VTOS

Sindrome di Paget-Schroetter

L. TRAINA

SOCIETÀ ITALIANA DI FLEBOLINFOLOGIA

30°

CONGRESSO NAZIONALE DEL TRENTENNALE

FERRARA
Palazzo della Racchetta
20 - 21 - 22 ottobre 2016

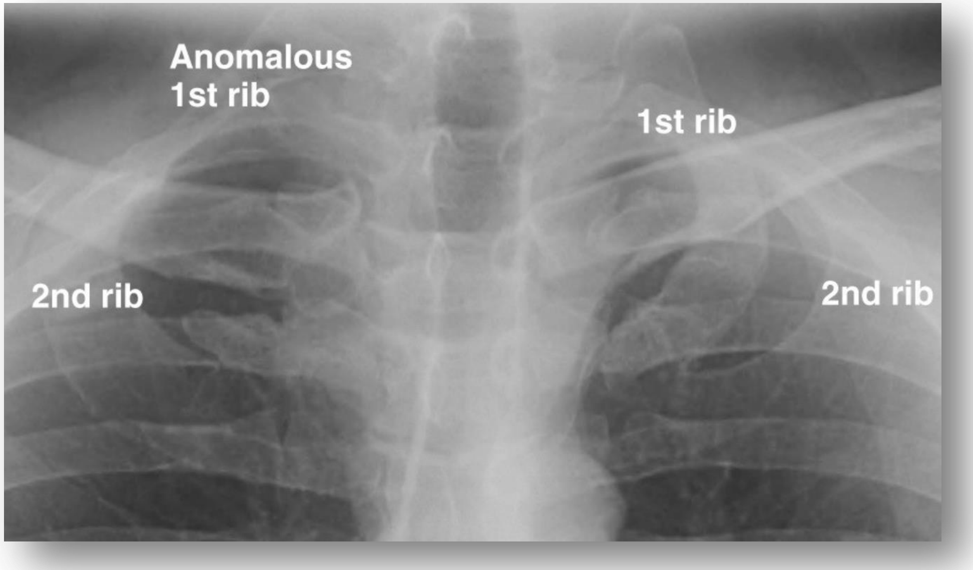
Department of Surgery,
Vascular & Endovascular Surgery,
S. Anna University Hospital, Ferrara
Dott. F. Mascoli

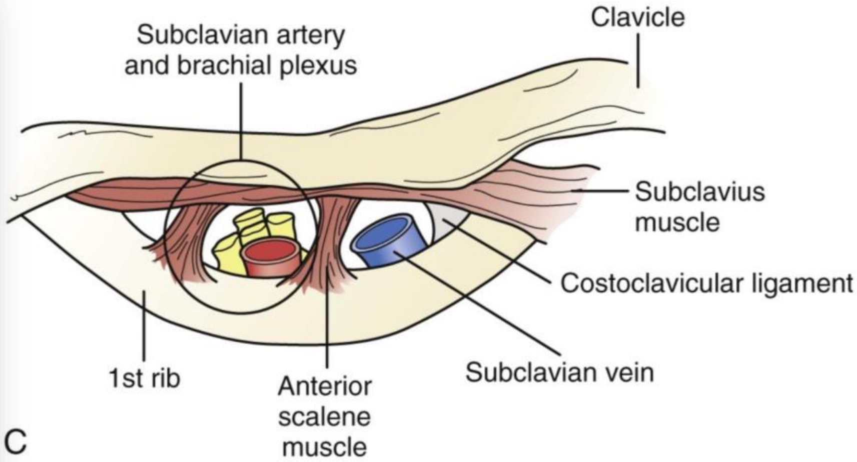
UNIVERSITÀ
DEGLI STUDI
DI FERRARA
- EX LABORE FRUCTUS -

TOS NEUROGENA

TOS VENOSA

TOS ARTERIOSA


Anomalous
1st rib
1st rib
2nd rib
2nd rib


Clavicle
Subclavian artery
and brachial plexus
Subclavius
muscle
Costoclavicular ligament
Subclavian vein
1st rib
Anterior
scalene
muscle
C

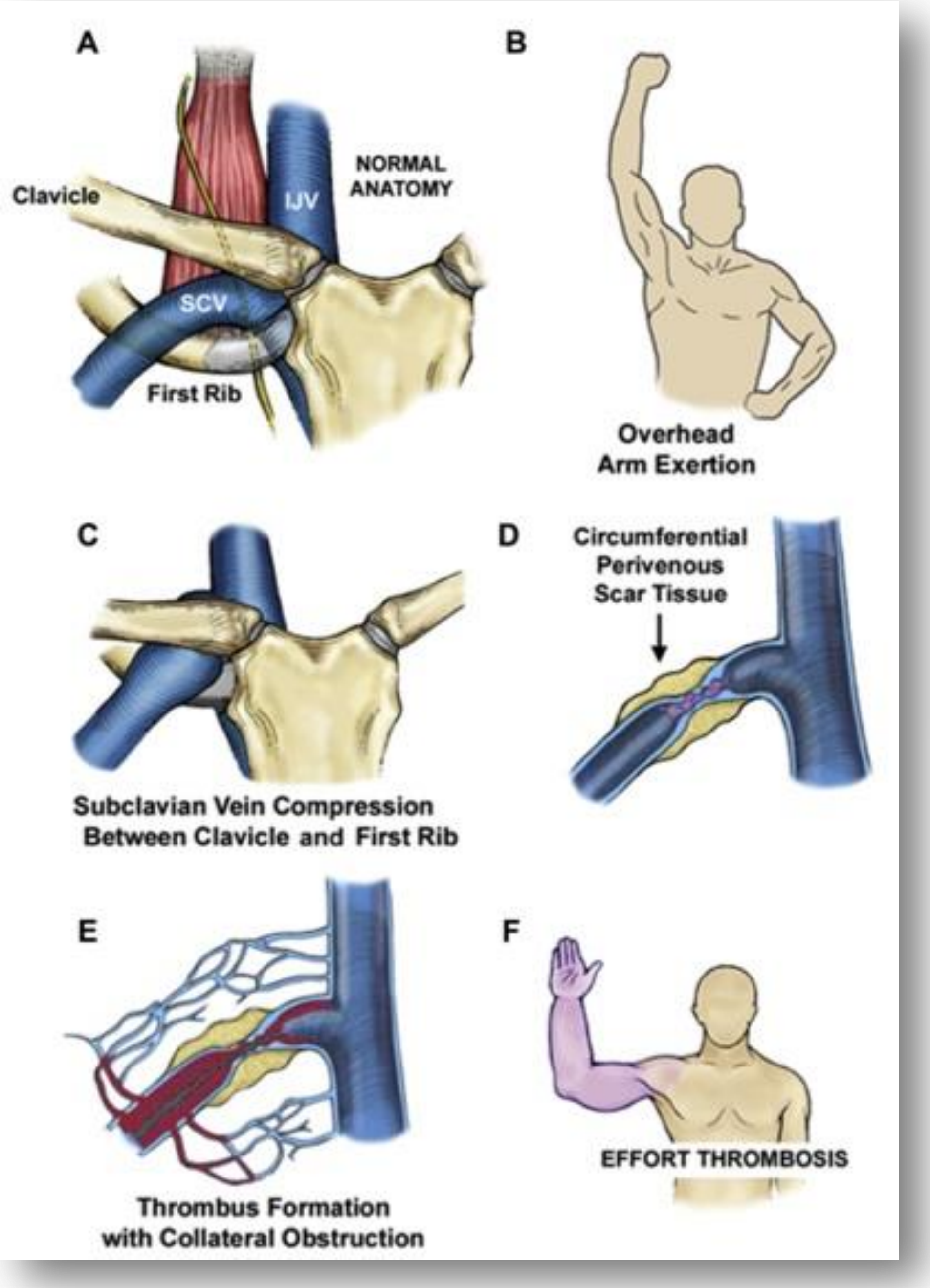
TVP ARTI SUPERIORI

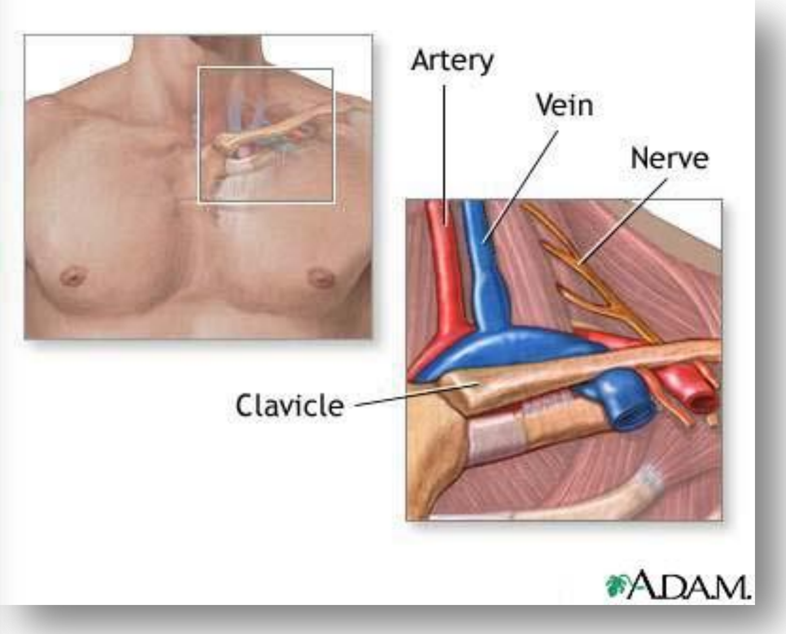
- 4-10% di tutte le TVP
- 70% dei casi si tratta di una forma secondaria:
    - Posizionamento di CVC o Pacemaker
    - Sdr. Paraneoplastica
    - Trombofilia
- 20-30% idiopatica per cui si deve sospettare VTOS
- …in genere SOTTOSTIMATA mentre una diagnosi precoce è fondamentale per un trattamento corretto ed efficace

TOS VENOSA
(Sindrome di Paget-Schröetter)

TROMBOSI ACUTA DELLA VENA SUCCLAVIA

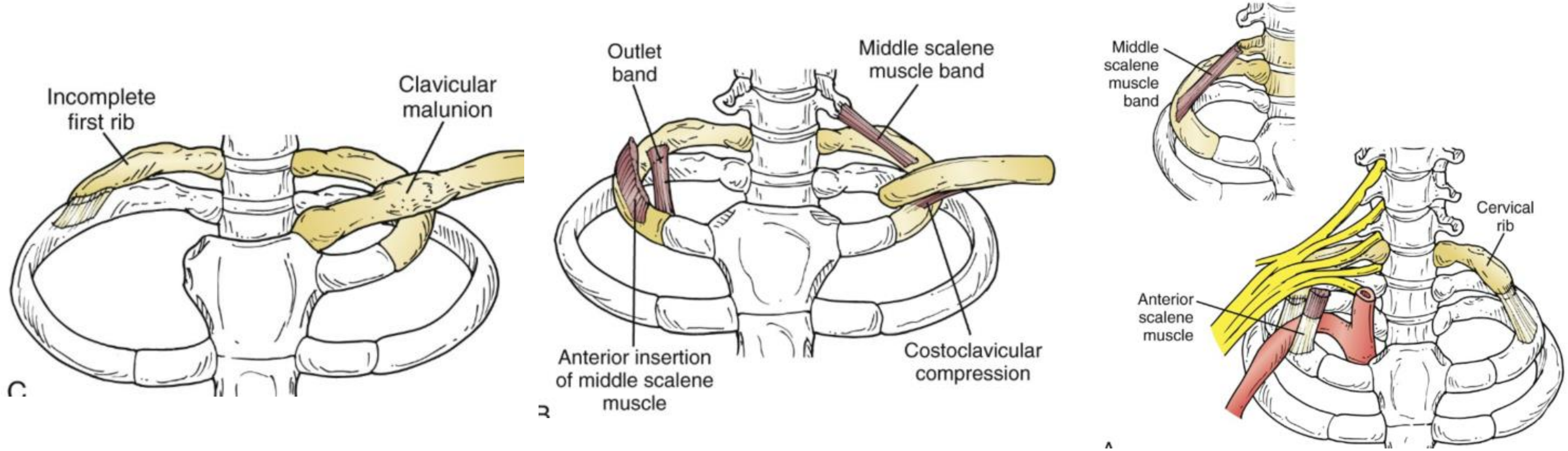
- causata da compressione estrinseca della vena stessa da parte di strutture nello stretto toracico
- comunemente si presenta in soggetti giovani che praticano frequente e ripetitiva attività dell’arto superiore
- rappresenta meno del 10% di tutte le TOS (neurologica 90%, venosa < 10%, arteriosa 1%)


A
Clavicle
IJV
NORMAL ANATOMY
SCV
First Rib
B
Overhead Arm Exertion
C
Subclavian Vein Compression Between Clavicle and First Rib
D
Circumferential Perivenous Scar Tissue
E
Thrombus Formation with Collateral Obstruction
F
EFFORT THROMBOSIS


Artery
Vein
Nerve
Clavicle
A.D.A.M.

SE STRUTTURA OSSEA ANOMALA: ASPORTAZIONE DELLA SUDDETTA STRUTTURA

- COSTA CERVICALE
- PRIMA COSTA ANOMALA
- ESOSTOSI
- CALLO DA FRATTURA


Incomplete first rib
Clavicular malunion
C
Outlet band
Middle scalene muscle band
Anterior insertion of middle scalene muscle
Costoclavicular compression
B
Middle scalene muscle band
Cervical rib
Anterior scalene muscle
A

SE STRUTTURA OSSEA ANOMALA: ASPORTAZIONE DELLA SUDDETTA STRUTTURA

- COSTA CERVICALE
- PRIMA COSTA ANOMALA
- ESOSTOSI
- CALLO DA FRATTURA

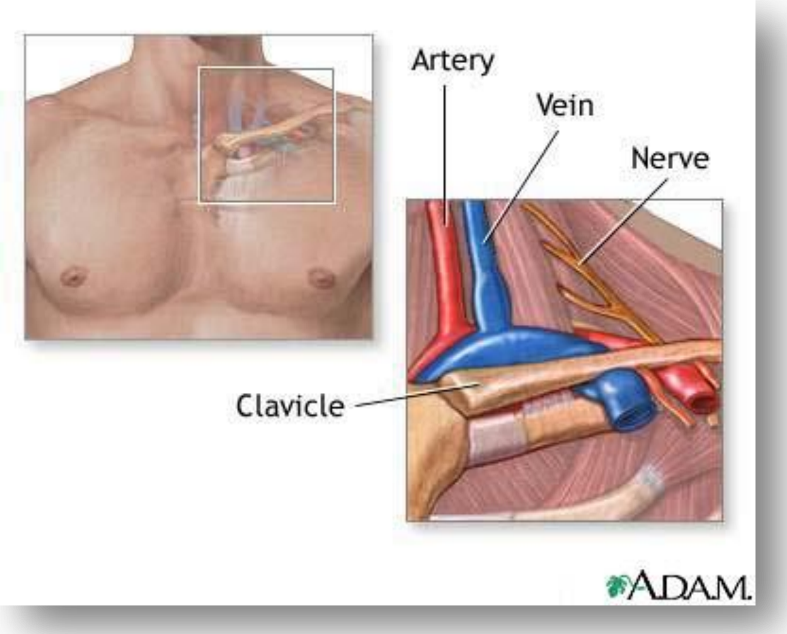
TUTTAVIA NELLA MAGGIOR PARTE DEI PAZIENTI L'IMPALCATURA SCHELETRICA DELLO STRETTO TORACICO SUPERIORE E' NORMALE!

↓

DIFFERENTI APPROCCI CHIRURGICI

TRATTAMENTO CHIRURGICO TOS VENOSA

(Sindrome di Paget-Schroetter)


Artery
Vein
Nerve
Clavicle
ADAM.

- FIBRINOLISI

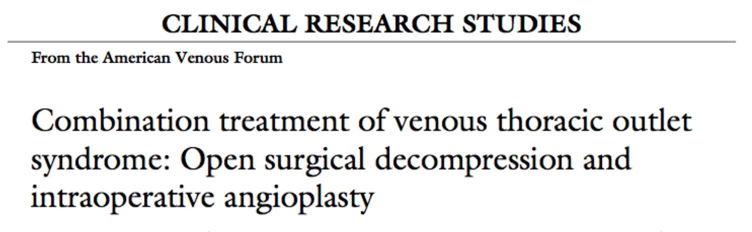
- DECOMPRESSIONE CHIRURGICA+PTA INTRAOPERATORIA

- TERAPIA ANTIAGGREGANTE© o 3 mesi ti TAO

- Ripristino della pervietà venosa
    - Trombolisi con UK o r-tPA da 24 a 72h
    - 75% di ricanalizzazioni
    - La sola anticoagulazione causa disablità nel 78% dei casi!

- Risoluzione della compressione venosa estrinseca
    - decompressione dello stretto toracico (resezione I costa)
    - venolisi (asportazione della cicatrice perivenosa)

- Correzione della stenosi venosa intrinseca
    - PTA o Angioplastica con patch (35%)

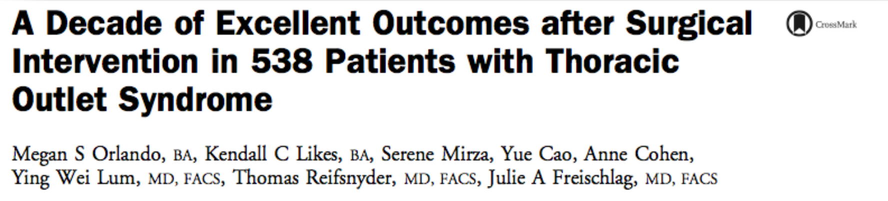


CLINICAL RESEARCH STUDIES

From the American Venous Forum

Combination treatment of venous thoracic outlet syndrome: Open surgical decompression and intraoperative angioplasty

Darren B. Schneider, MD,[a,b] Paul J. Dimuzio, MD,[c] Niels D. Martin, MD,[c] Roy L. Gordon, MD,[b] Mark W. Wilson, MD,[b] Jeanne M. Laberge, MD,[b] Robert K. Kerlan, MD,[b] Charles M. Eichler, MD,[a] and Louis M. Messina, MD,[a] *San Francisco, Calif; and Philadelphia, Pa*



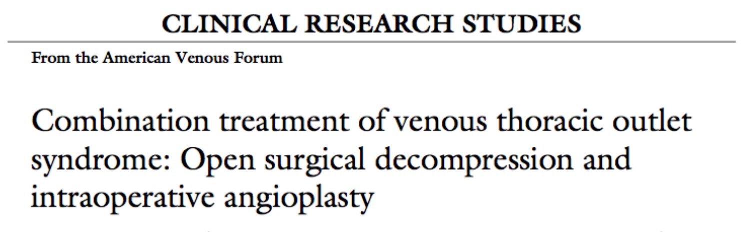
A Decade of Excellent Outcomes after Surgical Intervention in 538 Patients with Thoracic Outlet Syndrome

Megan S Orlando, BA, Kendall C Likes, BA, Serene Mirza, Yue Cao, Anne Cohen, Ying Wei Lum, MD, FACS, Thomas Reifsnyder, MD, FACS, Julie A Freischlag, MD, FACS

STENOSI RESIDUA DELLA VENA SUCCLAVIA

- E’ comune riscontrare una stenosi della vena succlavia dovuta a lesione intrinseca della vena stessa

- Timing PTA
  - Flebografia dinamica in sala angiografica entro le 2 settimane dal trattamento chirurgico con ev. PTA e TAO per 3 mesi
  - **Flebografia dinamica intraoperatoria con trattamento inmmediato (riduci il rischio di early rethrombosis , “single step procedure”e evitare TAO)**



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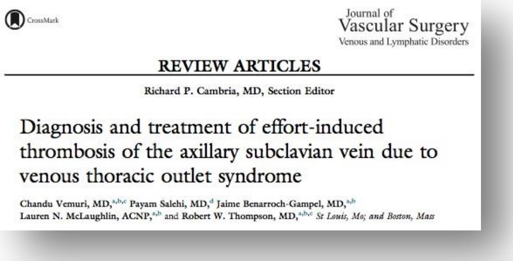


CrossMark

Journal of
Vascular Surgery
Venous and Lymphatic Disorders

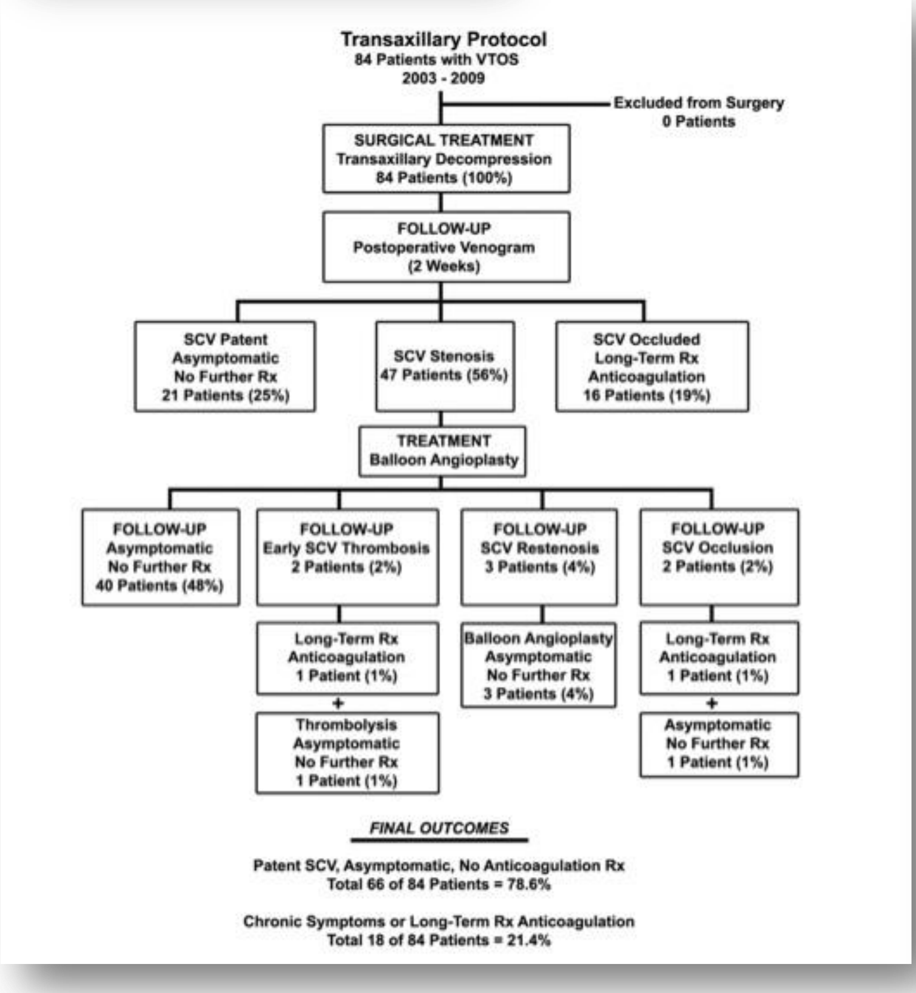
REVIEW ARTICLES

Richard P. Cambria, MD, Section Editor

Diagnosis and treatment of effort-induced thrombosis of the axillary subclavian vein due to venous thoracic outlet syndrome

Chandu Vemuri, MD,[a,b,c] Payam Salehi, MD,[d] Jaime Benarroch-Gampel, MD,[a,b]
Lauren N. McLaughlin, ACNP,[a,b] and Robert W. Thompson, MD,[a,b,c] *St Louis, Mo; and Boston, Mass*

2016 Oct.



Transaxillary Protocol
84 Patients with VTOS
2003 - 2009

Excluded from Surgery
0 Patients

SURGICAL TREATMENT
Transaxillary Decompression
84 Patients (100%)

FOLLOW-UP
Postoperative Venogram
(2 Weeks)

SCV Patent
Asymptomatic
No Further Rx
21 Patients (25%)

SCV Stenosis
47 Patients (56%)

SCV Occluded
Long-Term Rx
Anticoagulation
16 Patients (19%)

TREATMENT
Balloon Angioplasty

FOLLOW-UP
Asymptomatic
No Further Rx
40 Patients (48%)

FOLLOW-UP
Early SCV Thrombosis
2 Patients (2%)

Long-Term Rx
Anticoagulation
1 Patient (1%)
+
Thrombolysis
Asymptomatic
No Further Rx
1 Patient (1%)

FOLLOW-UP
SCV Restenosis
3 Patients (4%)

Balloon Angioplasty
Asymptomatic
No Further Rx
3 Patients (4%)

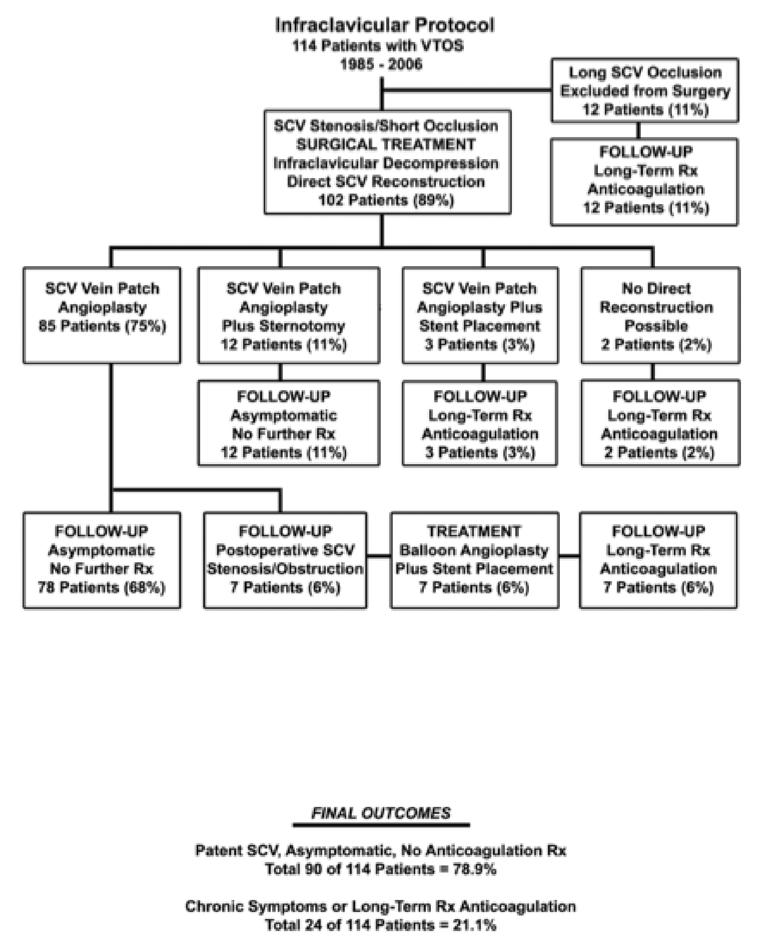
FOLLOW-UP
SCV Occlusion
2 Patients (2%)

Long-Term Rx
Anticoagulation
1 Patient (1%)
+
Asymptomatic
No Further Rx
1 Patient (1%)

FINAL OUTCOMES

Patent SCV, Asymptomatic, No Anticoagulation Rx
Total 66 of 84 Patients = 78.6%

Chronic Symptoms or Long-Term Rx Anticoagulation
Total 18 of 84 Patients = 21.4%



Infraclavicular Protocol
114 Patients with VTOS
1985 - 2006

Long SCV Occlusion
Excluded from Surgery
12 Patients (11%)

FOLLOW-UP
Long-Term Rx
Anticoagulation
12 Patients (11%)

SCV Stenosis/Short Occlusion
SURGICAL TREATMENT
Infraclavicular Decompression
Direct SCV Reconstruction
102 Patients (89%)

SCV Vein Patch
Angioplasty
85 Patients (75%)

SCV Vein Patch
Angioplasty
Plus Sternotomy
12 Patients (11%)

SCV Vein Patch
Angioplasty Plus
Stent Placement
3 Patients (3%)

No Direct
Reconstruction
Possible
2 Patients (2%)

FOLLOW-UP
Asymptomatic
No Further Rx
12 Patients (11%)

FOLLOW-UP
Long-Term Rx
Anticoagulation
3 Patients (3%)

FOLLOW-UP
Long-Term Rx
Anticoagulation
2 Patients (2%)

FOLLOW-UP
Asymptomatic
No Further Rx
78 Patients (68%)

FOLLOW-UP
Postoperative SCV
Stenosis/Obstruction
7 Patients (6%)

TREATMENT
Balloon Angioplasty
Plus Stent Placement
7 Patients (6%)

FOLLOW-UP
Long-Term Rx
Anticoagulation
7 Patients (6%)

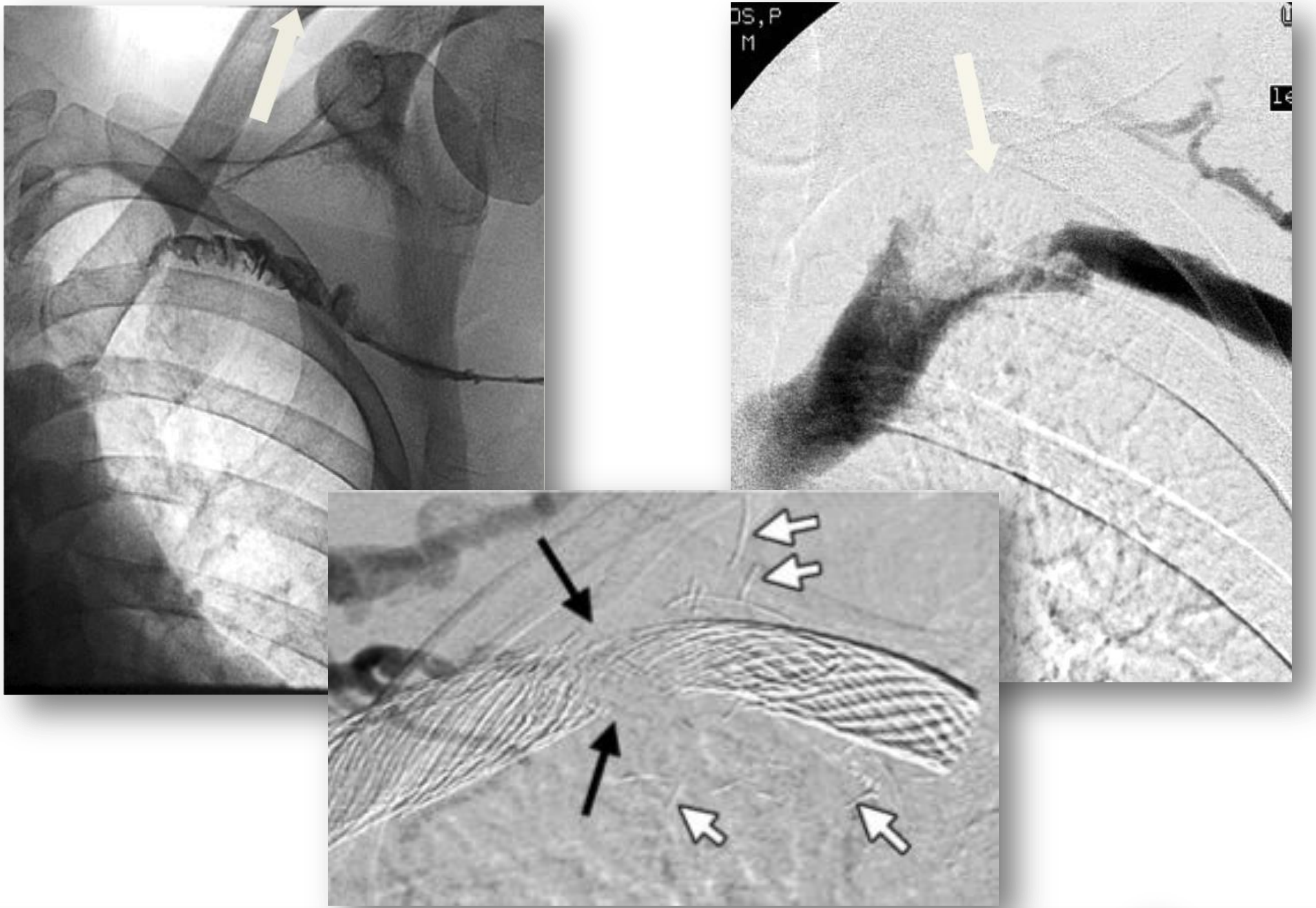
FINAL OUTCOMES

Patent SCV, Asymptomatic, No Anticoagulation Rx
Total 90 of 114 Patients = 78.9%

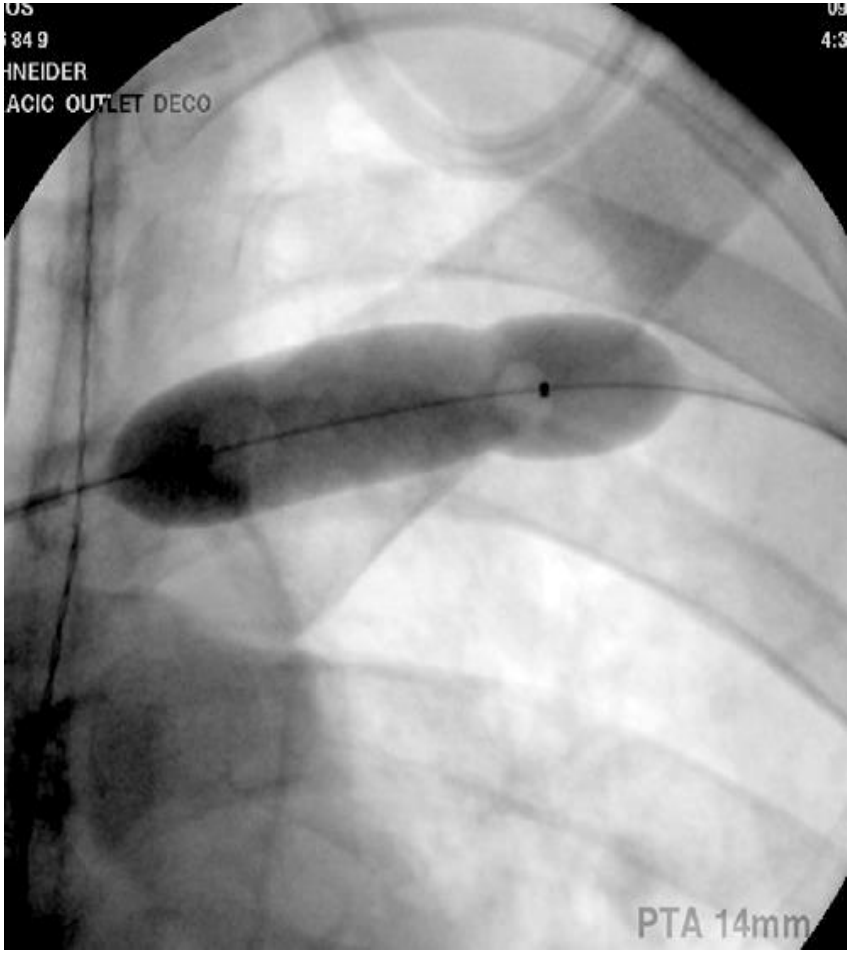
Chronic Symptoms or Long-Term Rx Anticoagulation
Total 24 of 114 Patients = 21.1%

TROMBOLISI

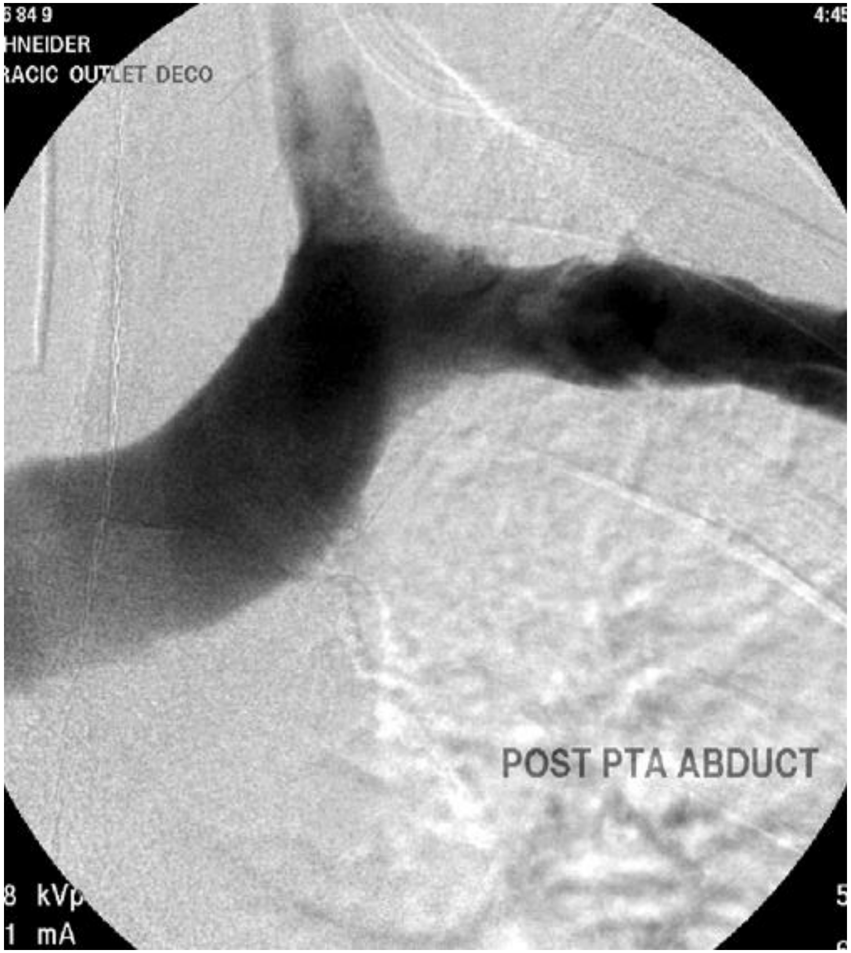
STENOSI RESIDUA



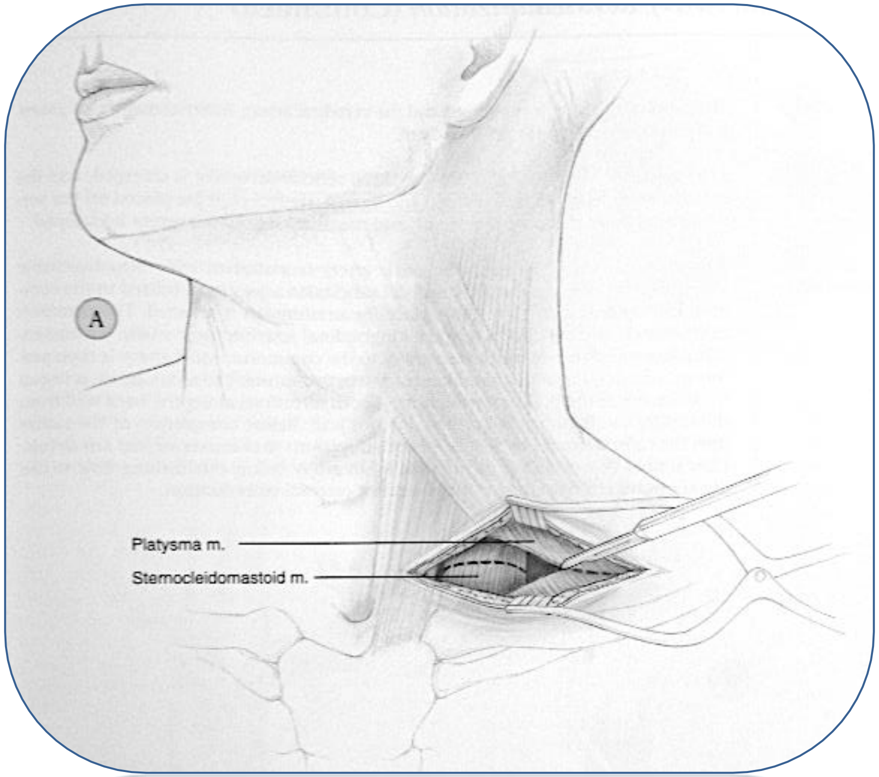
PTA

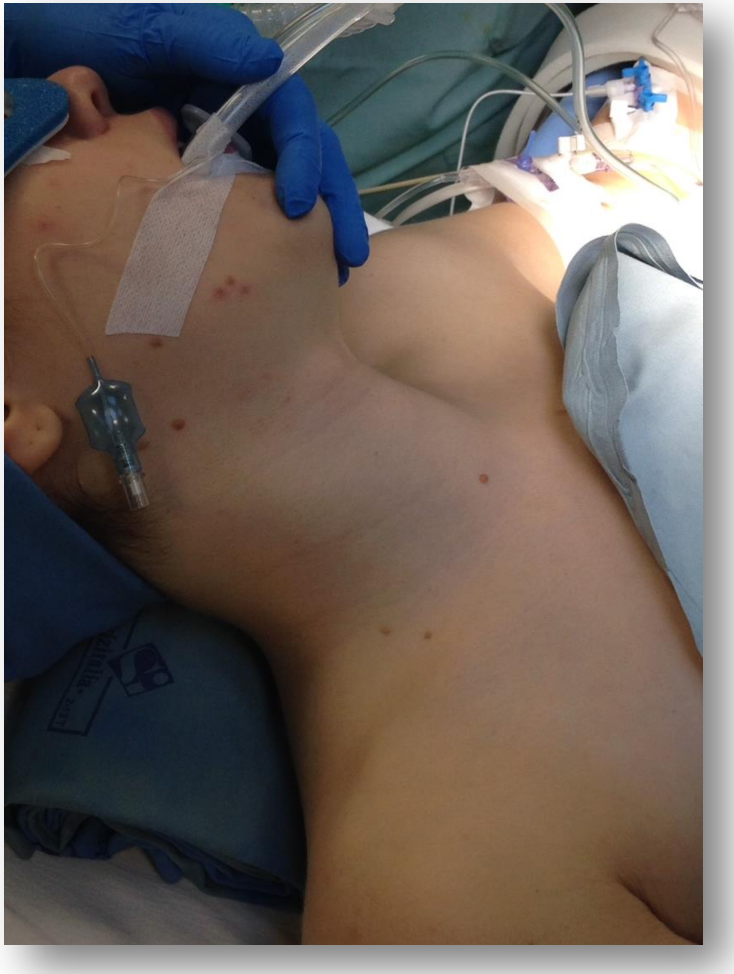

US
84 9
HNEIDER
ACIC OUTLET DECO
09
4:3
PTA 14mm

RISULTATO FINALE


84 9
HNEIDER
ACIC OUTLET DECO
4:45
POST PTA ABDUCT
8 kVp
1 mA
5

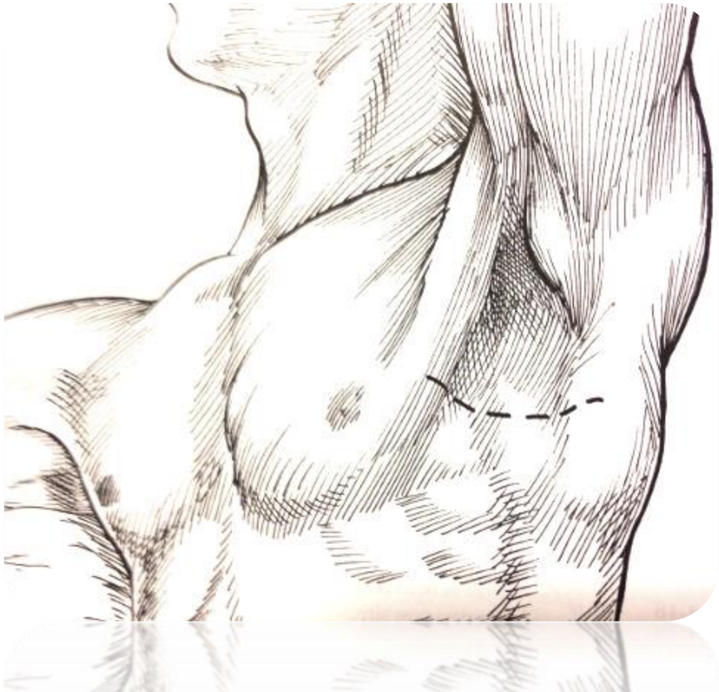
Approccio sopraclavicolare anteriore


A
Platysma m.
Sternocleidomastoid m.



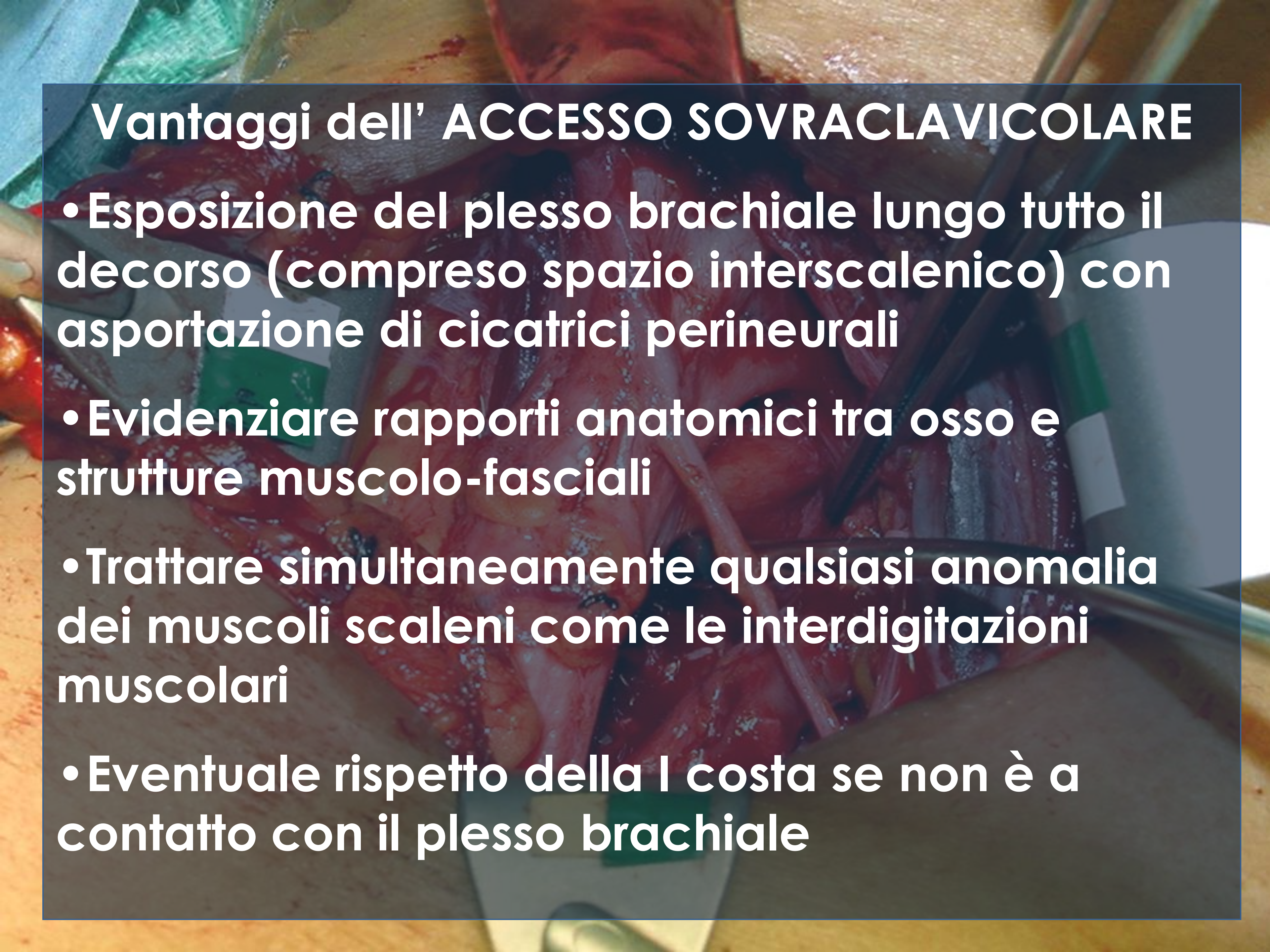
Incisione trasversale 2cm al di sopra della clavicola

Approccio Transascellare



SVANTAGGI:
- Campo chirurgico angusto con rischio di danno del nervo TL e Vena succlavia
- Molte delle bande fibromuscolari congenite sono mediali alla I costa
- La correzione di un'eventuale patologia arteriosa prevederebbe un secondo intervento

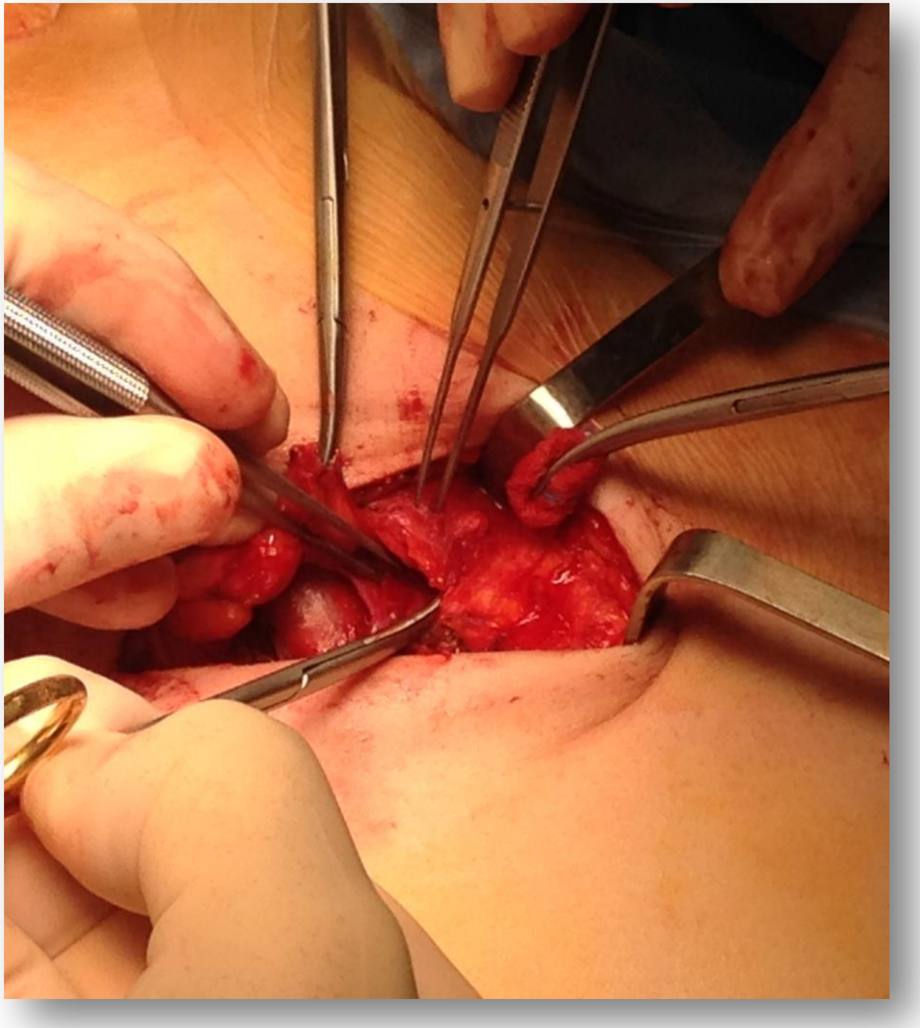
VANTAGGI:
- Eccellente esposizione della I costa
- Buon risultato estetico
- Approccio più rapido



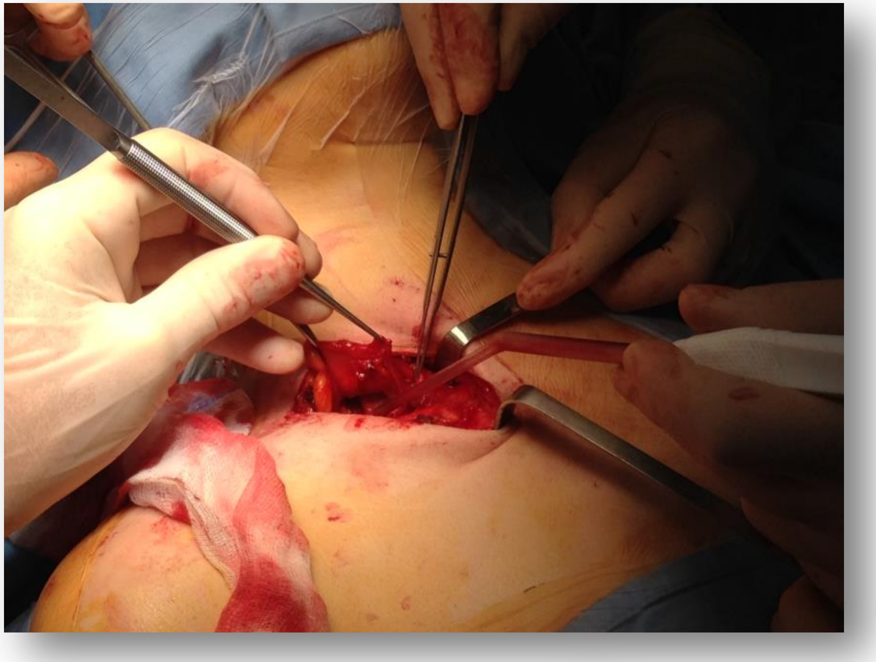
Vantaggi dell’ ACCESSO SOVRACLAVICOLARE

- Esposizione del plesso brachiale lungo tutto il decorso (compreso spazio interscalenico) con asportazione di cicatrici perineurali
- Evidenziare rapporti anatomici tra osso e strutture muscolo-fasciali
- Trattare simultaneamente qualsiasi anomalia dei muscoli scaleni come le interdigitazioni muscolari
- Eventuale rispetto della I costa se non è a contatto con il plesso brachiale

Esposizione dell'arteria Succlavia



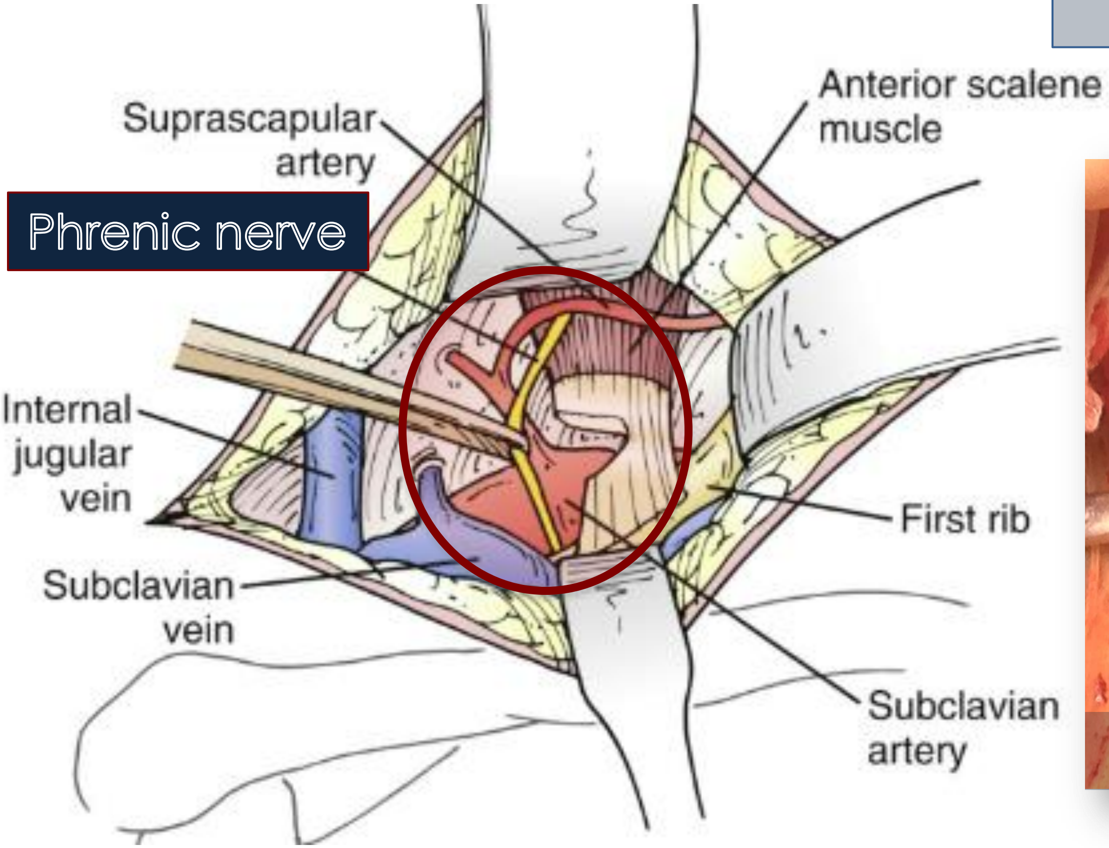
Il Tessuto adiposo pre-scalenico viene mobilizzato lungo i margini mediale,superiore ed anteriore mantenendo il peduncolo e ribaltandolo lateralmente

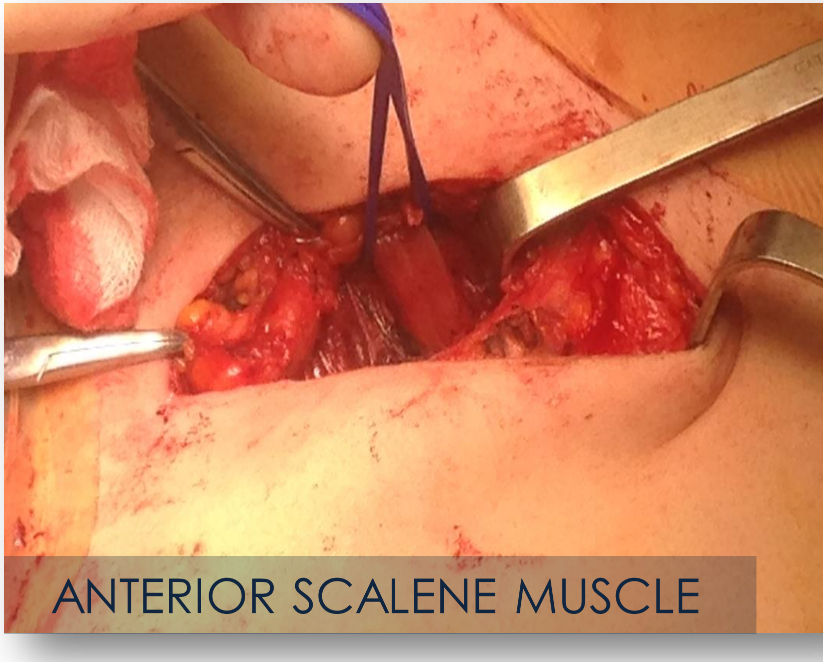


Il nervo Frenico decorre sulla superficie anteriore del muscolo scaleno

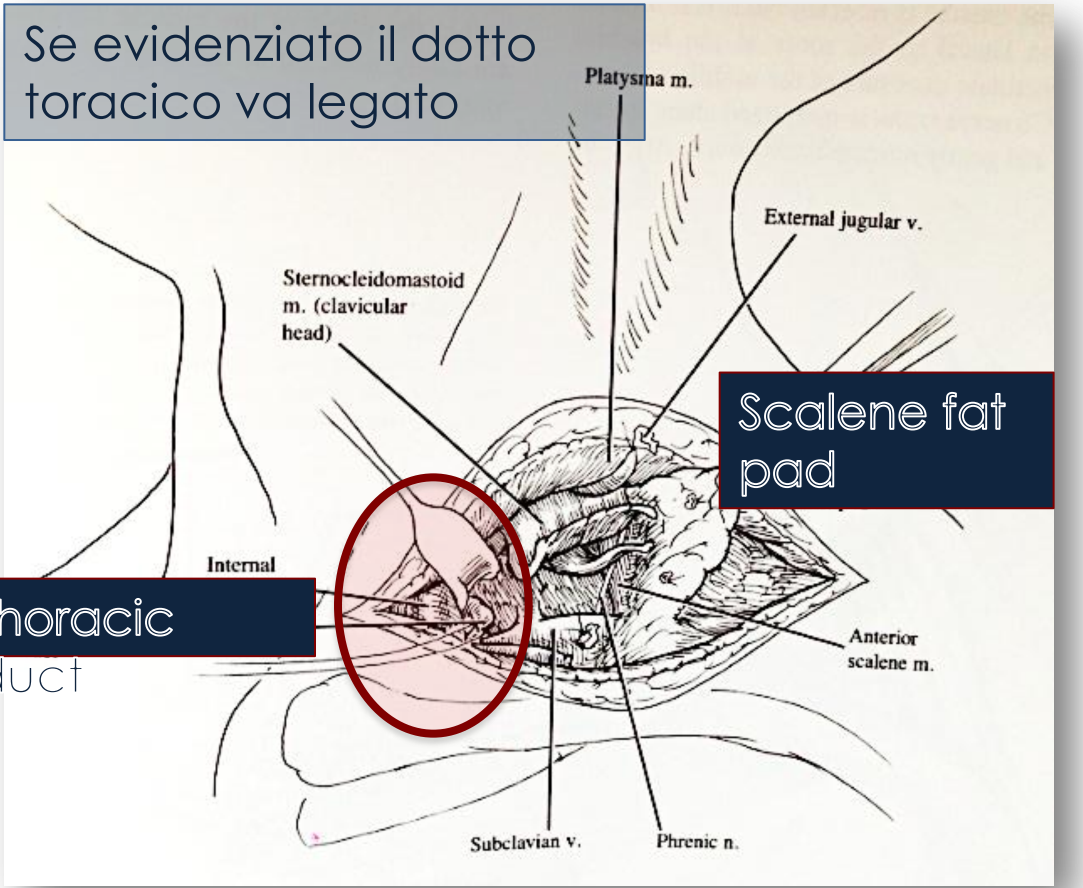
Il nervo viene mobilizzato delicatamente dalla fascia del MSA e protetto

Il MSA viene così sezionato a livello della sua inserzione


Suprascapular artery
Phrenic nerve
Internal jugular vein
Subclavian vein
Anterior scalene muscle
First rib
Subclavian artery

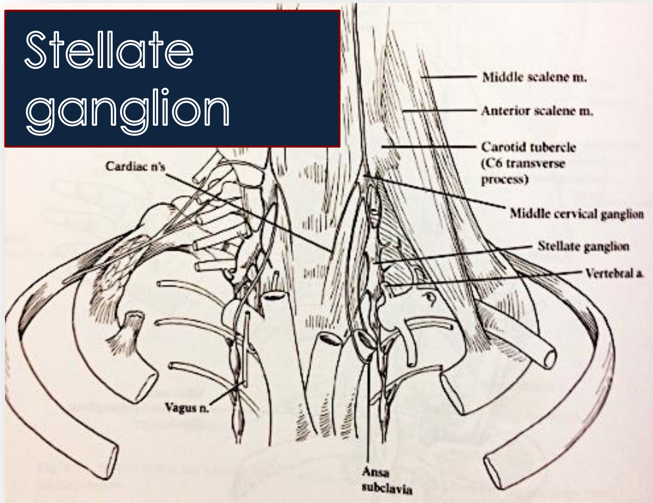

ANTERIOR SCALENE MUSCLE

Se evidenziato il dotto toracico va legato

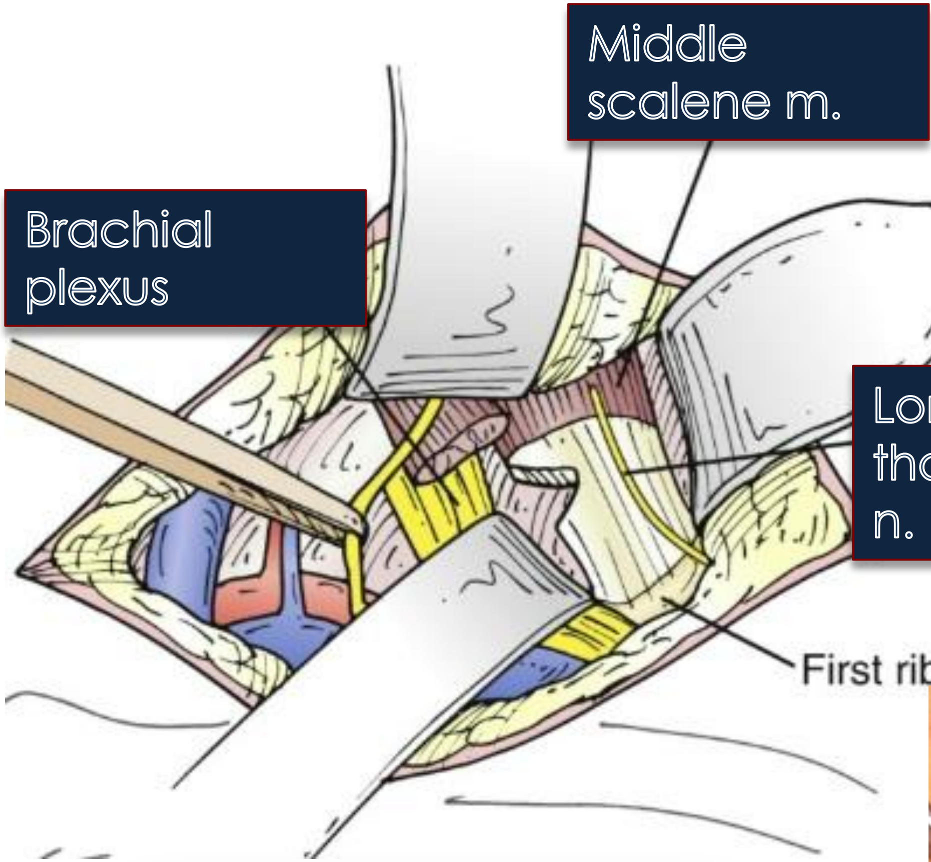

Platysma m.
External jugular v.
Sternocleidomastoid m. (clavicular head)
Internal
Anterior scalene m.
Subclavian v.
Phrenic n.

Scalene fat pad

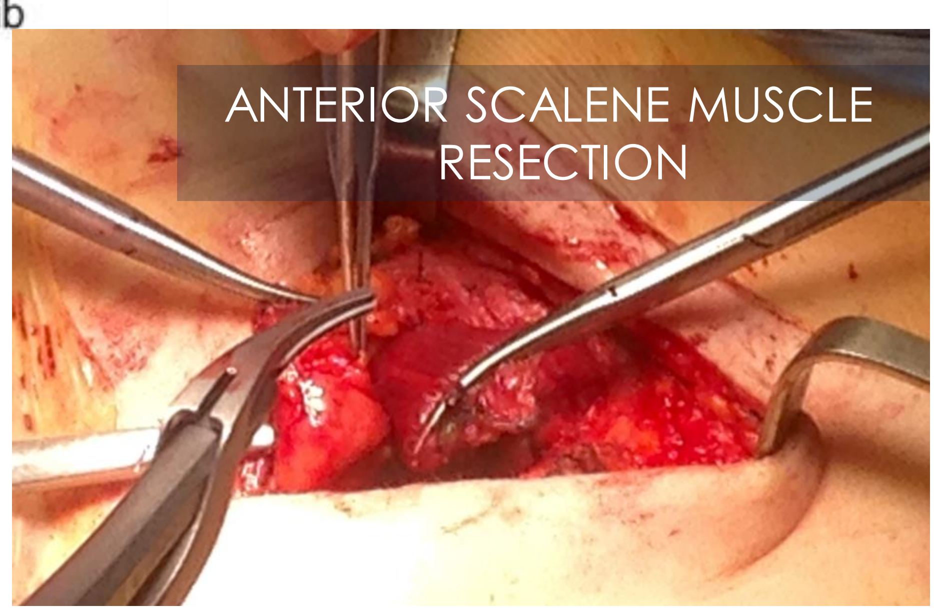
Thoracic duct


Middle scalene m.
Anterior scalene m.
Carotid tubercle (C6 transverse process)
Cardiac n's
Middle cervical ganglion
Stellate ganglion
Vertebral a.
Vagus n.
Ansa subclavia

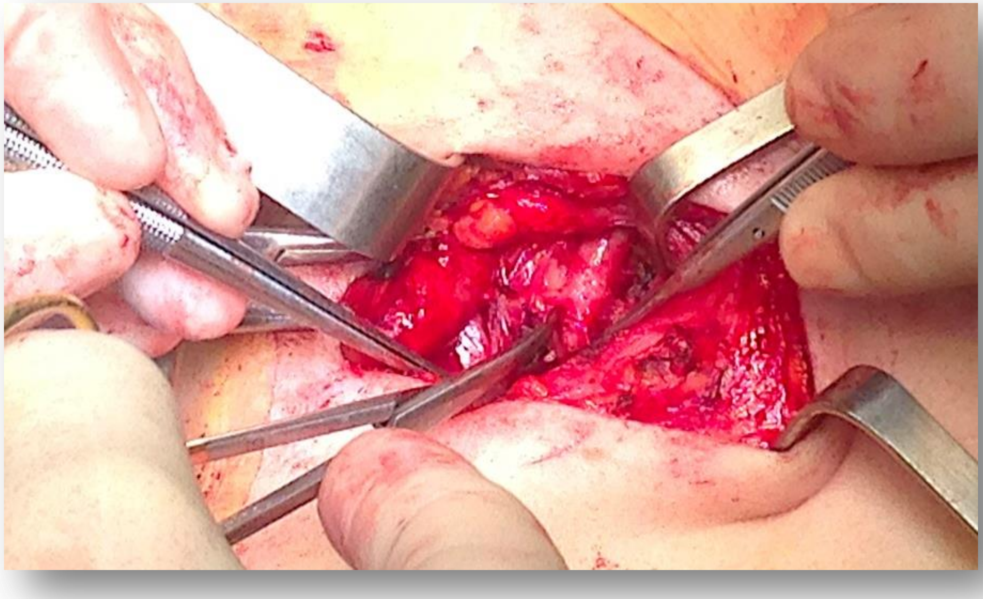
Stellate ganglion

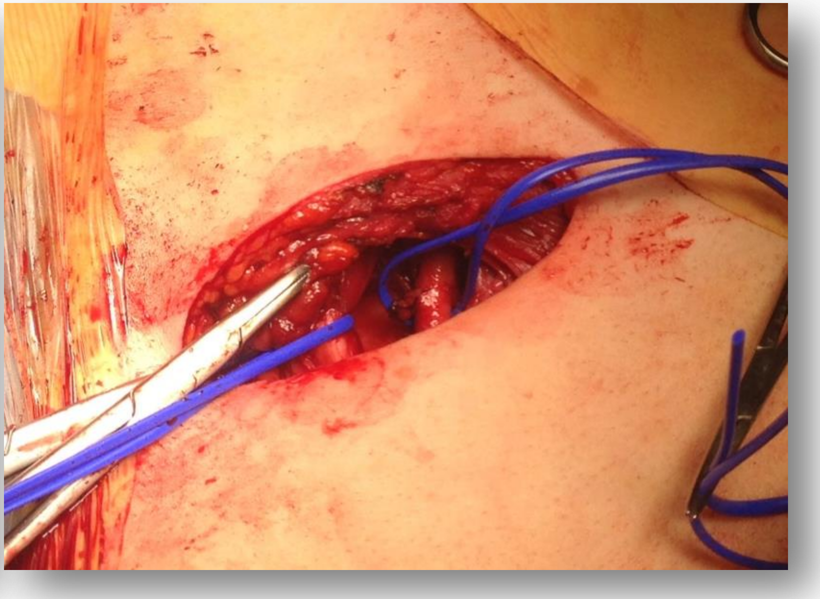

Middle scalene m.
Brachial plexus
Long thoracic n.
First rib

Il MSM viene così sezionato identificando e proteggendo il nervo Toracico Lungo

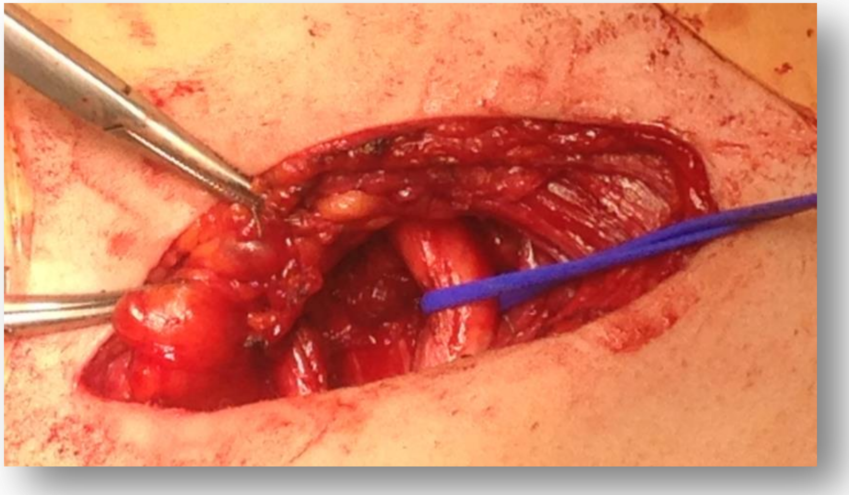


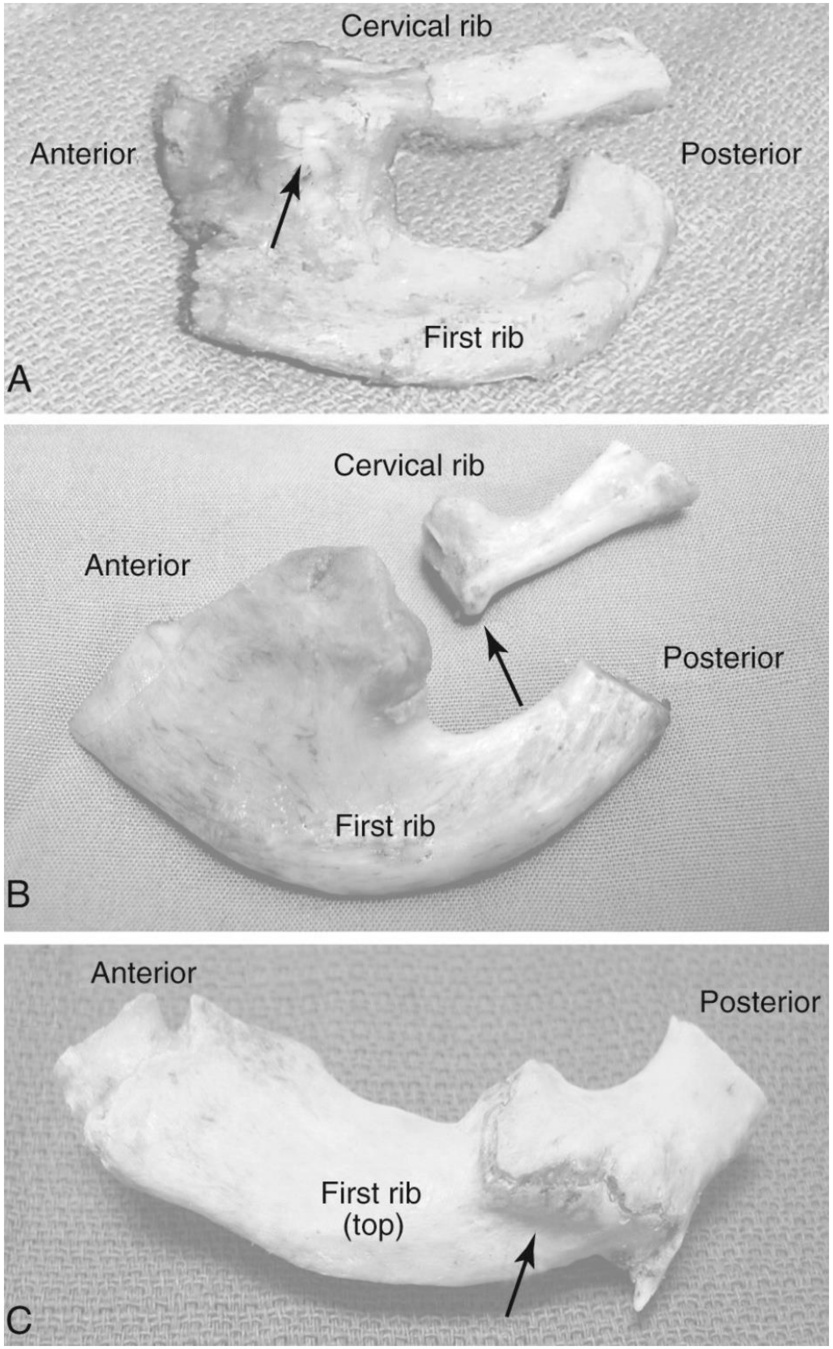
ANTERIOR SCALENE MUSCLE RESECTION

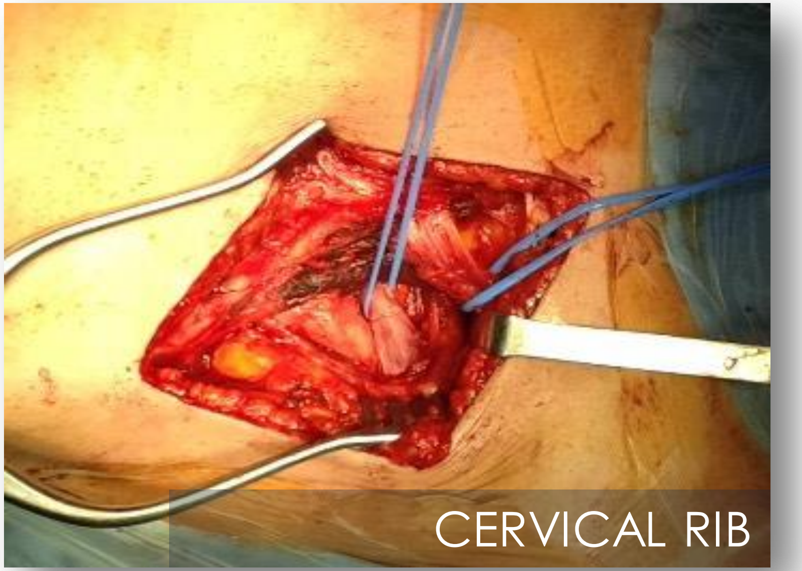


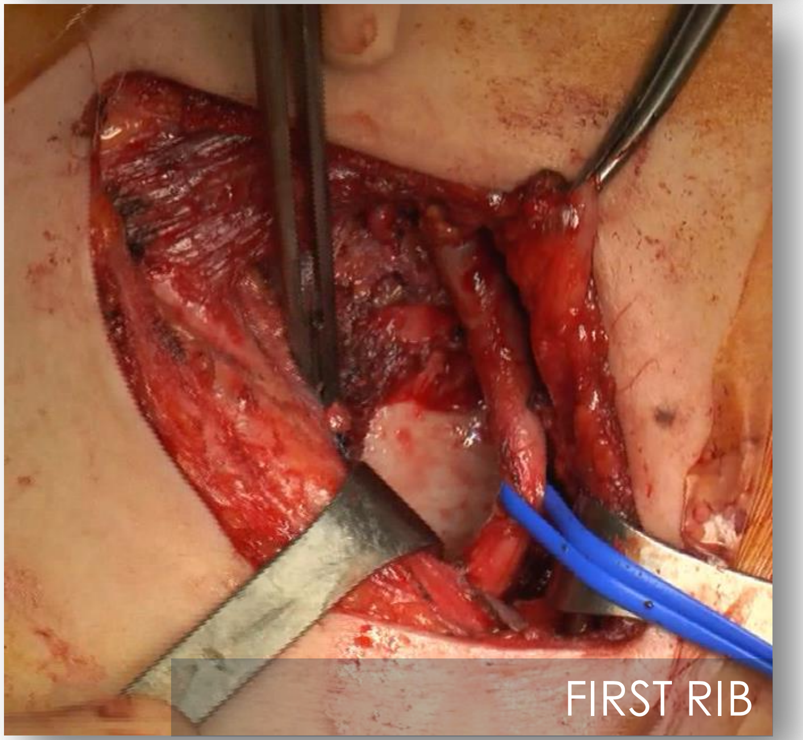


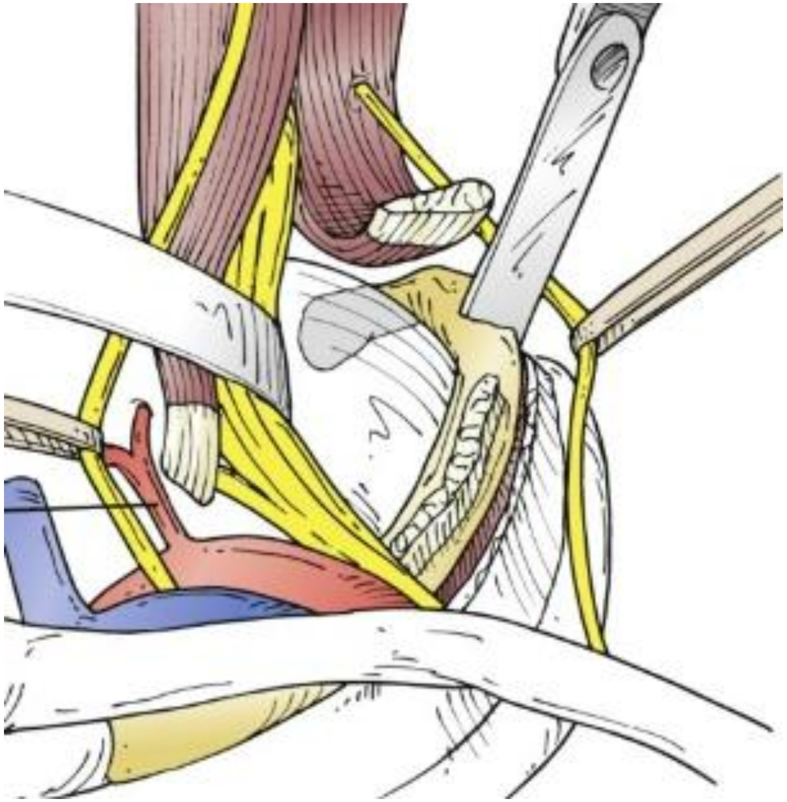
Esposizione completa dei vasi



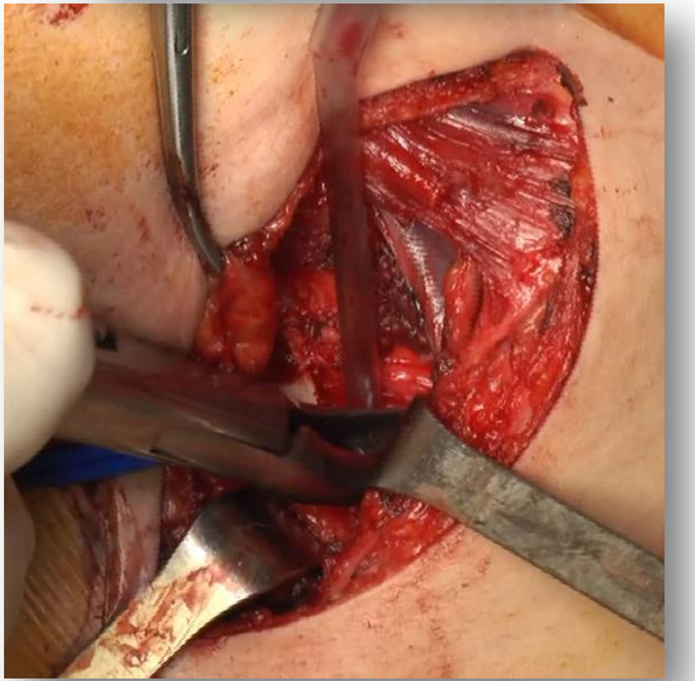

Cervical rib
Anterior
Posterior
First rib
A
Cervical rib
Anterior
Posterior
First rib
B
Anterior
Posterior
First rib
(top)
C

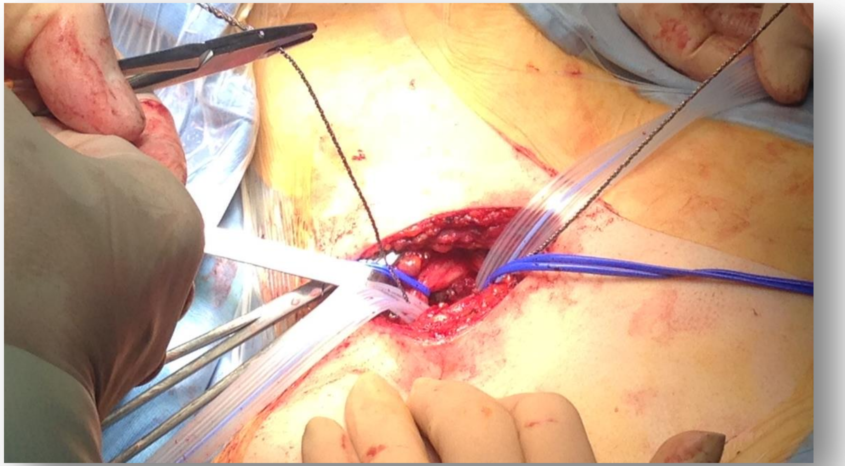

CERVICAL RIB


FIRST RIB

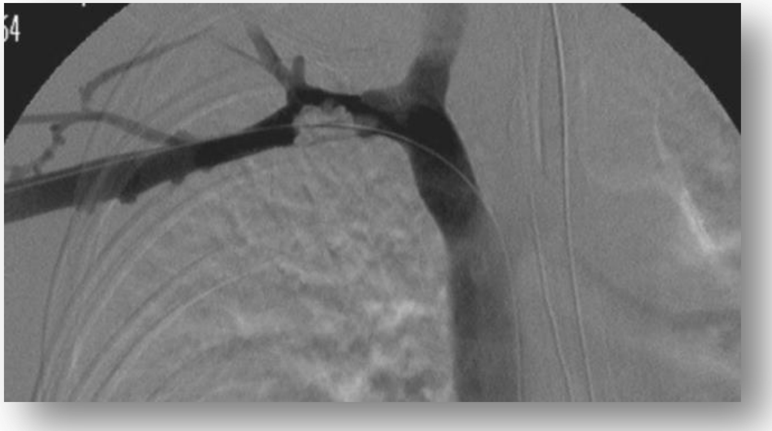


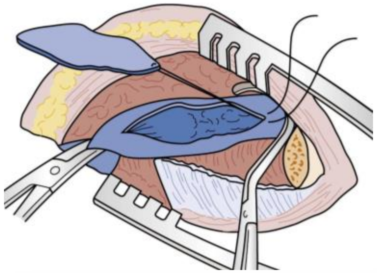
La sezione della I costa deve essere effettuata sotto diretta visione per minimizzare il rischio di danno al plesso e di PNX.

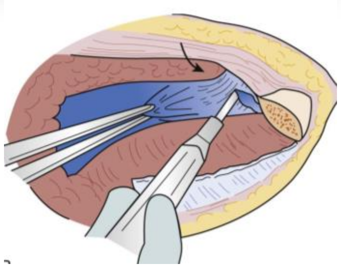


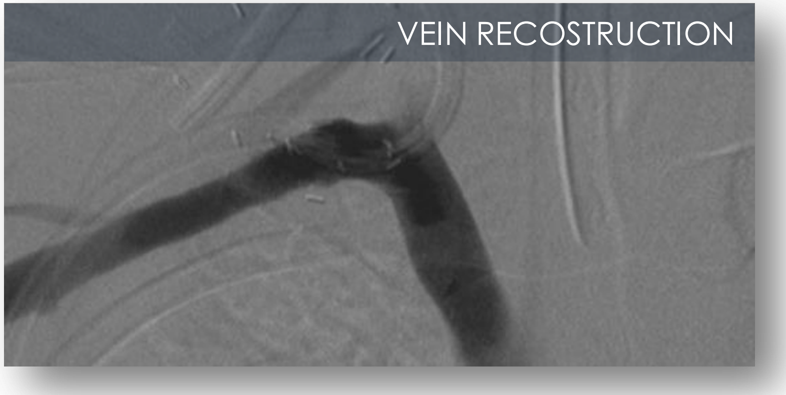


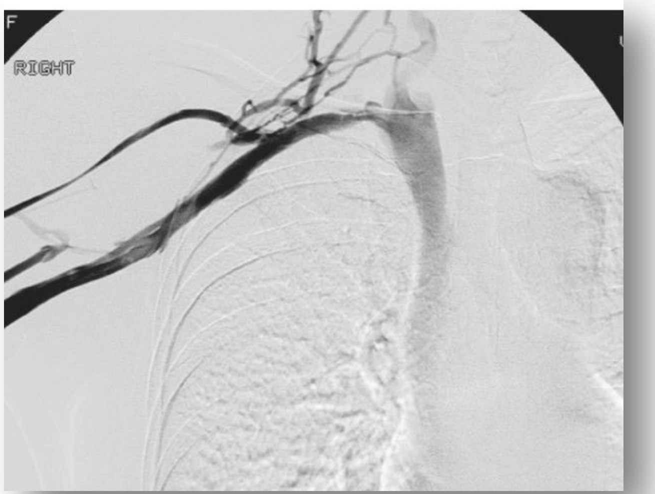
vTOS

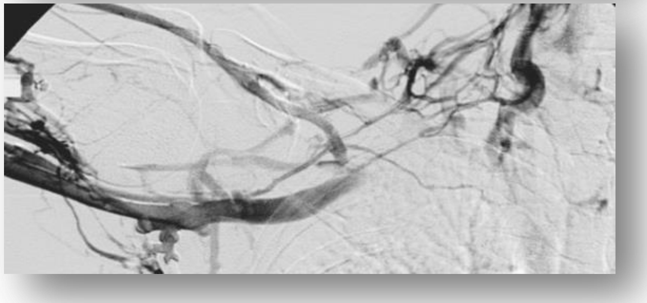


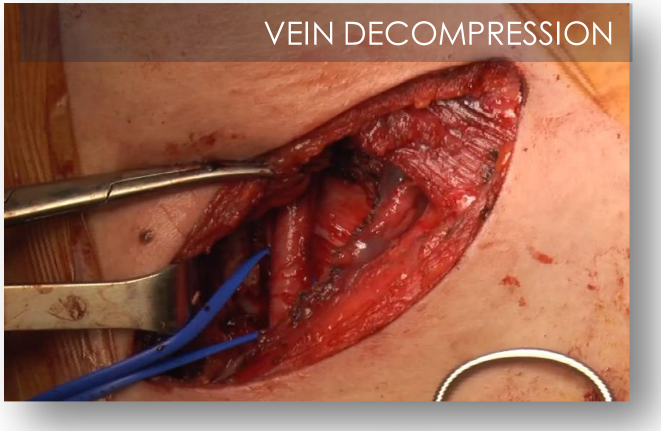


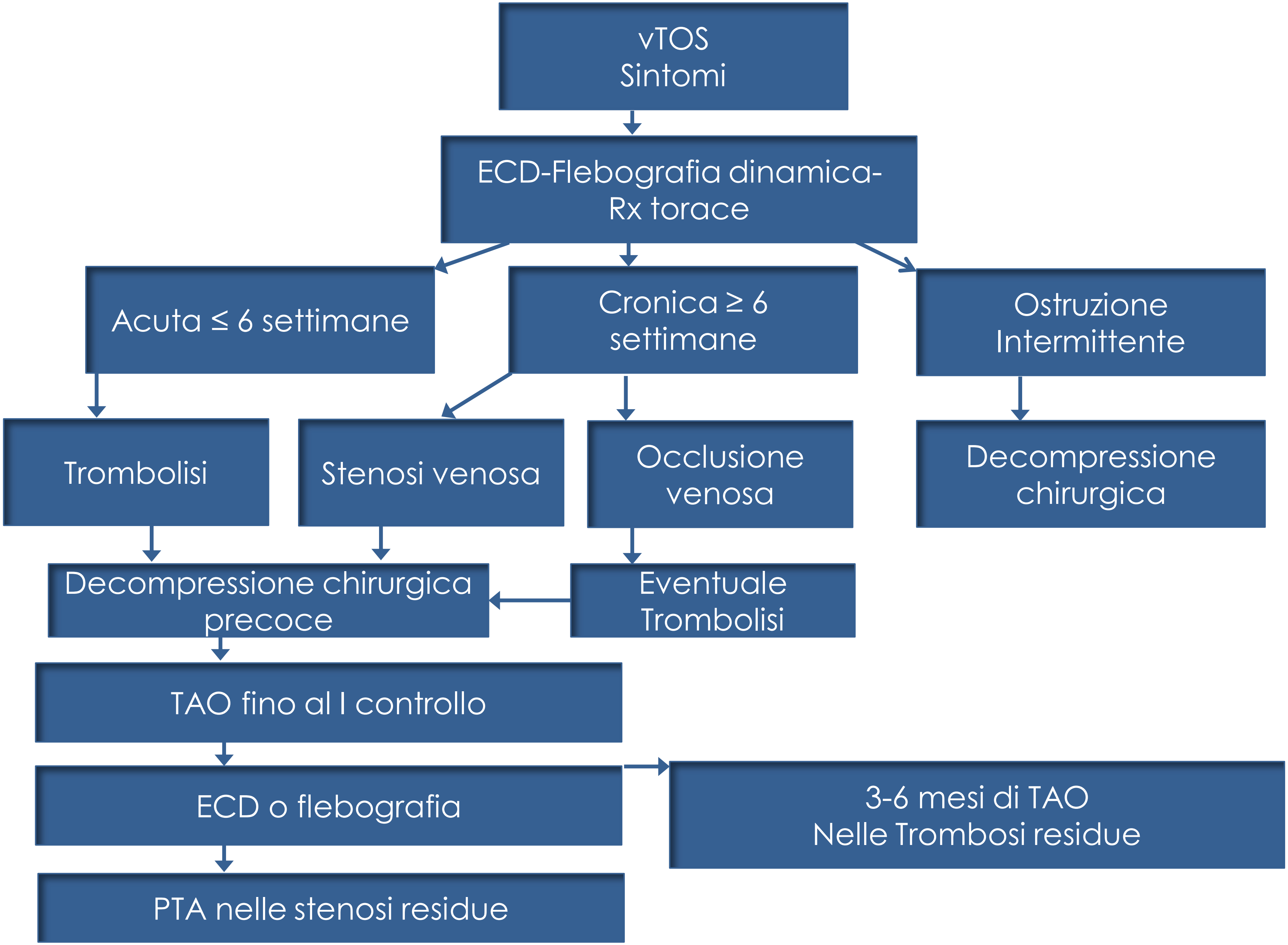



VEIN RECOSTRUCTION






VEIN DECOMPRESSION



vTOS
Sintomi

ECD-Flebografia dinamica-
Rx torace

Acuta ≤ 6 settimane

Cronica ≥ 6
settimane

Ostruzione
Intermittente

Trombolisi

Stenosi venosa

Occlusione
venosa

Decompressione
chirurgica

Decompressione chirurgica
precoce

Eventuale
Trombolisi

TAO fino al I controllo

ECD o flebografia

3-6 mesi di TAO
Nelle Trombosi residue

PTA nelle stenosi residue

UO Chirurgia Vascolare & Endovascolare di Ferrara

Tutti gli interventi sono stati eseguiti con accesso sovraclaveare

aTOS n.7 (5F-7M) Età 44±9:

- 2 Scalenectomie, rimozione costa sovranumeraria e innesto in VGS
- 2 Scalenectomie, rimozione costa sovranumeraria e ricostruzione TT dell’arteria succlavia
- 1 Scalenectomia e rimozione della I costa e innesto in VGS
- 2 Scalenectomie e innesto in ePTFE

nTOS n.13 (9F-4M) Età 35±6:

- 2 Scalenectomie, rimozione costa sovranumeraria
- 5 Scalenectomie e rimozione di I costa
- 6 Scalenectomie

vTOS n. 6 (5F-1M) Età 22±4:

- 2 Scalenectomie e rimozione della I costa
- 2 Scalenectomie, rimozione della I costa e patch di allargamento in VGS
- 1 Rimozione della I costa e PTA
- 1 TP fibrinolitica e NAO

-In tutti i casi è stata eseguta TP fibrinolitica Loc.le

Pervietà a 1 anno 83%

CONCLUSIONI

- La strategia terapeutica adeguata per trattare la sindrome dello stretto toracico superiore venosa necessita di un timing diagnostico-terapeutico sequenziale ben preciso che ha come l obiettivo la risoluzione del quadro di TVP

- Il trattamento chirurgico e endovascolare devono sempre essere supportati da una adeguata terapia fisica e spesso da una modifica delle attività quotidiane del Paziente a causa della elevata frequenza di recidive.

GRAZIE