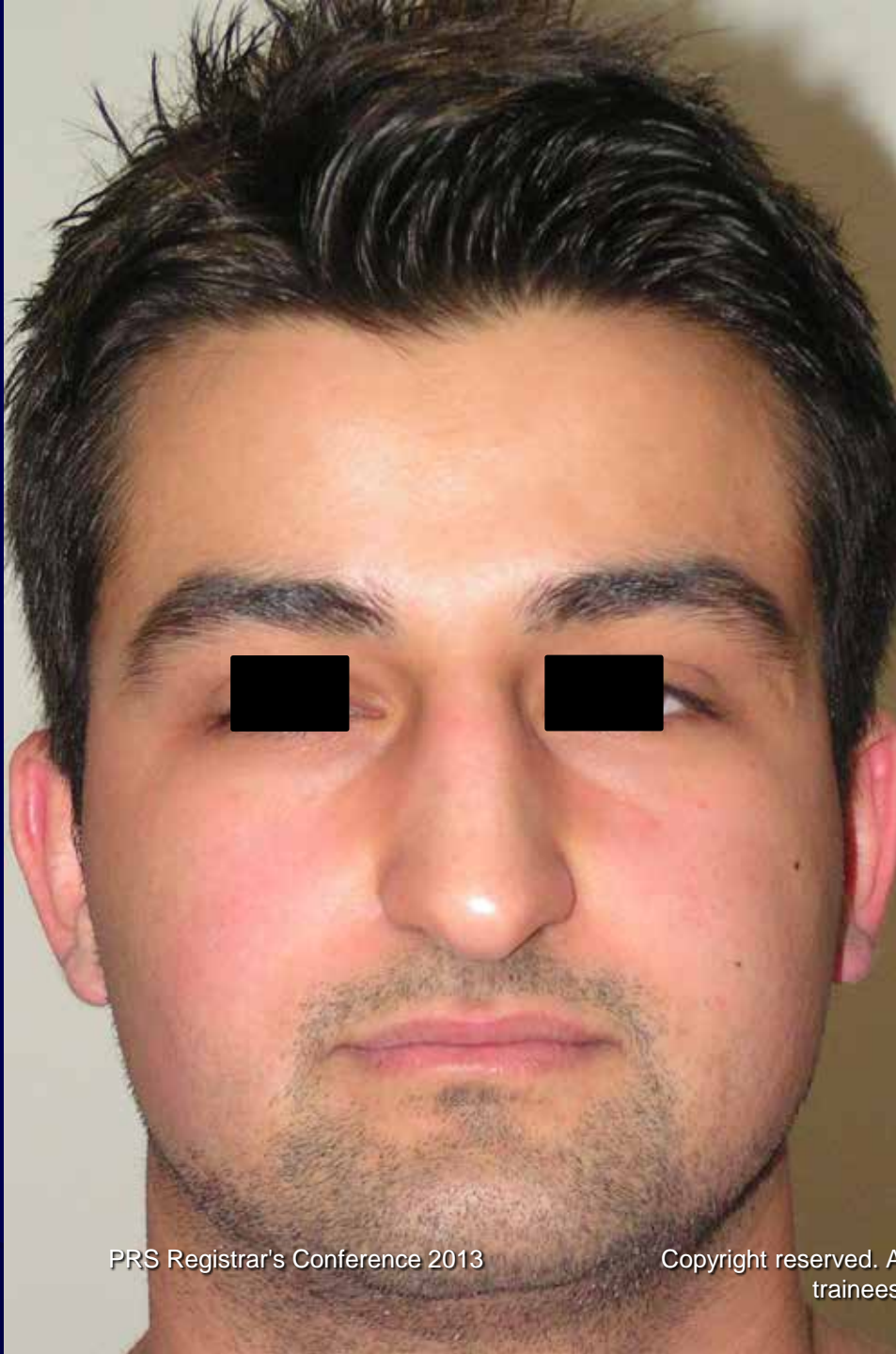




TONGUE IN GROOVE SUTURE TECHNIQUE





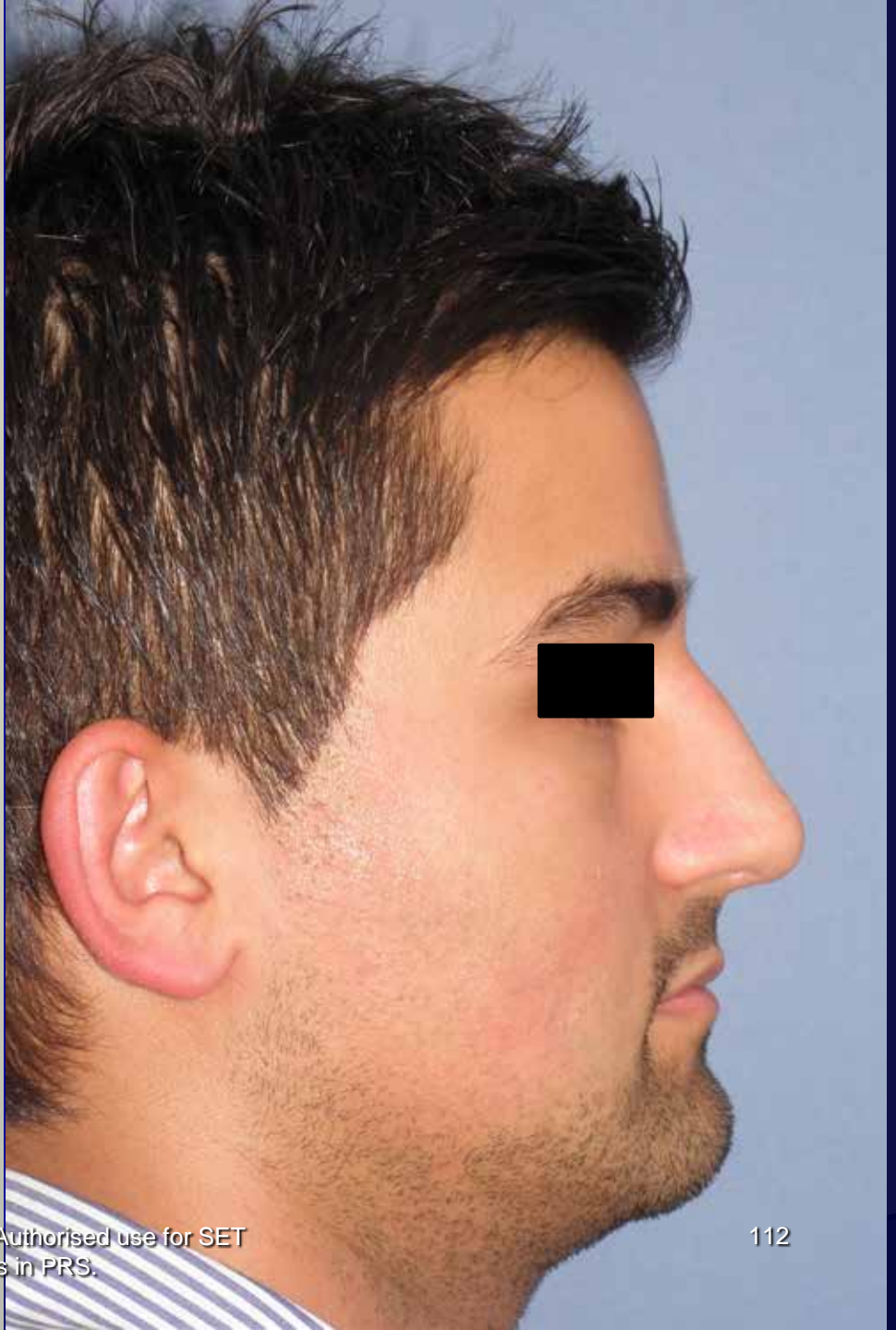


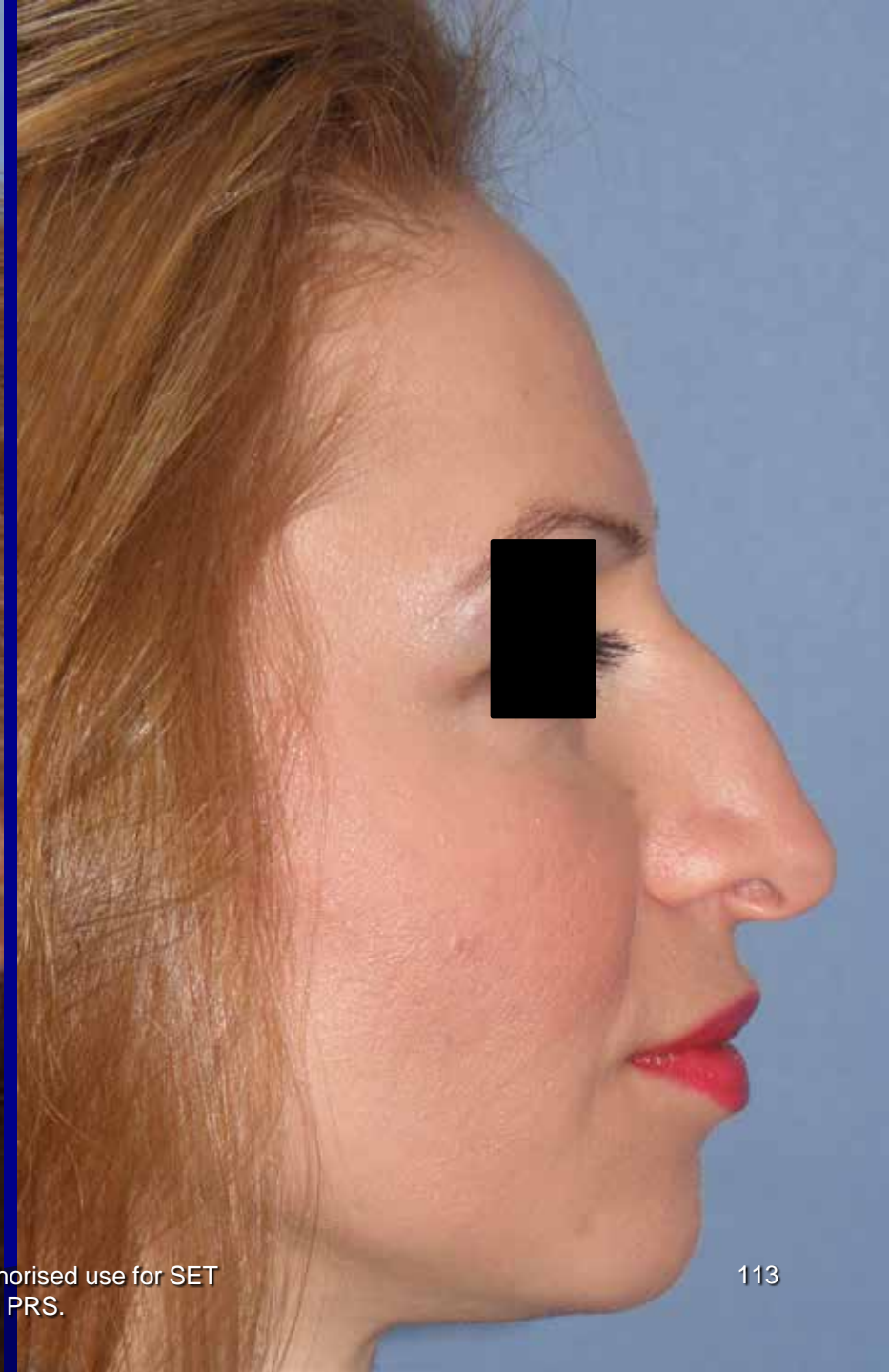
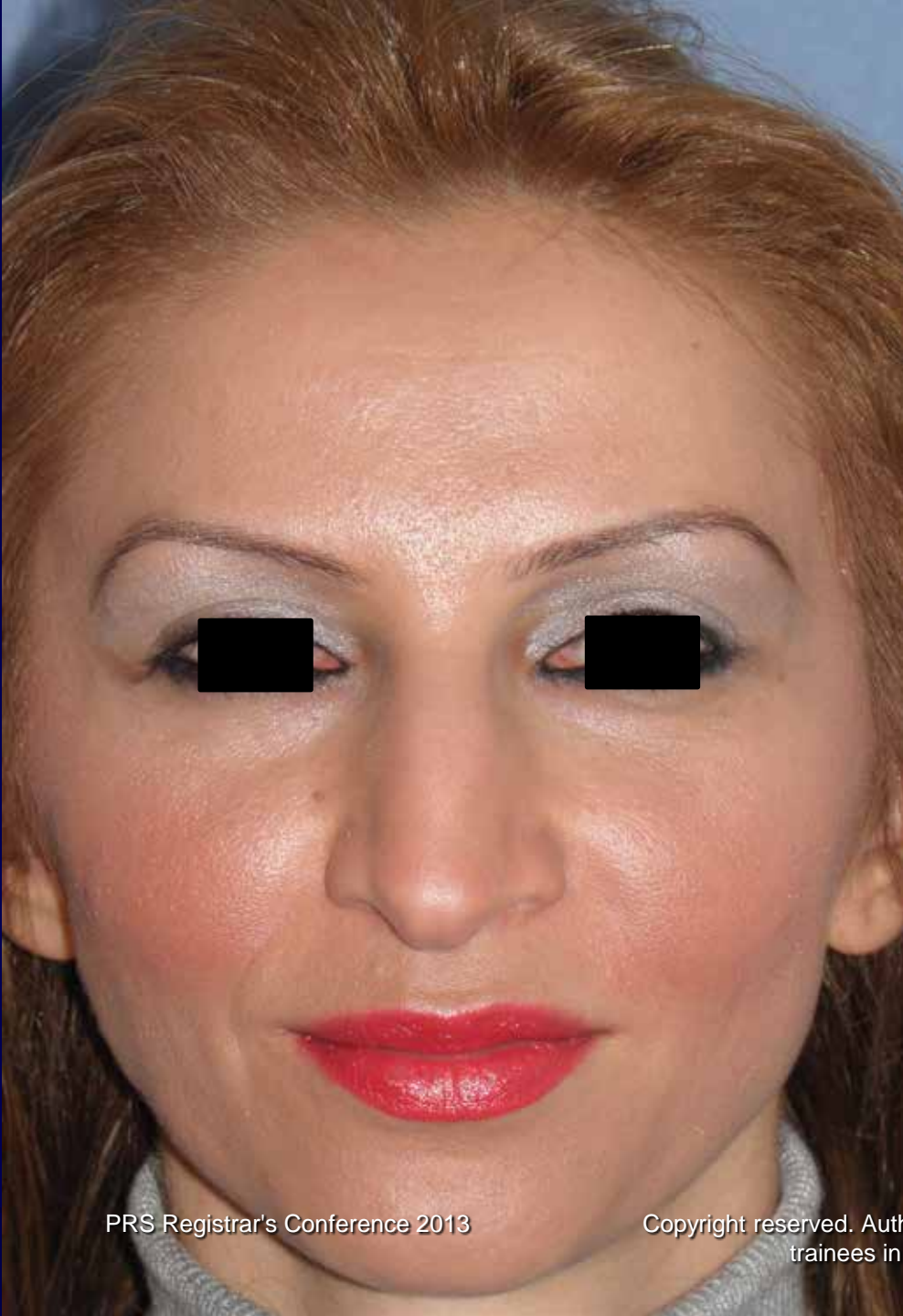
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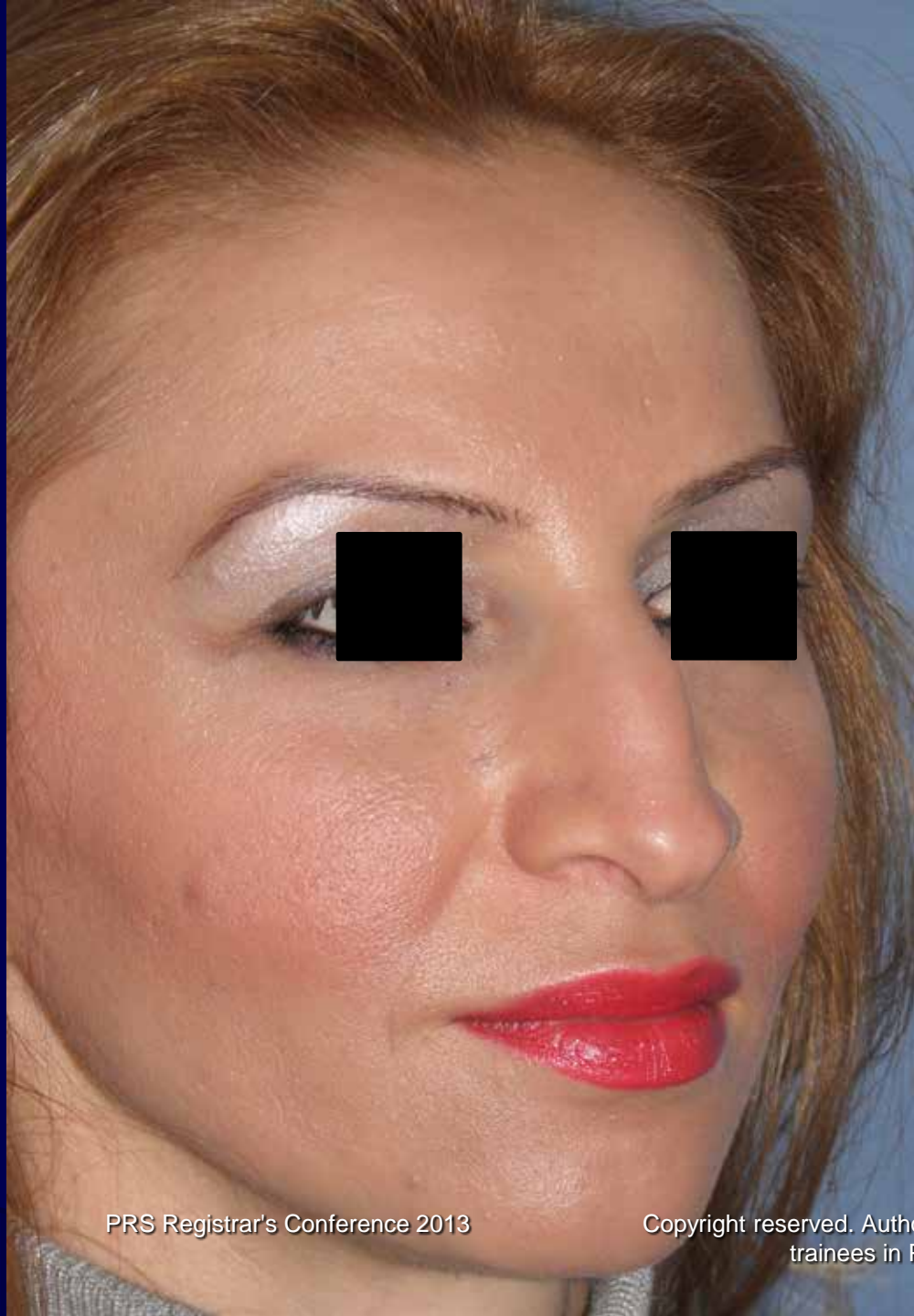
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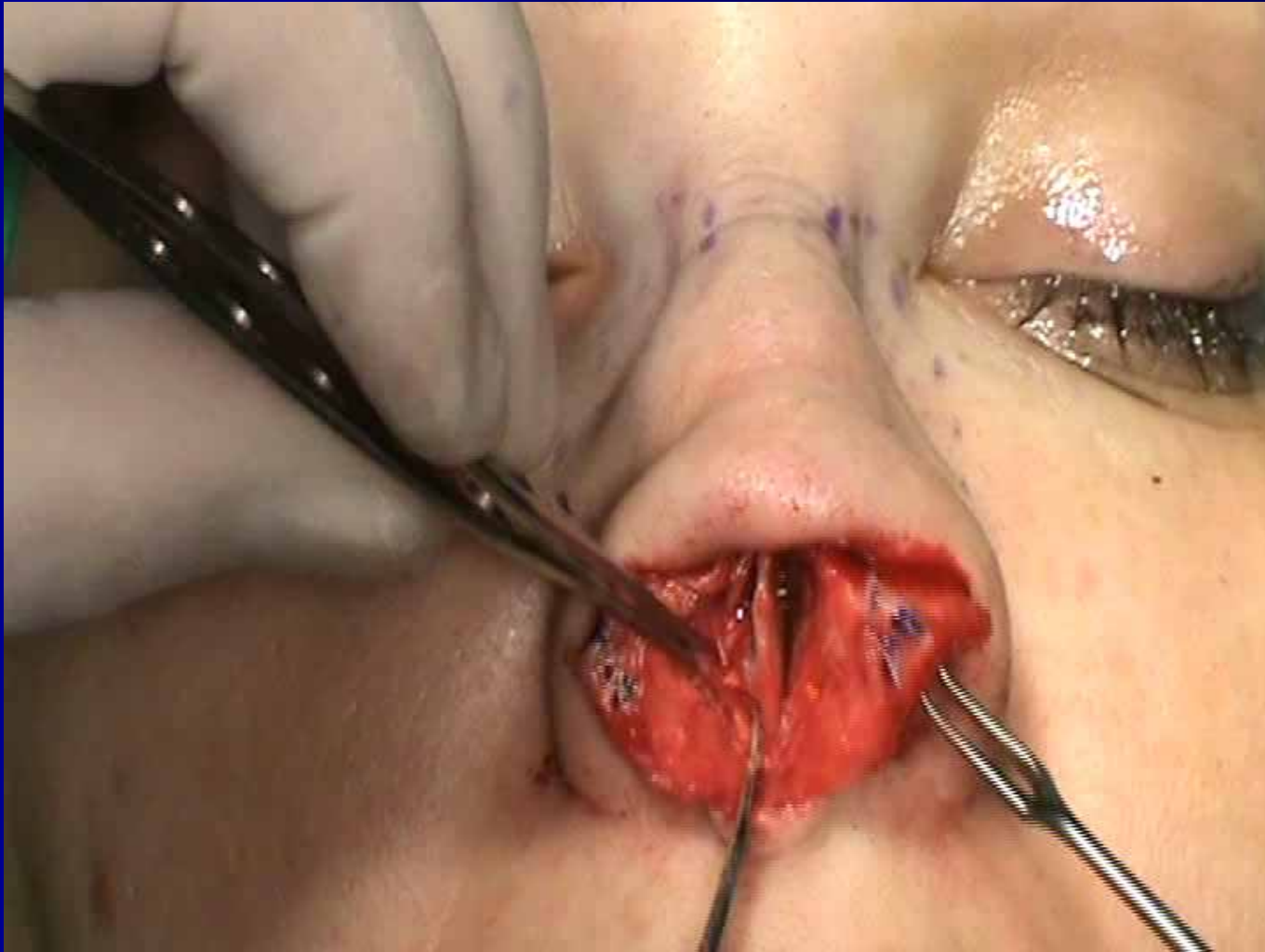
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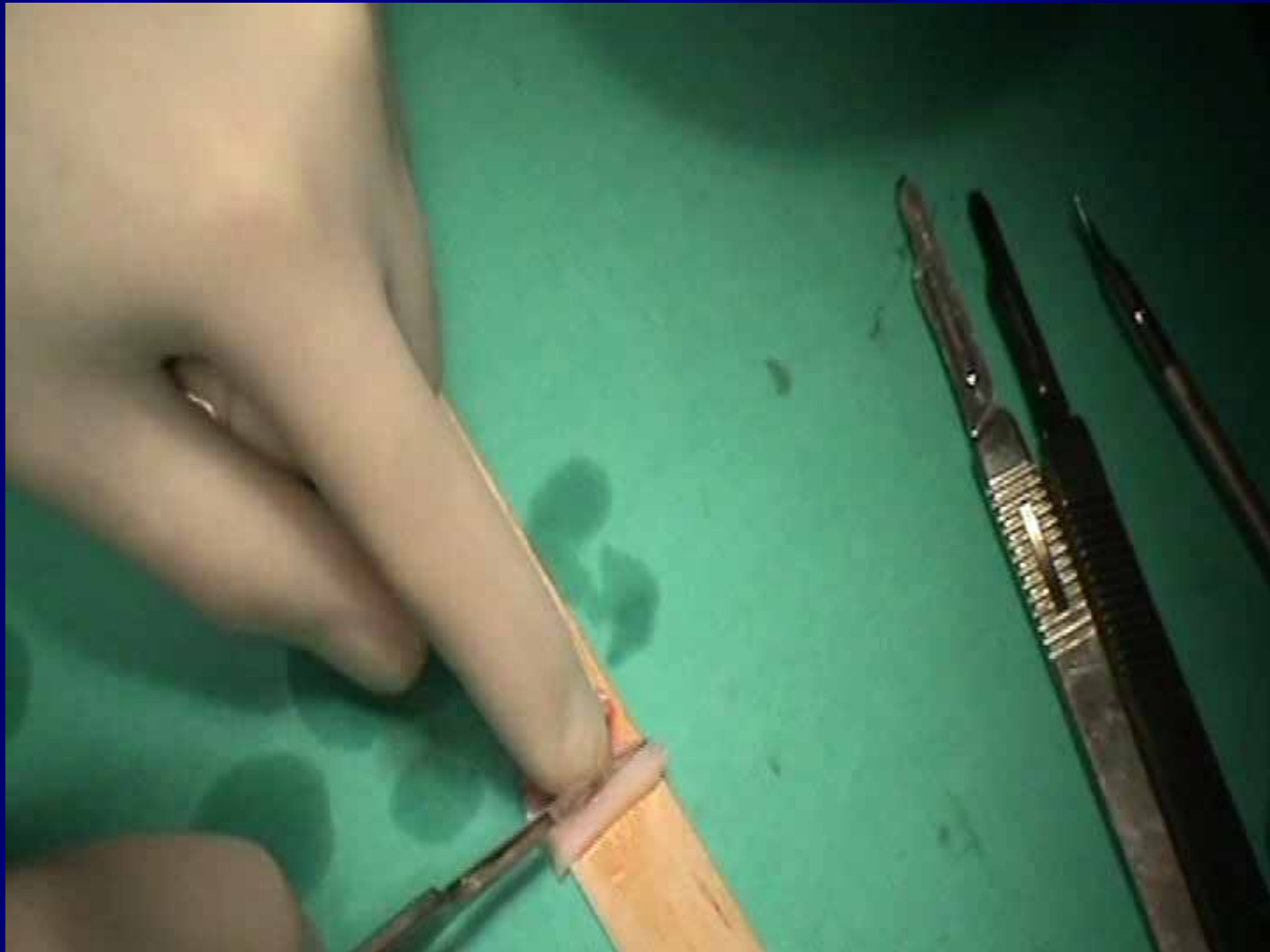


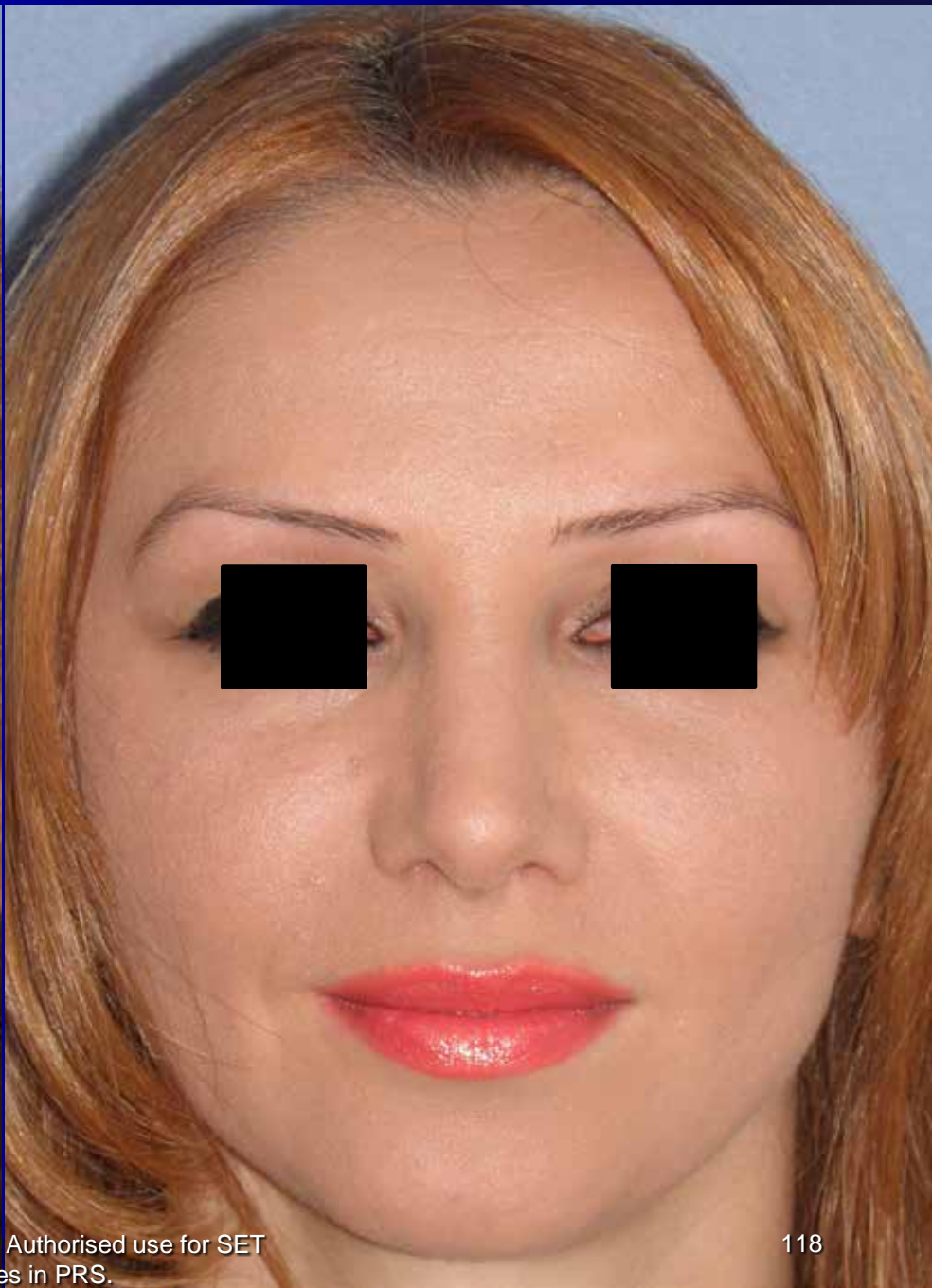
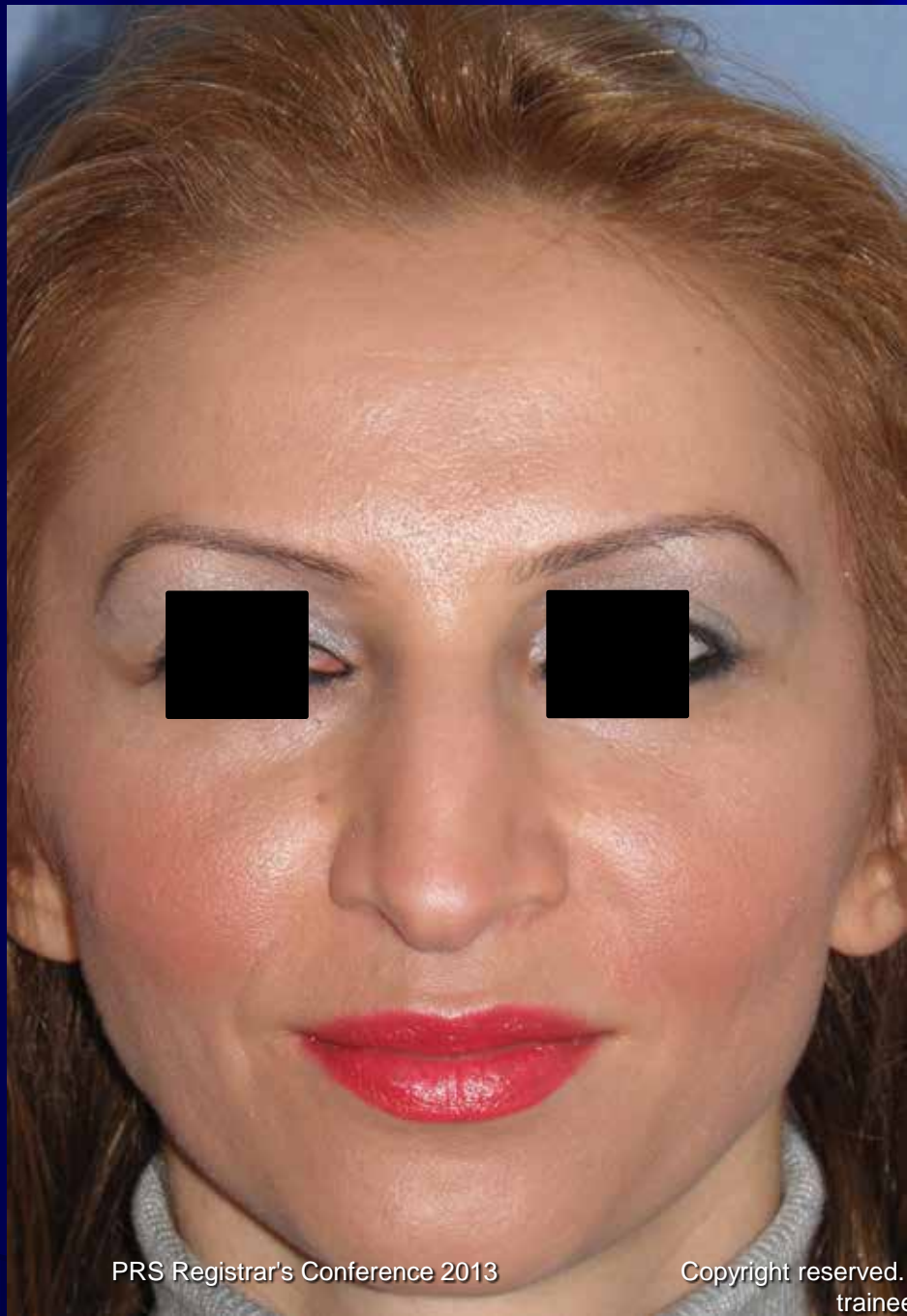


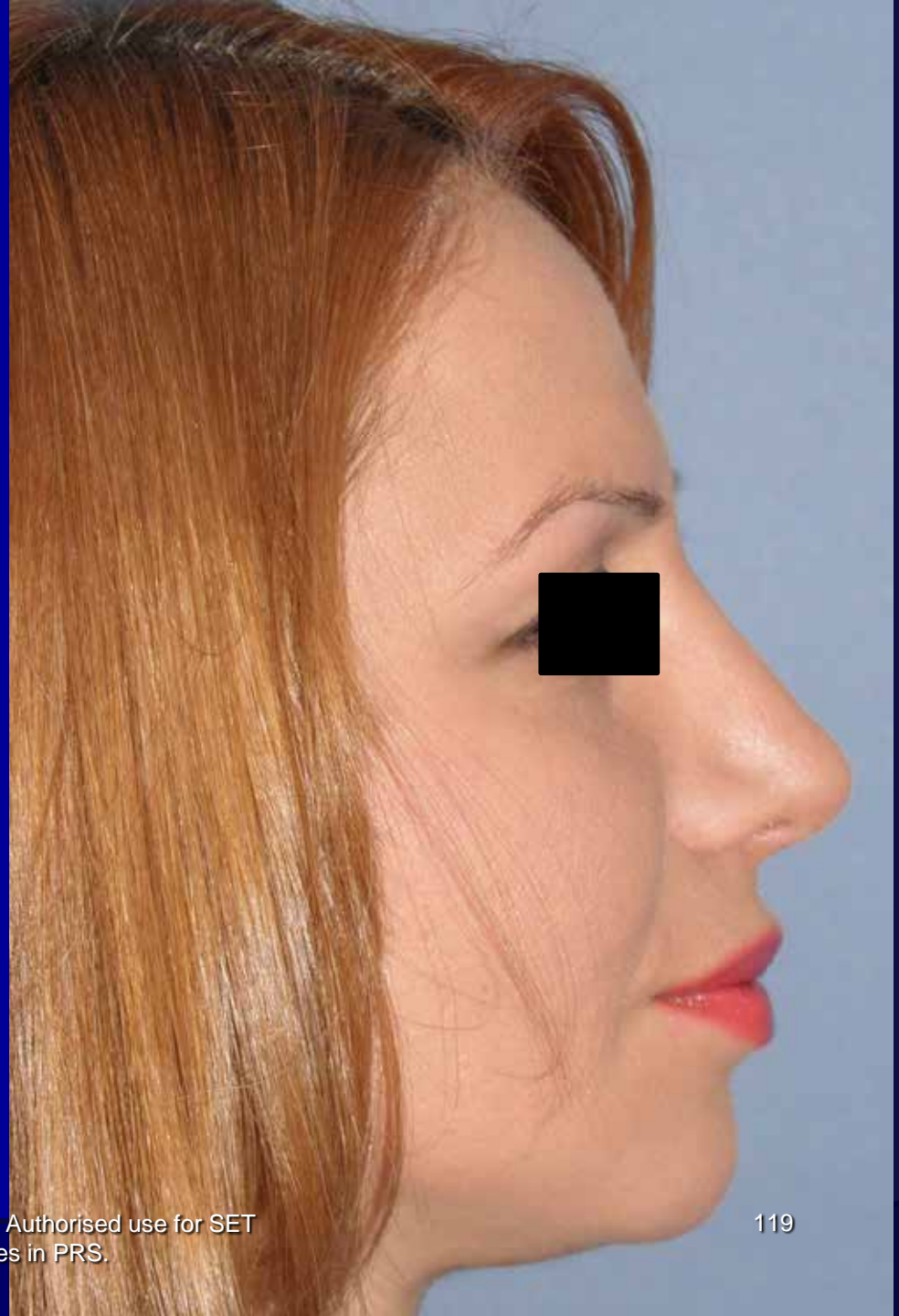
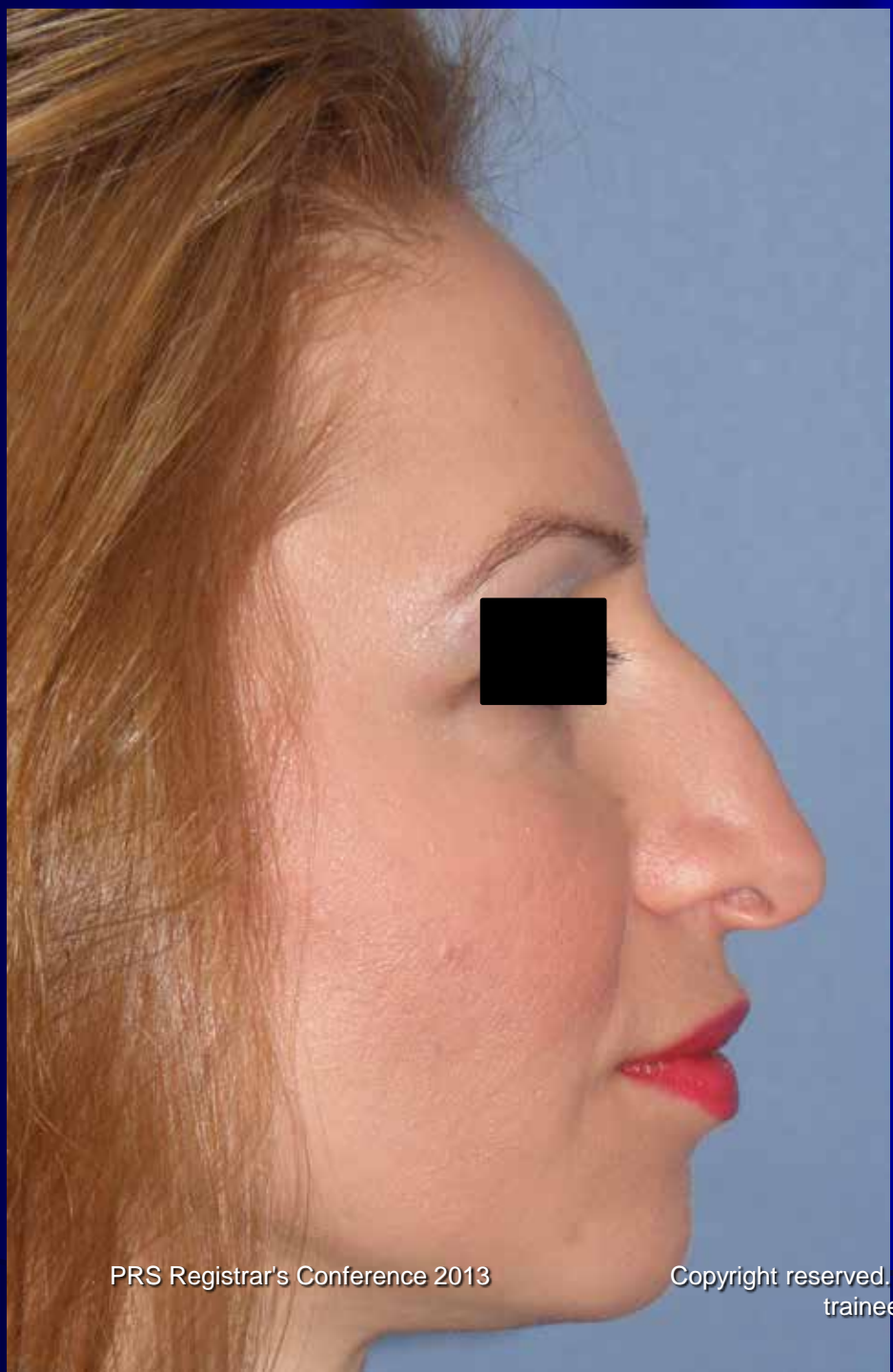


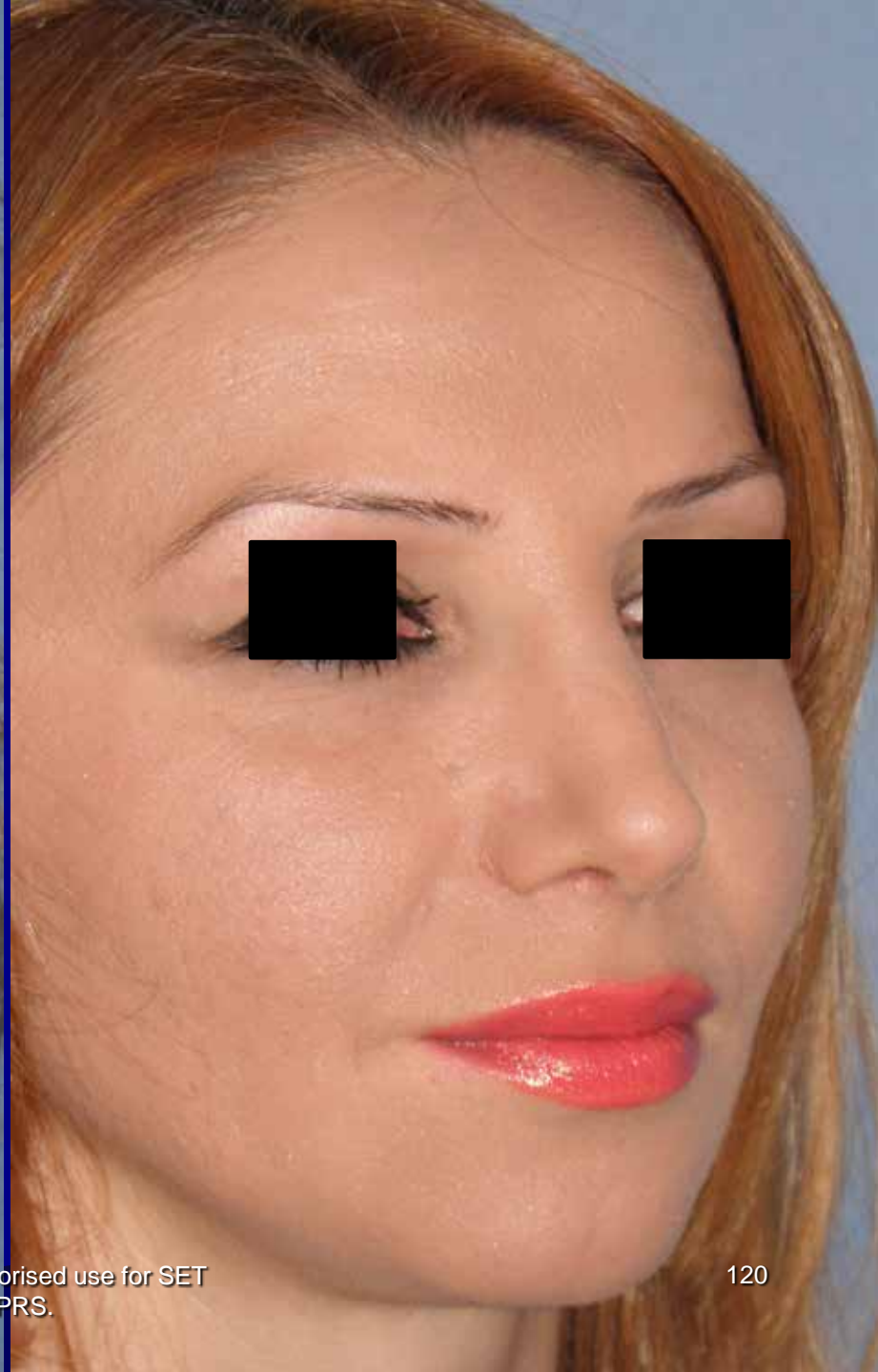
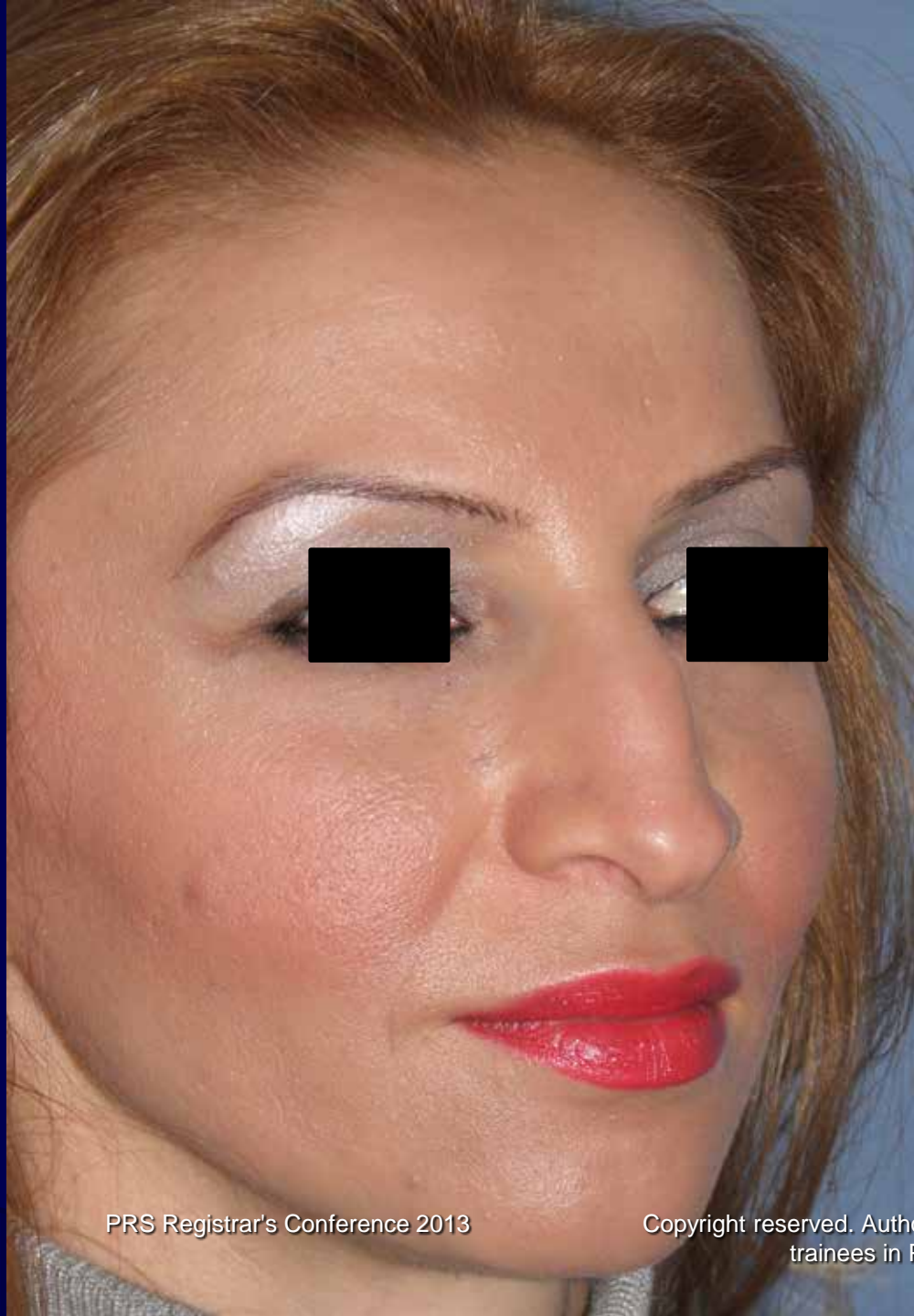












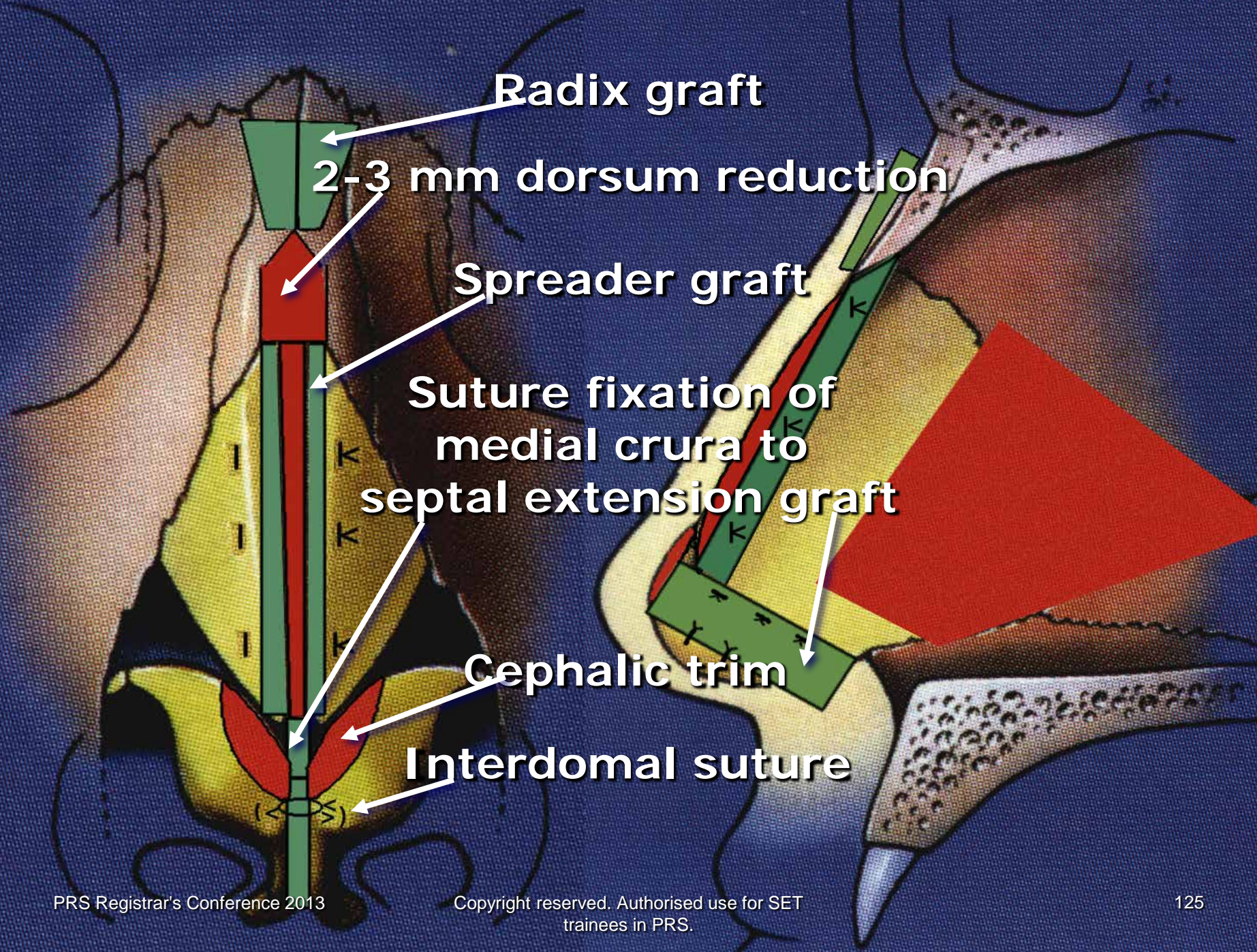


SEPTAL EXTENSION GRAFT









Radix graft

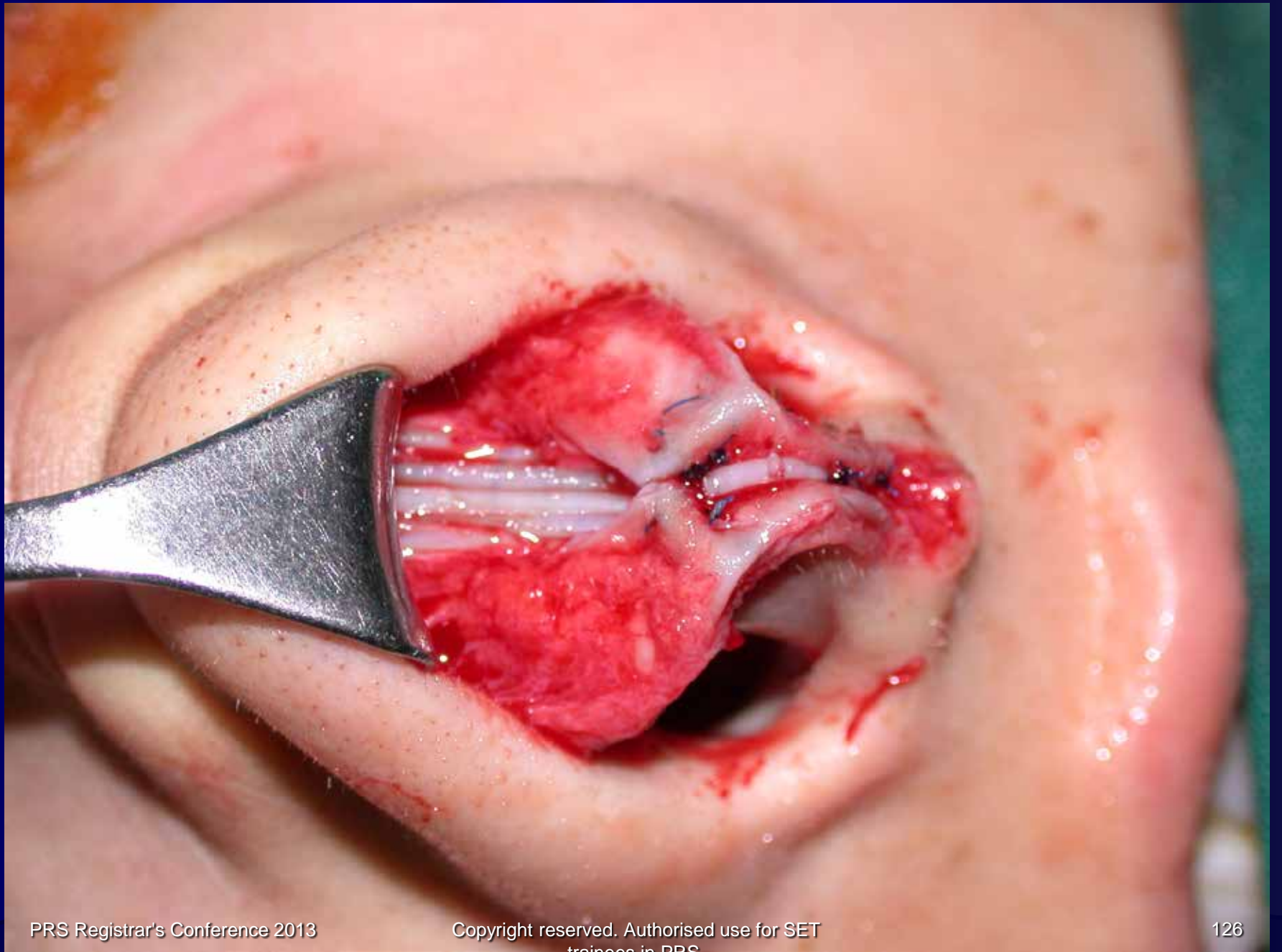
2-3 mm dorsum reduction

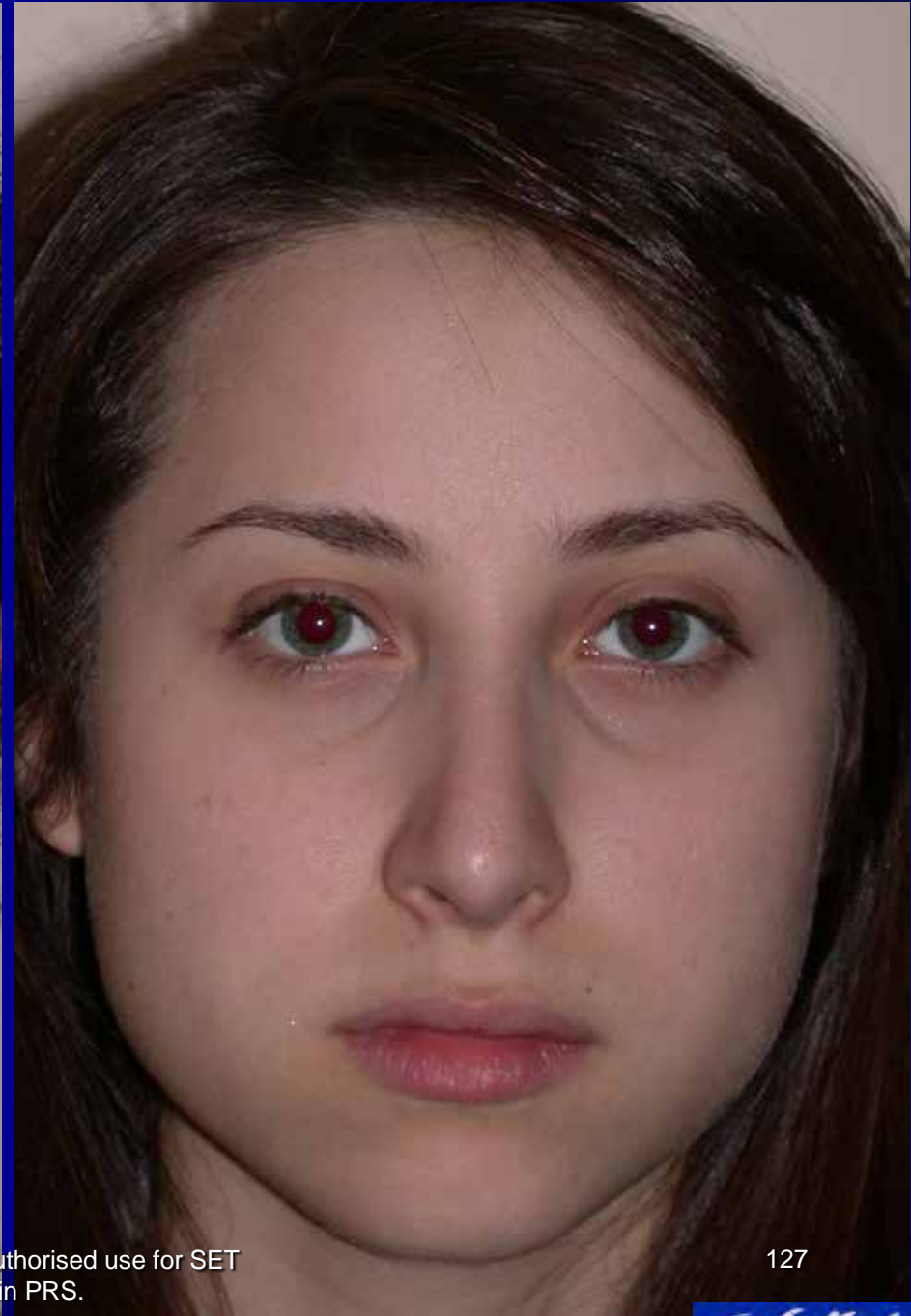
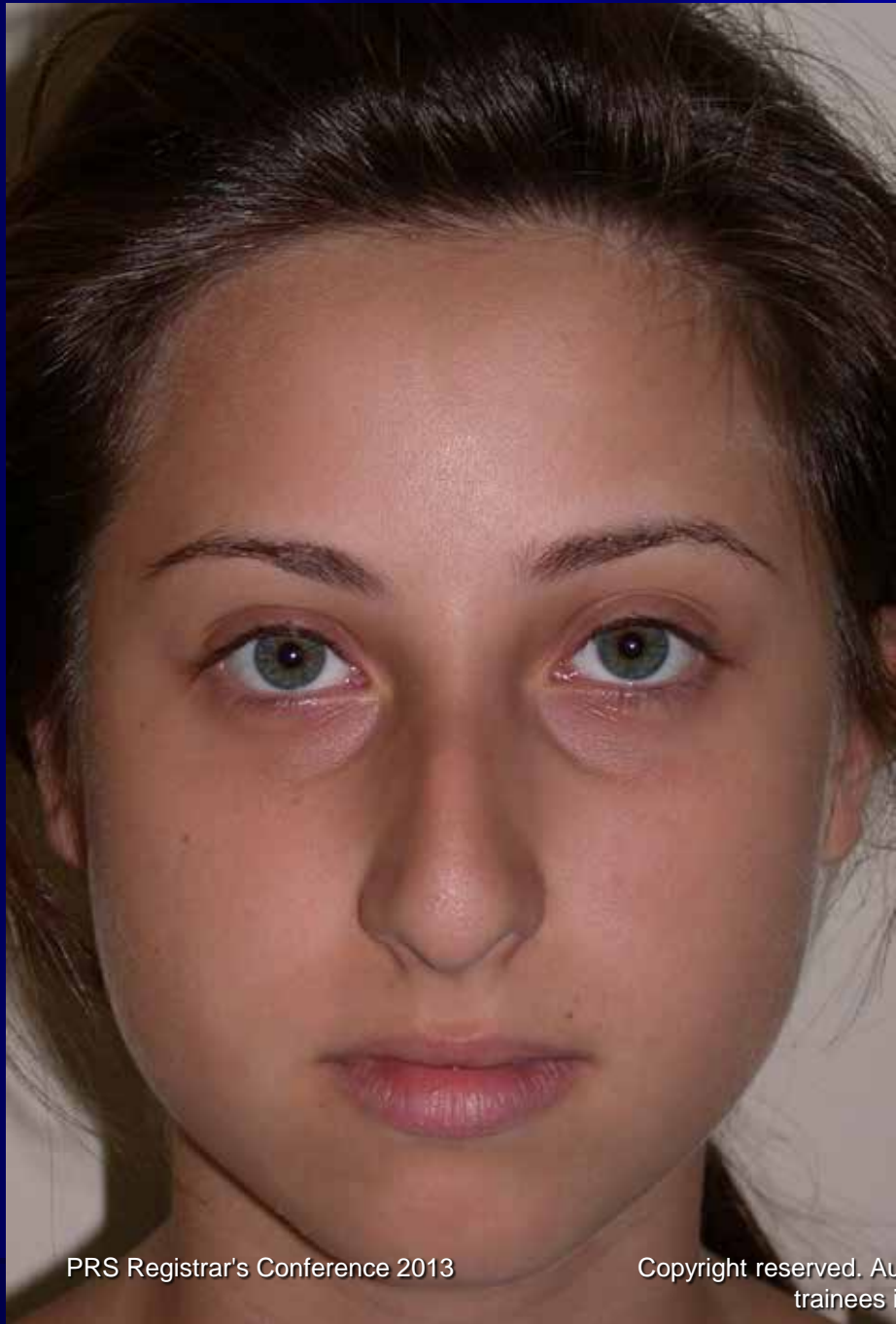
Spreader graft

**Suture fixation of
medial crura to
septal extension graft**

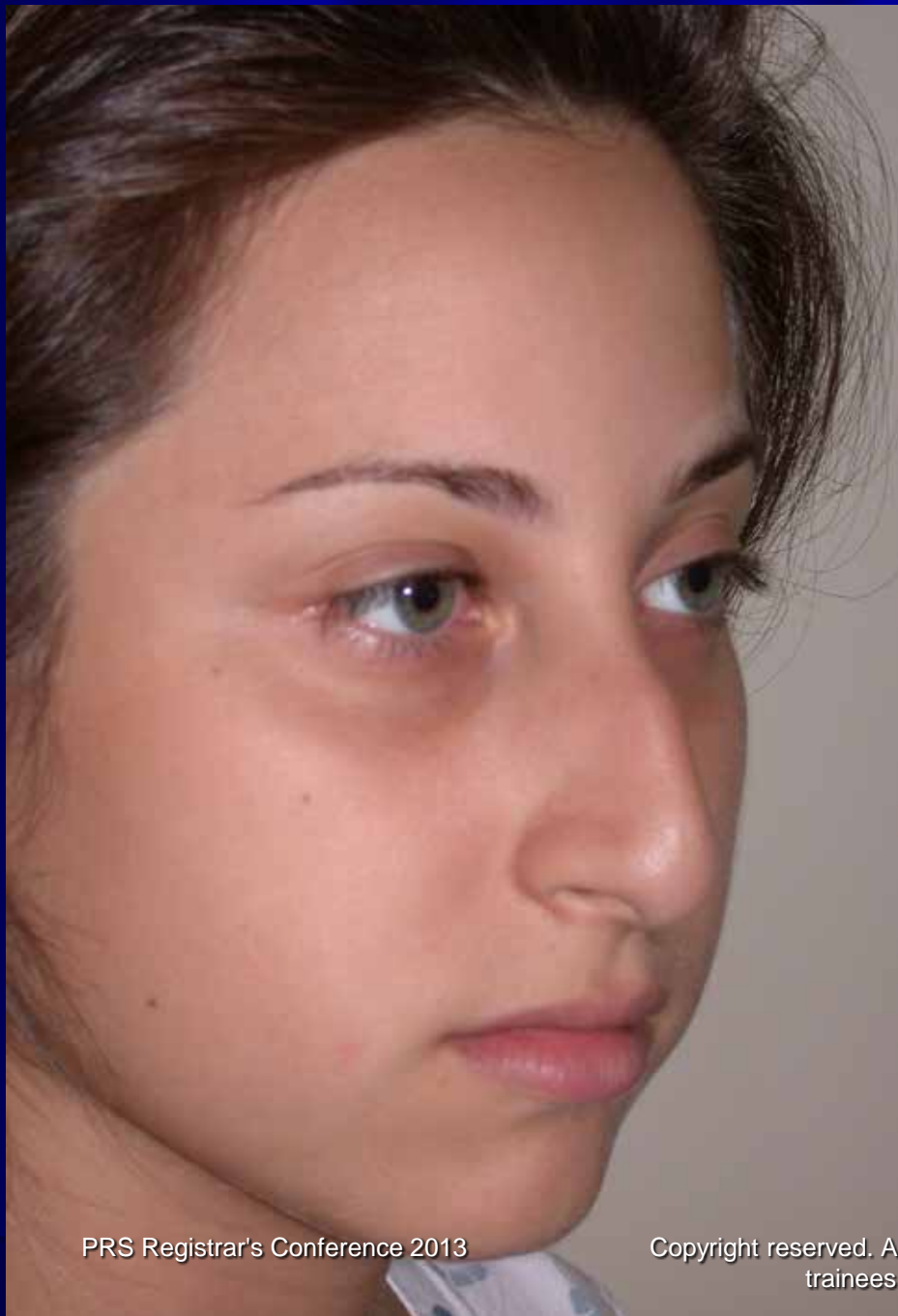
Cephalic trim

Interdomal suture











TIP GRAFTING TO INCREASE TIP PROJECTION

ONLY TIP GRAFT



ONLY TIP GRAFT



ONLY TIP GRAFT



SHIELD TYPE TIP GRAFT









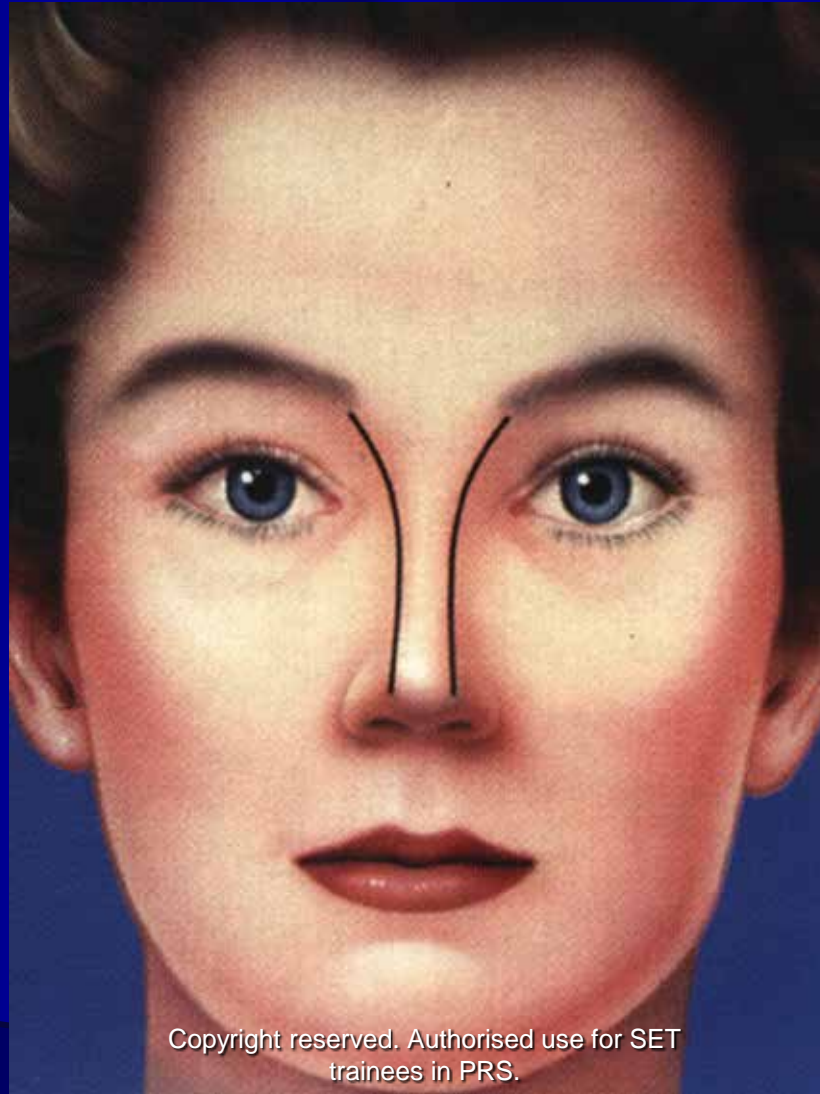




ACHIEVING THE NATURAL FRONTAL VIEW

“Creating an aesthetically pleasing nasal dorsum and anterior appearance is essential to achieve an optimal rhinoplasty outcome...”

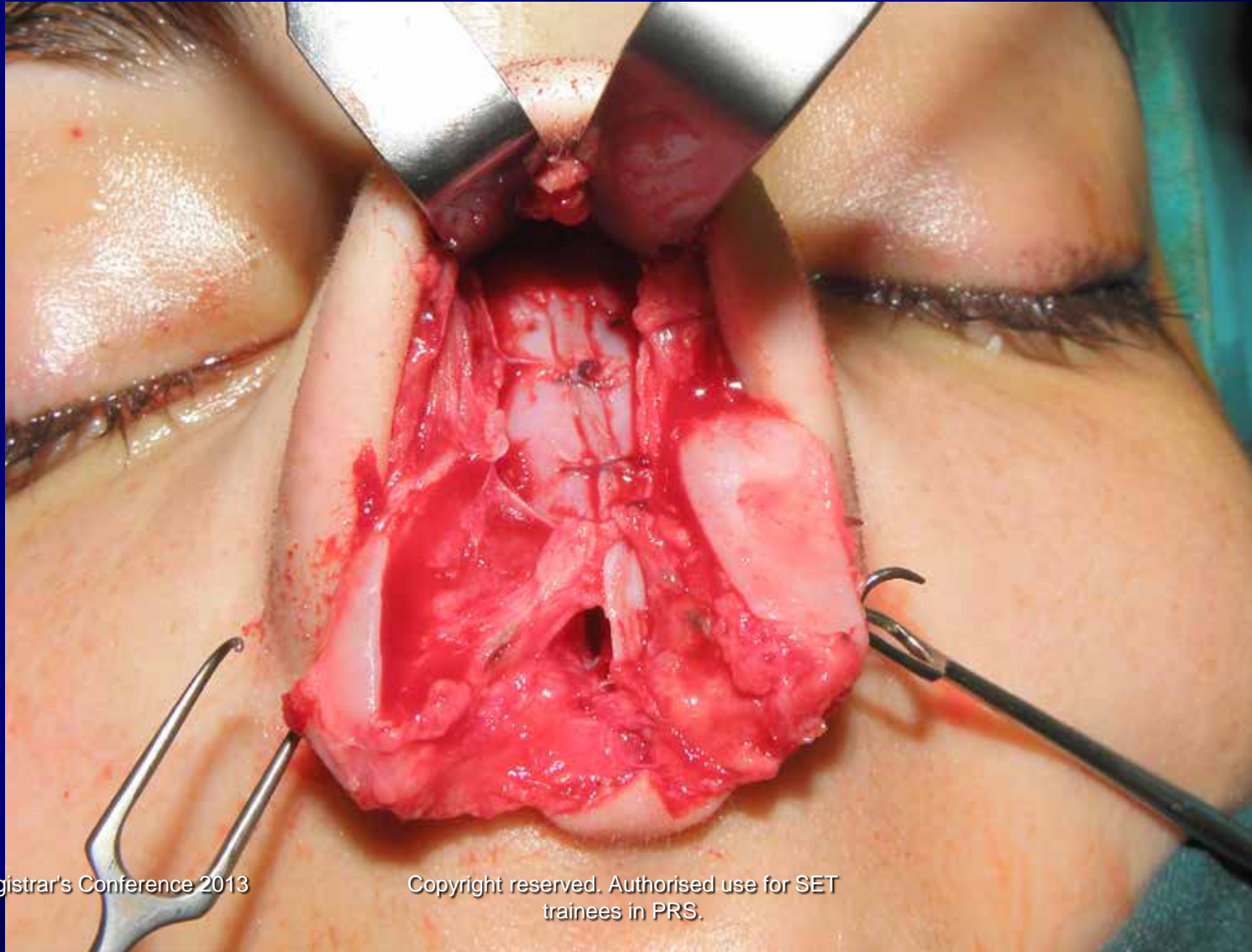
DORSAL AESTHETIC LINES



Restoration Methods of Dorsal Aesthetic Lines

- Upper lateral cartilage preservation (Spreader flap)
- Spreader grafts
- Dorsal onlay graft

SPREADER FLAPS







SURGICAL PLAN

- 3 mm.bony hump reduction
- 4 mm.cartilaginous hump reduction
- 2 mm.caudal septal resection
- Spreader flaps**
- Tip refinement sutures





SPREADER GRAFTS



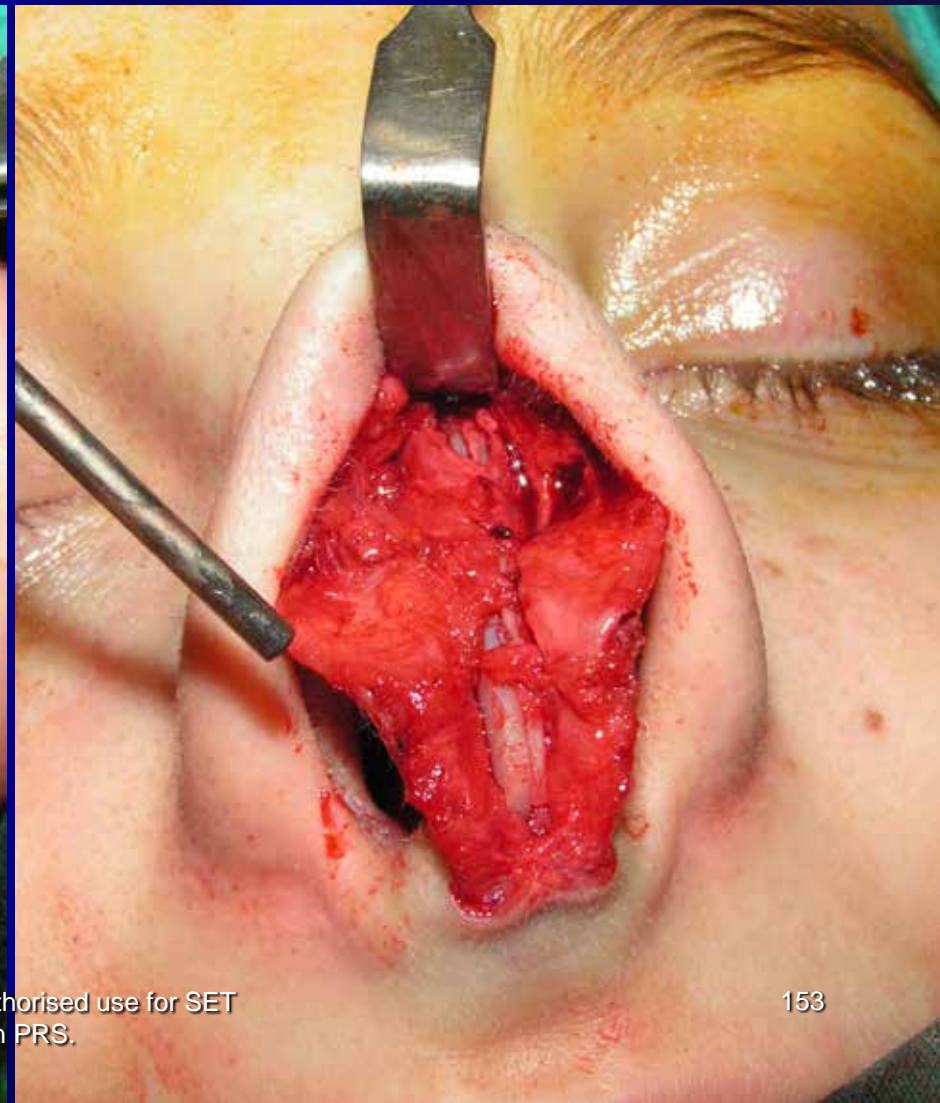
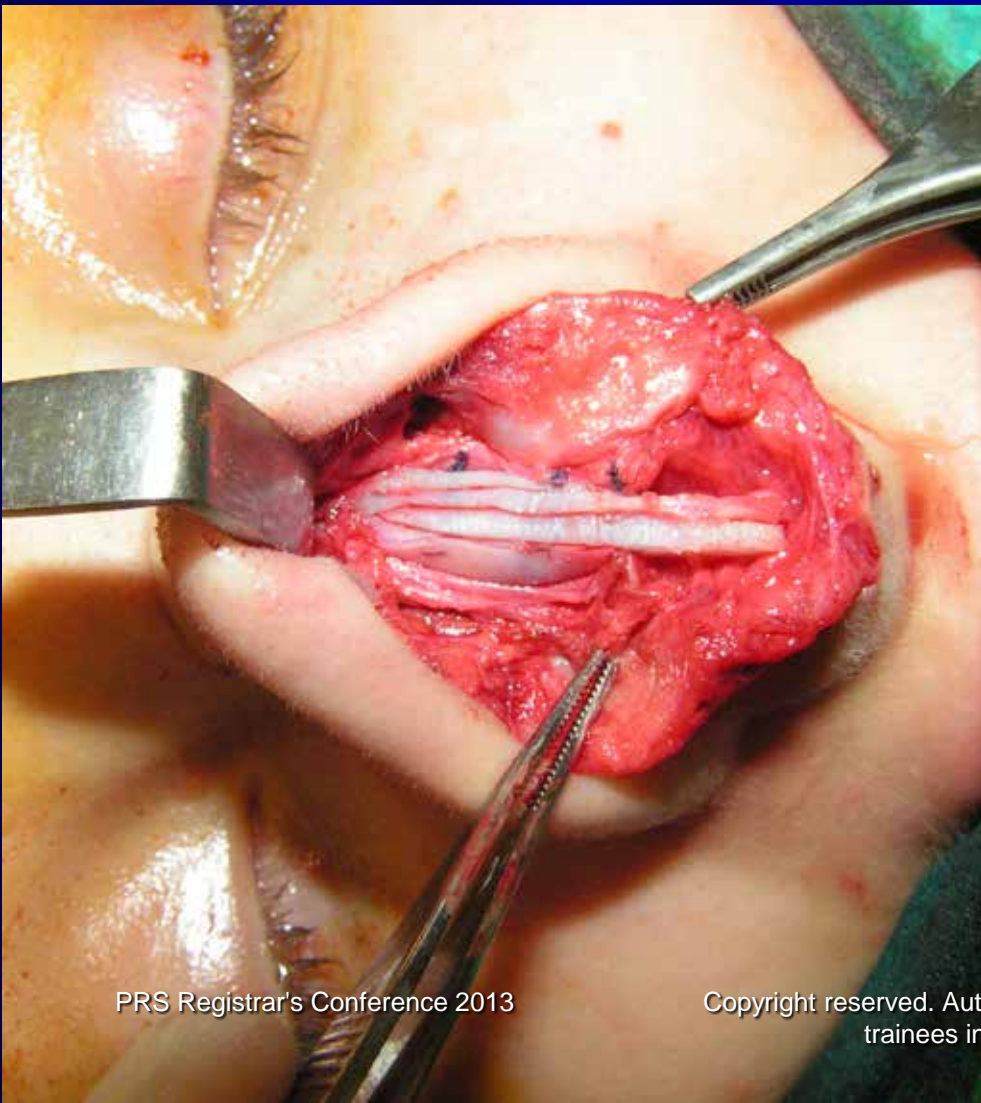
SPREADER GRAFTS

- ▀ **Refinement of dorsal aesthetic lines**
- ▀ **Correction of dorsal deviation**
- ▀ **Correction of internal nasal valve collapse**

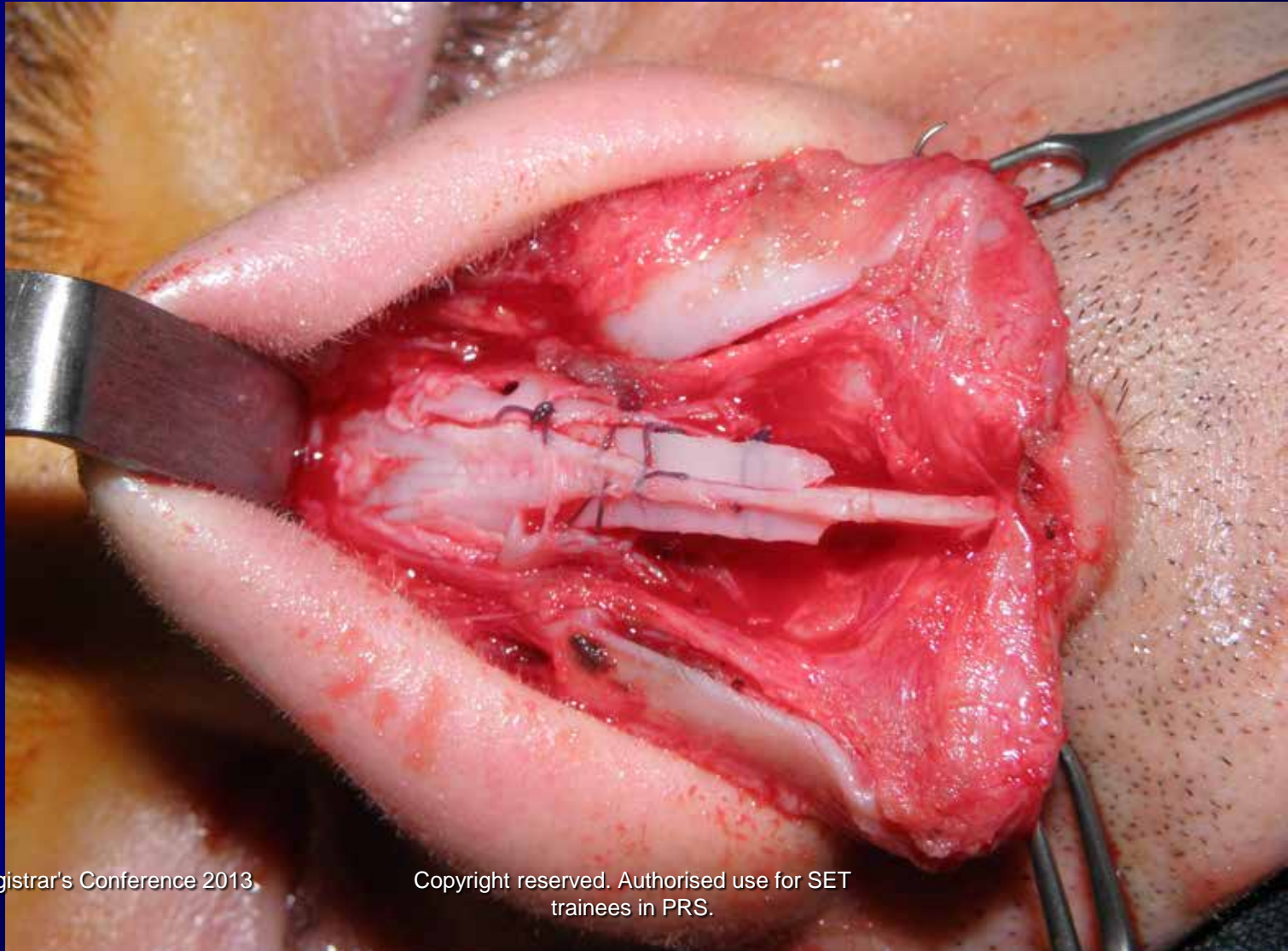
DIFFERENT APPLICATIONS OF SPREADER GRAFTS

- ▀ Unilateral Spreader Graft
- ▀ Asymmetric Spreader Graft
- ▀ Multilayer Spreader Graft
- ▀ Spreader Graft as Septal Extension Graft
- ▀ Spreader Graft for Raising the Dorsum

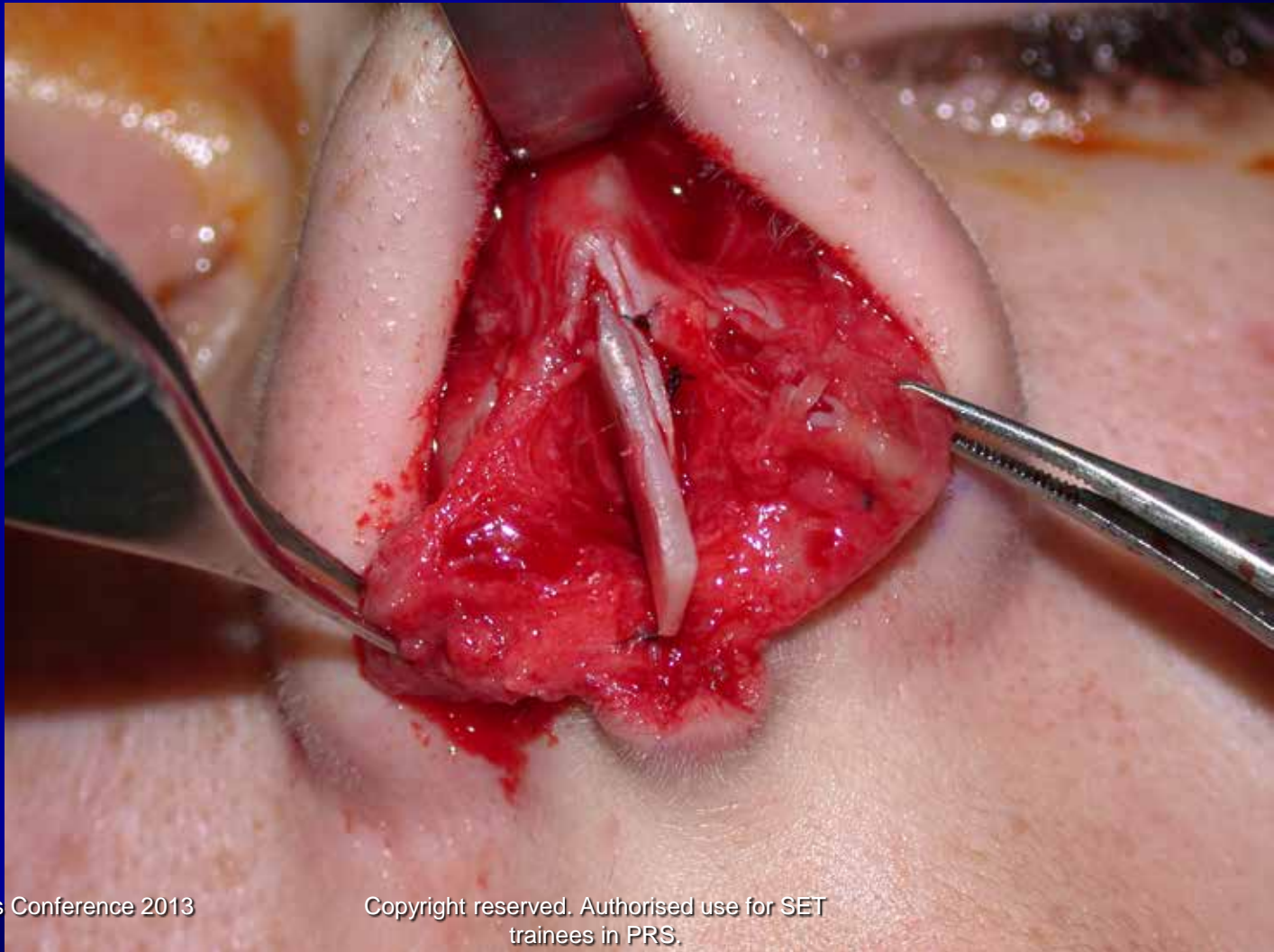
UNILATERAL SPREADER GRAFT



ASYMMETRIC SPREADER GRAFTS



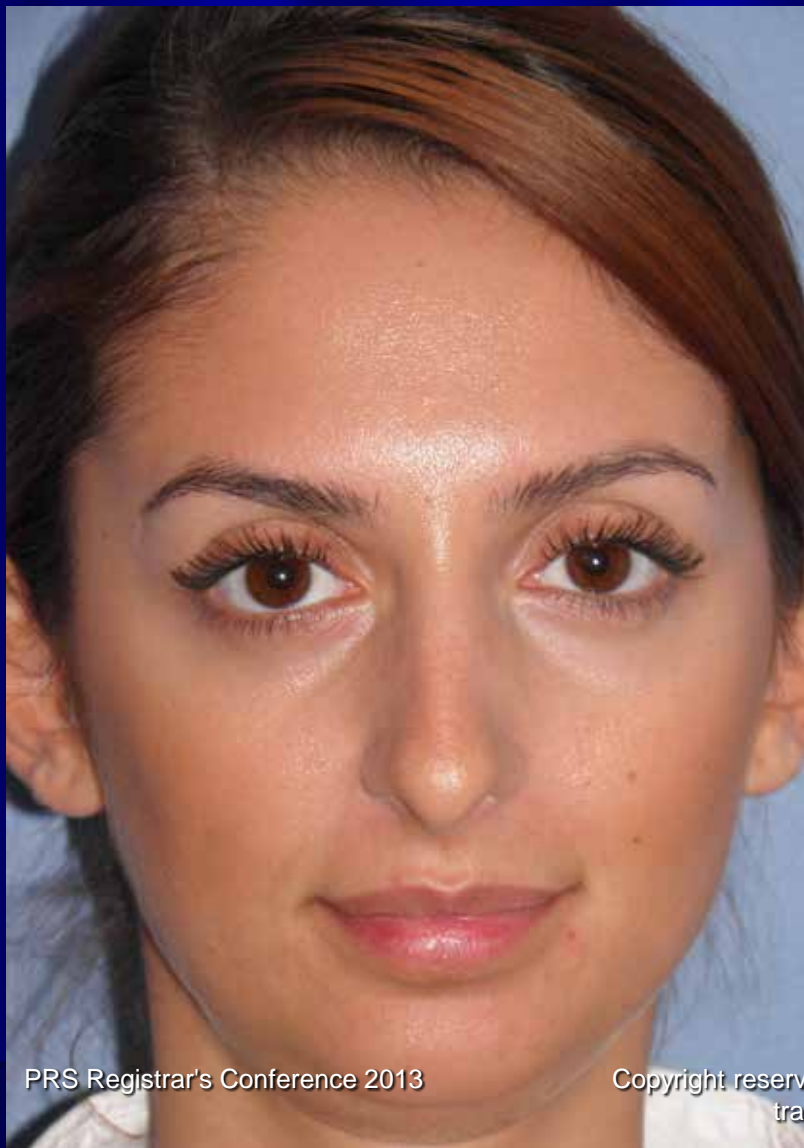
SPREADER AS SEPTAL EXTANSION GRAFT

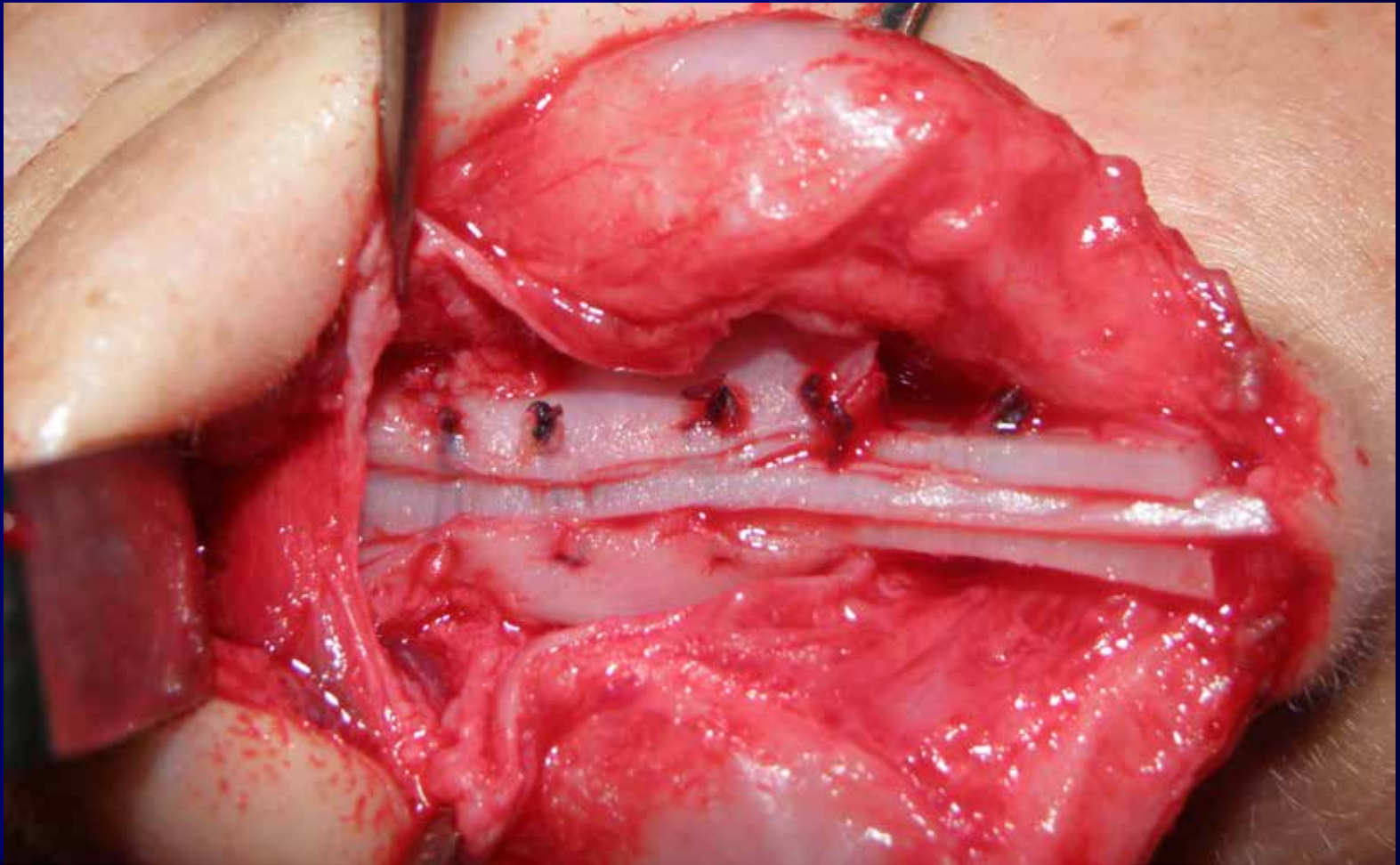


MULTILAYER SPREADER



Refinement of Dorsal Aesthetic Lines







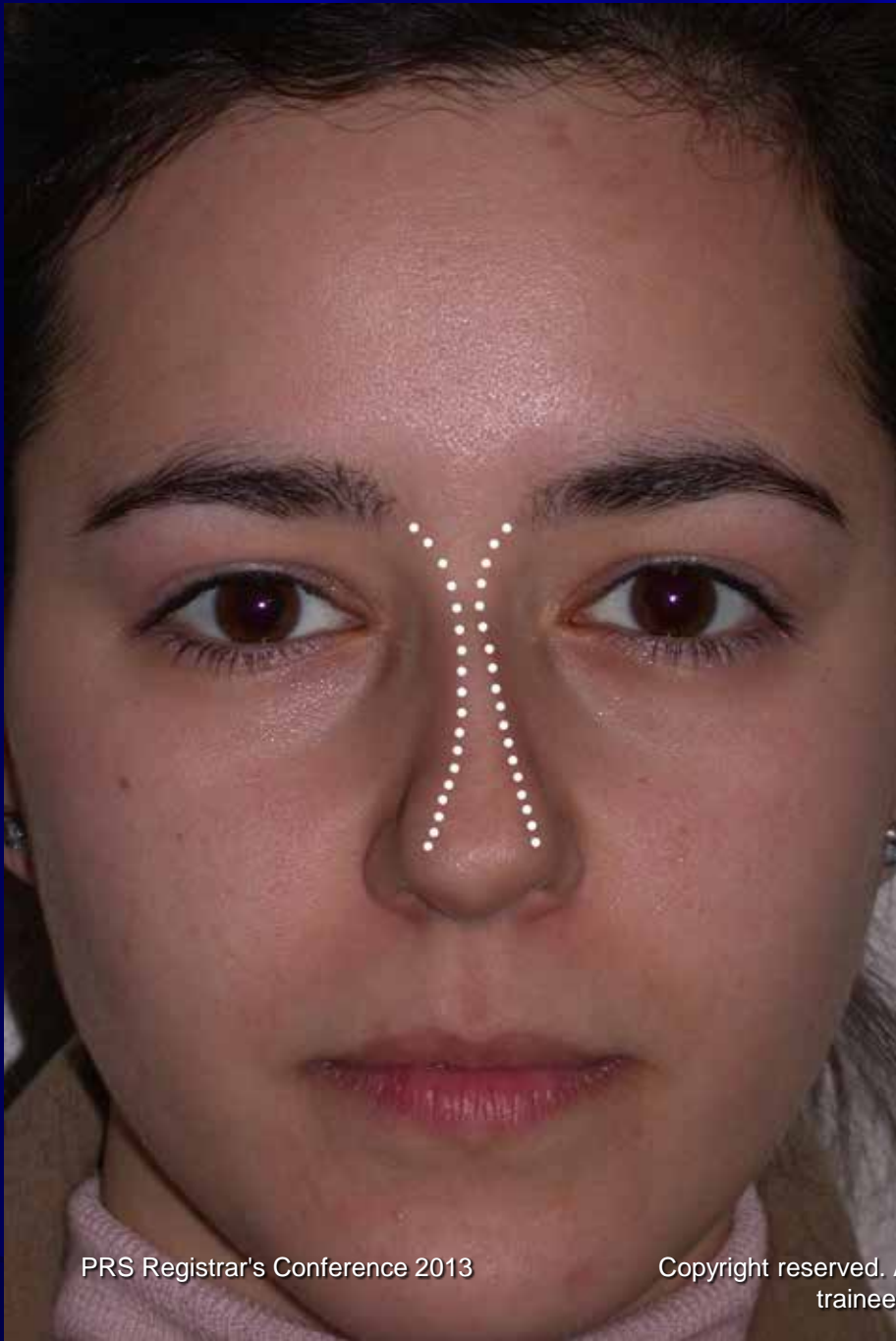


CORRECTION OF SPECIFIC PROBLEMS ON THE FRONTAL VIEW

WIDENING OF NASAL DORSUM

NARROW UPPER AND MIDDLE VAULT BROAD TIP





Asymmetric dorsal aesthetic lines

Low and narrow radix

Dorsal hump

High septal deviation

Narrow middle vault
internal valve collapse

Boxy tip

Cephalic orientation
of lateral crura

Radix augmentation

Medial obl. osteotomies with out fracture

1-2 mm dorsal reduction

High septal scoring

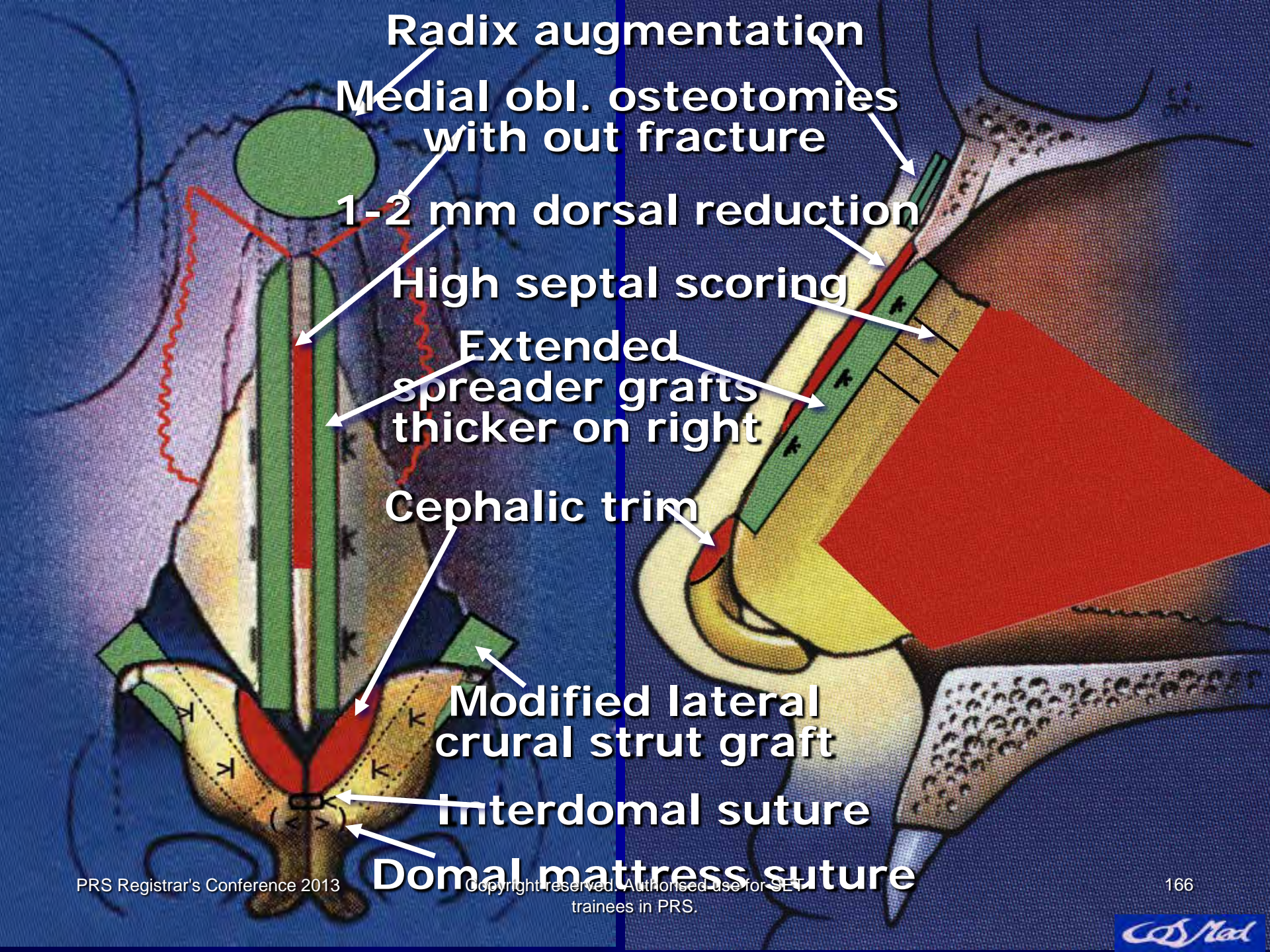
Extended spreader grafts thicker on right

Cephalic trim

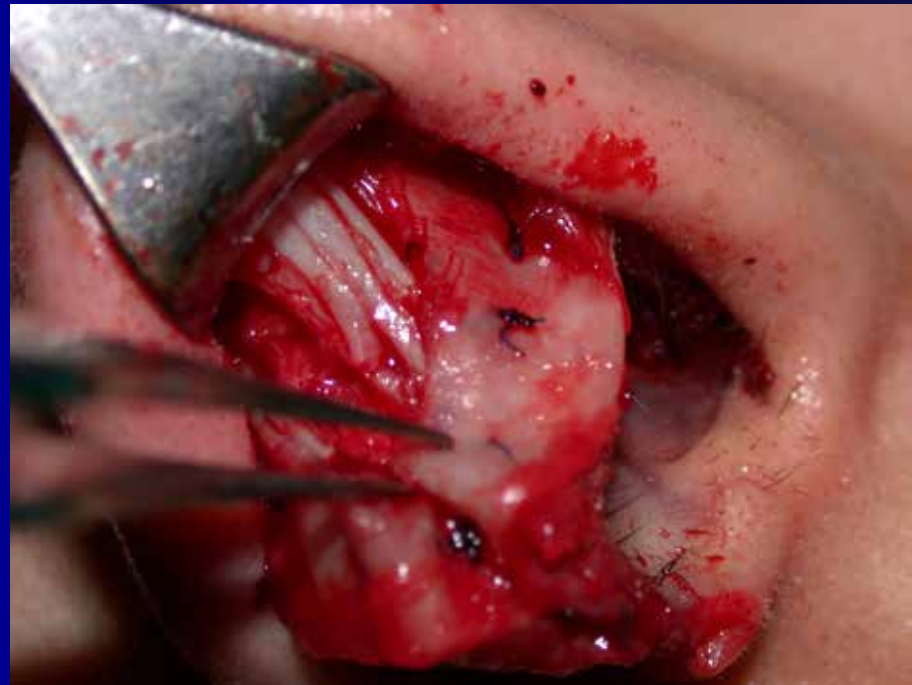
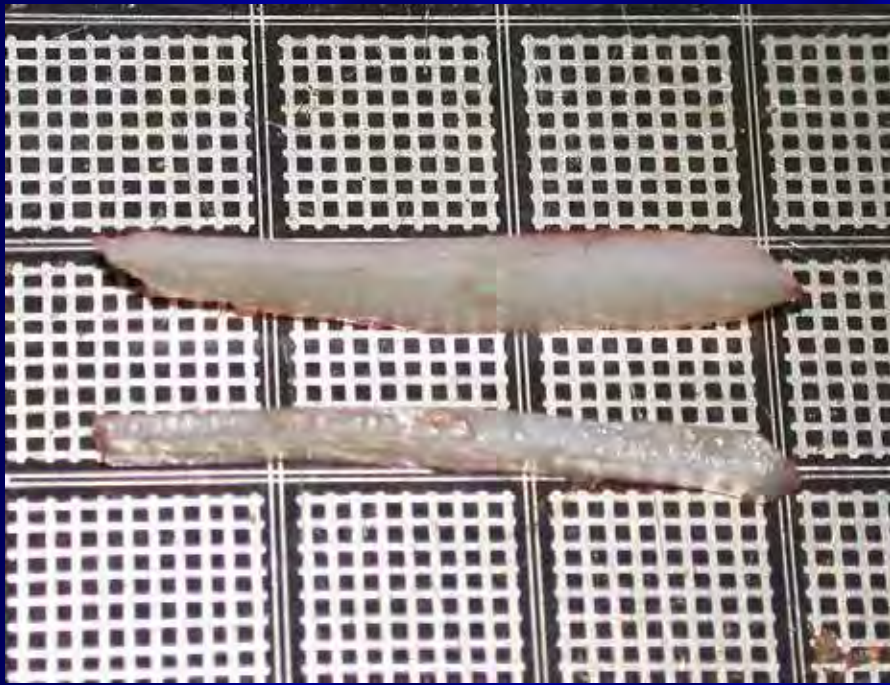
Modified lateral crural strut graft

Interdomal suture

Domal mattress suture











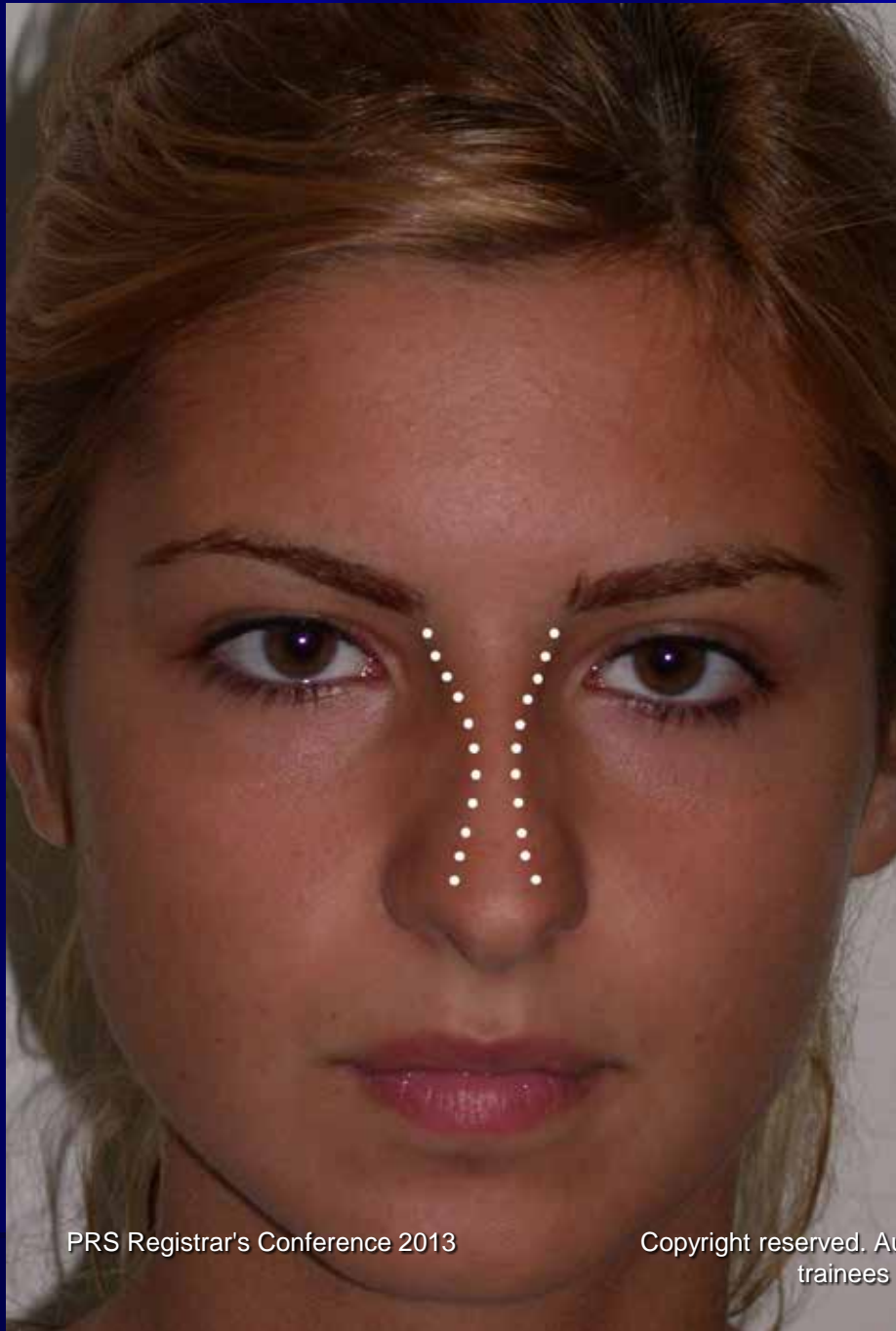




WIDENING OF MIDDLE VAULT

NARROW MIDDLE VAULT WIDE TIP







Narrow aesthetic lines on the middle vault

Wide radix

Dorsal hump

Wide nasal tip

Long nose

2-3 mm dorsum reduction

Low to high osteotomies

Spreader grafts thicker cephalically

1-2 mm caudal septal resection

Suture fixation of medial crura to septum

Cephalic trim

Domal mattress suture



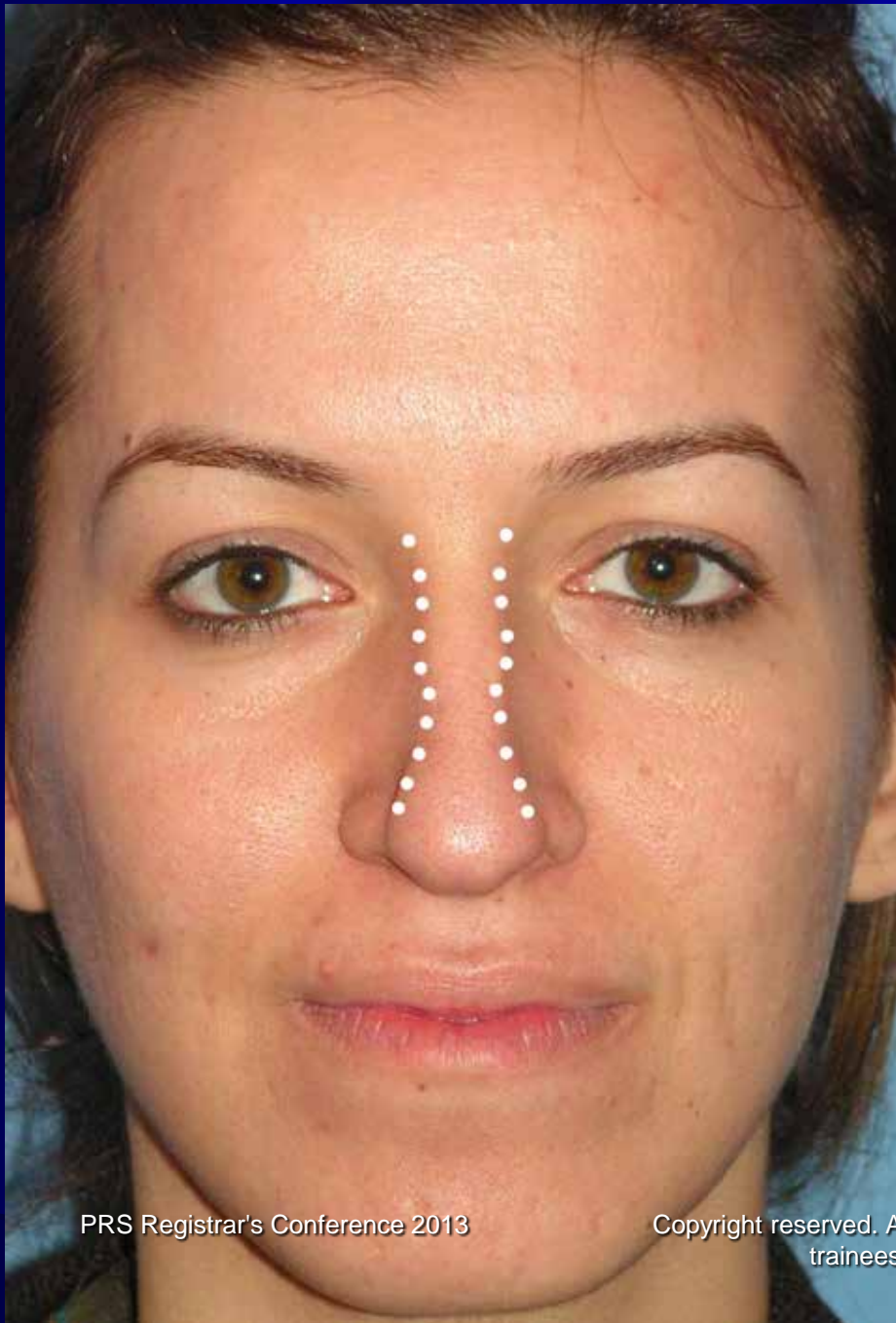






NARROW MIDDLE VAULT WIDE TIP IRREGULAR DORSAL AESTHETIC LINES





Asymmetric dorsal aesthetic lines

Narrow middle vault

Wide nasal tip

Supraalar notching

Dorsal hump

Plunging tip

2 mm dorsal reduction

Median oblique and low to low osteotomies

Autospreaders

Spreaders

Modified lat. crural strut graft

Cephalic trim

Columellar strut

Transdomal suture

Interdomal suture



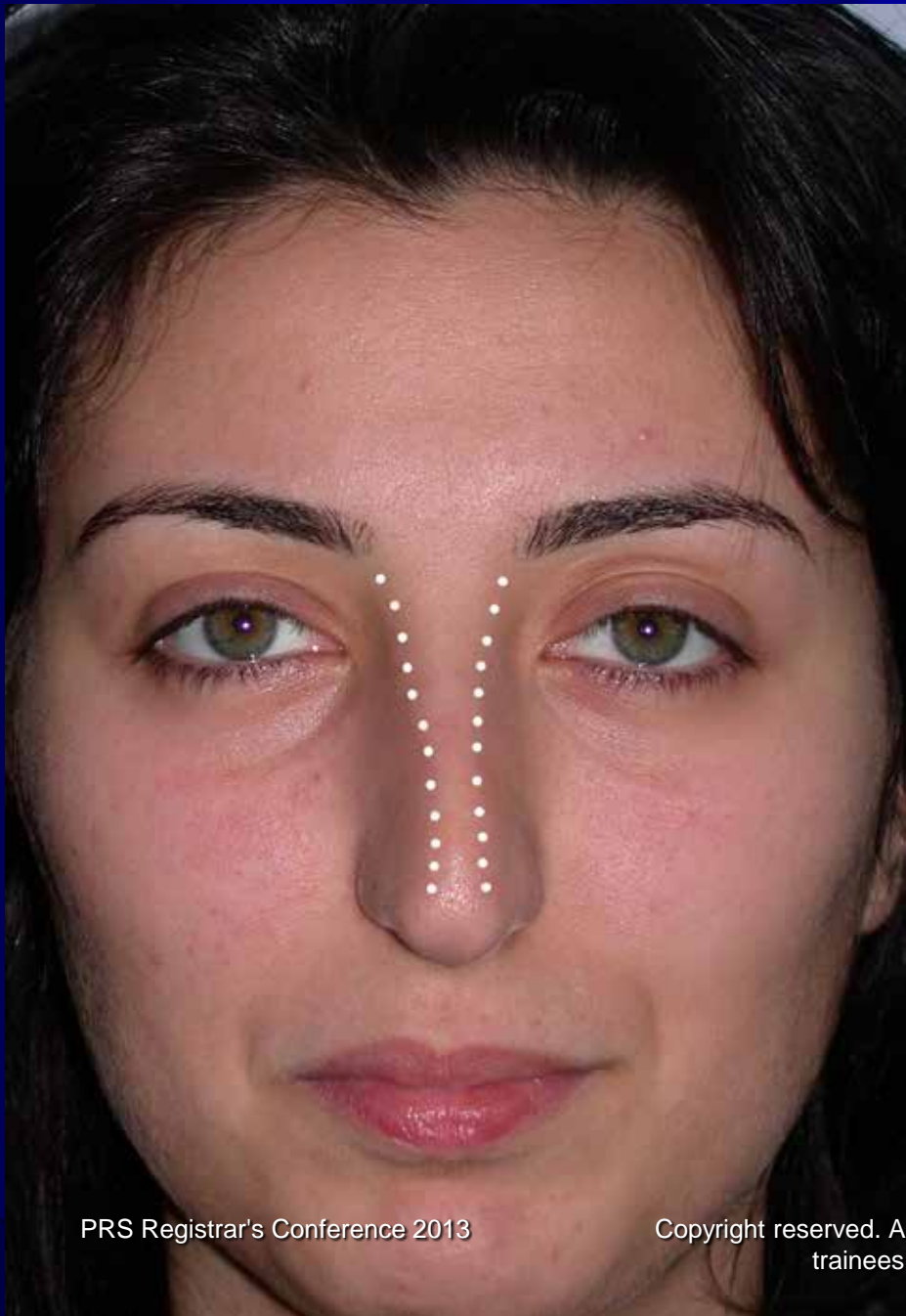






NARROW MIDDLE VAULT AND NARROW TIP





Relatively wide radix

Dorsal hump

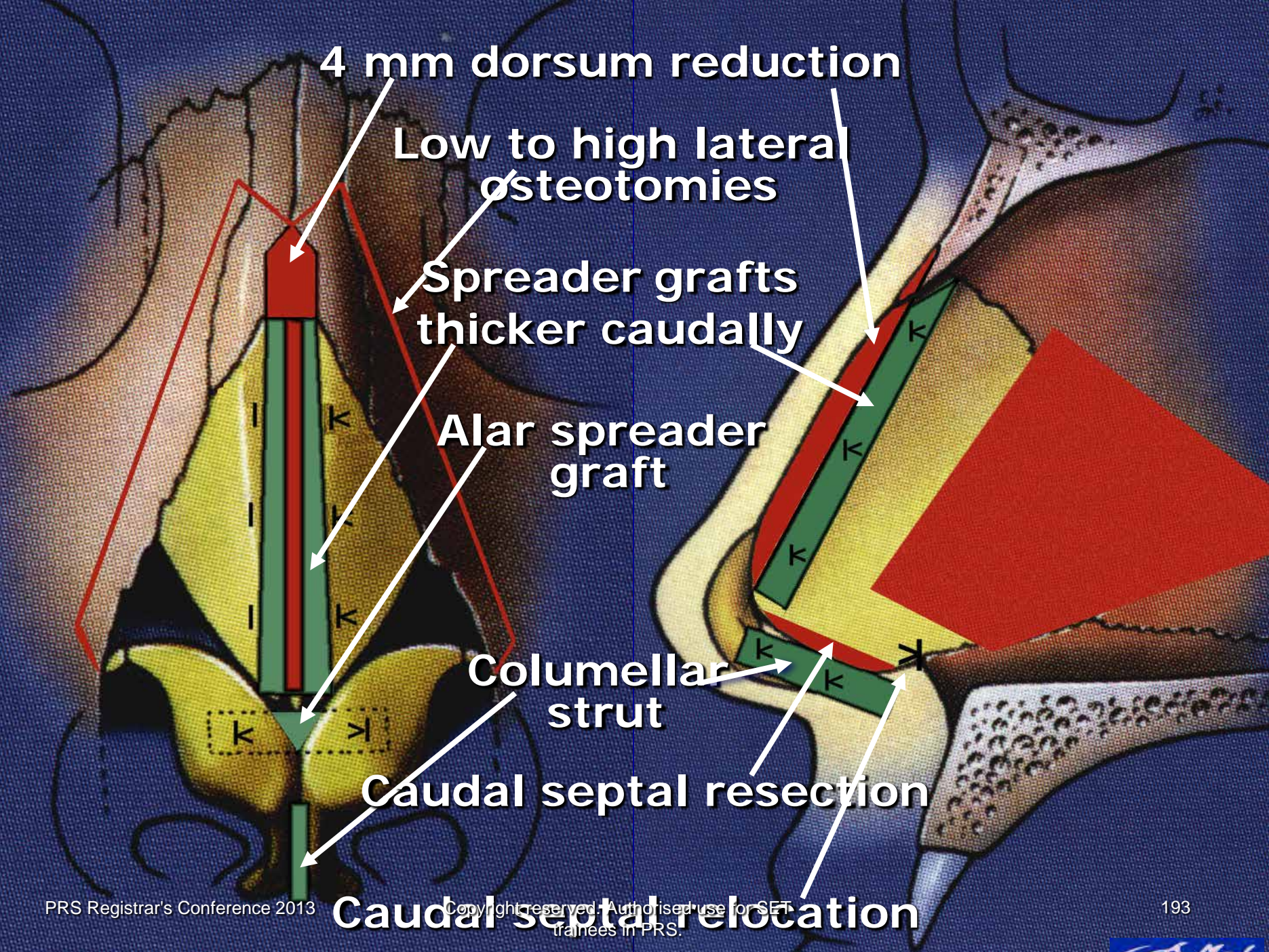
**Narrow middle vault
internal valve collapse**

**Low nasolabial angle
Plunging tip**

**Narrow tip
and nostrils**

**Caudal
septal deviation**

Long nose



4 mm dorsum reduction

Low to high lateral osteotomies

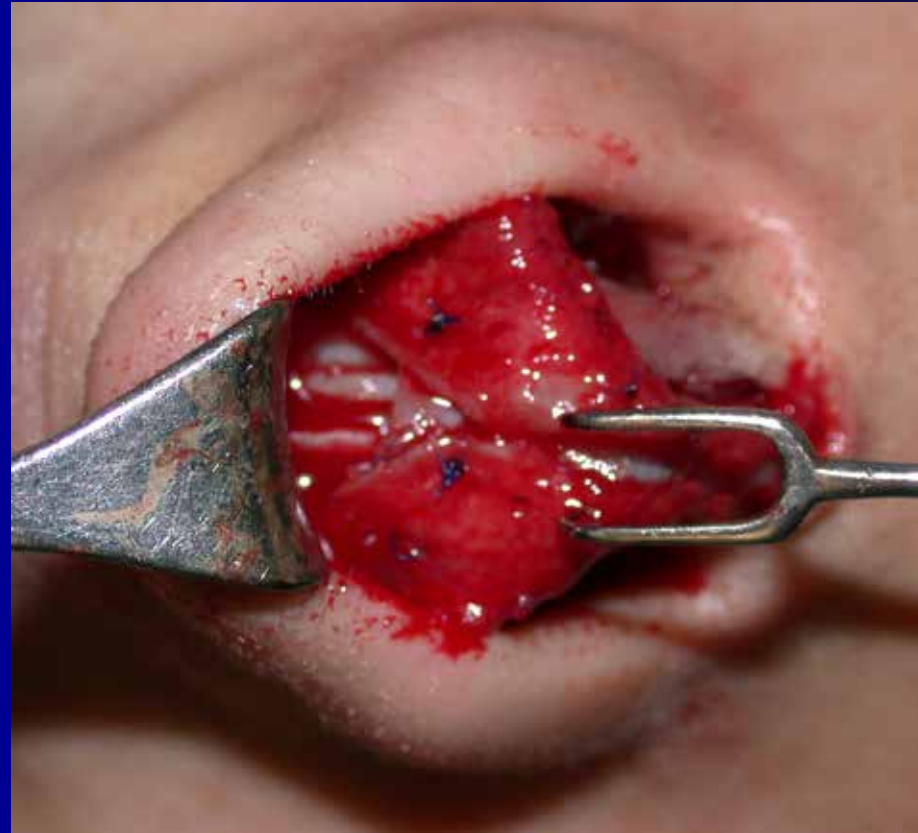
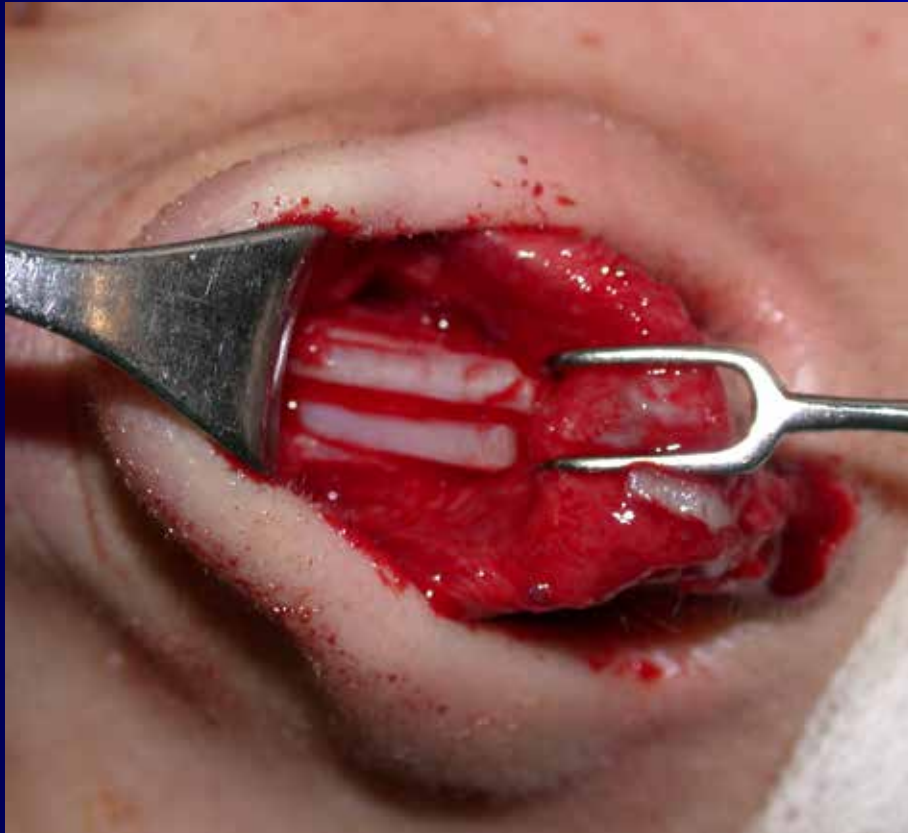
Spreader grafts thicker caudally

Alar spreader graft

Columellar strut

Caudal septal resection

Caudal septal relocation











NARROWING OF NASAL DORSUM

BROAD BONY VAULT BROAD TIP



One layer radix graft

Medial oblique osteotomies



Low to low lateral osteotomies

Minimal cartilaginous hump resection

Cephalic trim

Transdomal sutures







BROAD BONY VAULT





Wide bony pyramid

Wide dorsal aesthetic lines

Minimally broad tip



Medial oblique osteotomies

**Low to low
external lateral
osteotomies**

**Transdomal
sutures**

