



Trattamento combinato

M. Natrella

Dipartimento di Diagnostica per Immagini e
Radiologia Interventistica
Ospedale Regionale "U. Parini" Aosta

AINR
Associazione Italiana Neurologia Radiologica
Società Italiana
di Radiologia Medica

**Faccia da
STROKE**

*Incontro su
casi clinici di stroke*

Presidenti del Corso:
Giovanni Gandini - Stefano Barbero

LU MONFERRATO (AL)
Venerdì 20 ottobre 2017

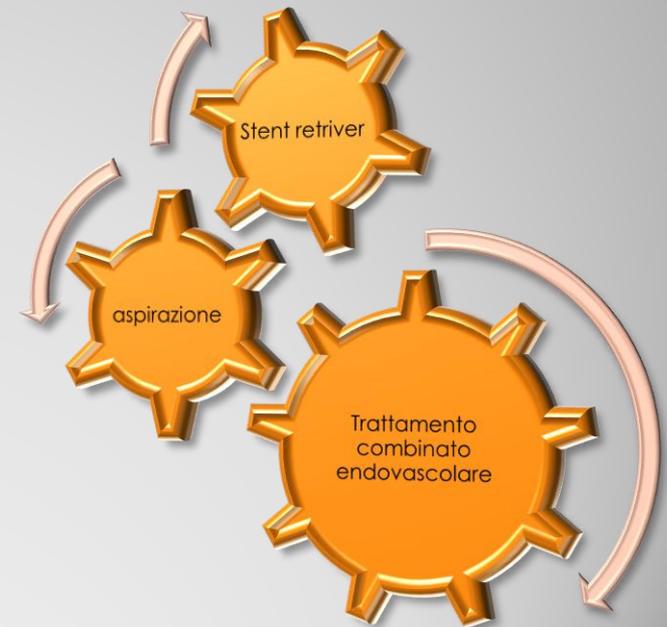
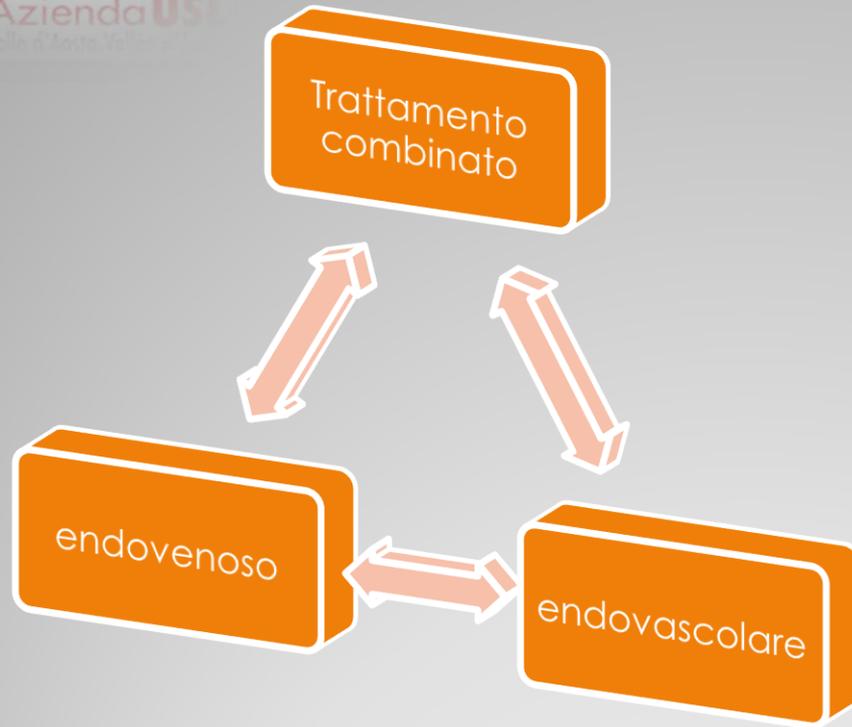
Sala Polifunzionale Luese
Via San Giacomo, 30 - Lu Monferrato (AL)

76 crediti ECM

radio.aosta@ausl.vda.it



Trattamento combinato



MR CLEAN Trial - 2015

The NEW ENGLAND JOURNAL of MEDICINE

ESTABLISHED IN 1812

JANUARY 1, 2015

VOL. 372 NO. 1

A Randomized Trial of Intraarterial Treatment for Acute Ischemic Stroke

O.A. Berkhemer, P.S.S. Fransen, D. Beumer, L.A. van den Berg, H.F. Lingsma, A.J. Yoo, W.J. Schonewille, J.A. Vos, P.J. Nederkoorn, M.J.H. Wermer, M.A.A. van Walderveen, J. Staals, J. Hofmeijer, J.A. van Oostayen, G.J. Lycklama à Nijeholt, J. Boiten, P.A. Brouwer, B.J. Emmer, S.F. de Bruijn, L.C. van Dijk, L.J. Kappelle, R.H. Lo, E.J. van Dijk, J. de Vries, P.L.M. de Kort, W.J.J. van Rooij, J.S.P. van den Berg, B.A.A.M. van Hasselt, L.A.M. Aerden, R.J. Dallinga, M.C. Visser, J.C.J. Bot, P.C. Vroomen, O. Eshghi, T.H.C.M.L. Schreuder, R.J.J. Heijboer, K. Keizer, A.V. Tielbeek, H.M. den Hertog, D.G. Gerrits, R.M. van den Berg-Vos, G.B. Karas, E.W. Steyerberg, H.Z. Flach, H.A. Marquering, M.E.S. Sprengers, S.F.M. Jenniskens, L.F.M. Beenen, R. van den Berg, P.J. Koudstaal, W.H. van Zwam, Y.B.W.E.M. Roos, A. van der Lugt, R.J. van Oostenbrugge, C.B.L.M. Majoie, and D.W.J. Dippel, for the MR CLEAN Investigators*

AllinaHealth



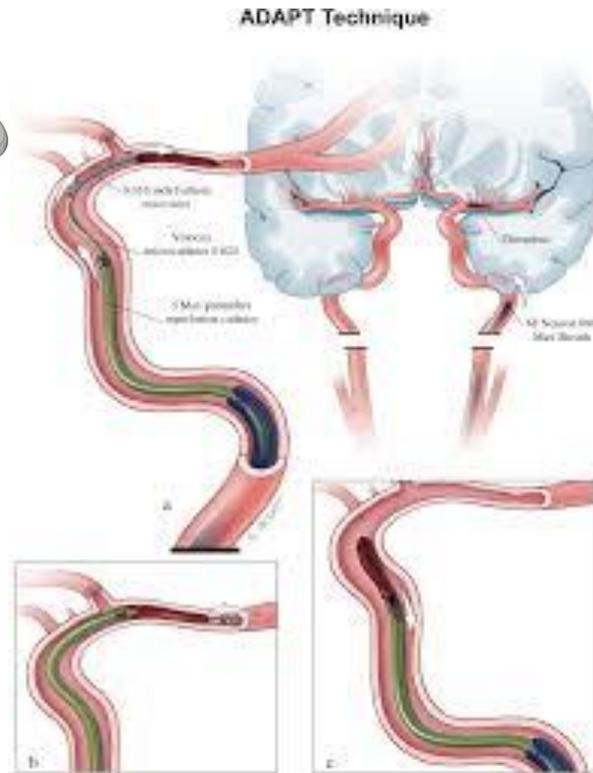
27

ESCAPE, EXTEND IA, SWIFT PRIME, REVASCAT



Embolia in altri territori vascolari

A Direct Aspiration first Pass Technique ADAPT



Turk, Aquilla S., et al. "Initial clinical experience with the ADAPT technique: a direct aspiration first pass technique for stroke thrombectomy." *Journal of neurointerventional surgery* (2013): neurintsurg-2013.

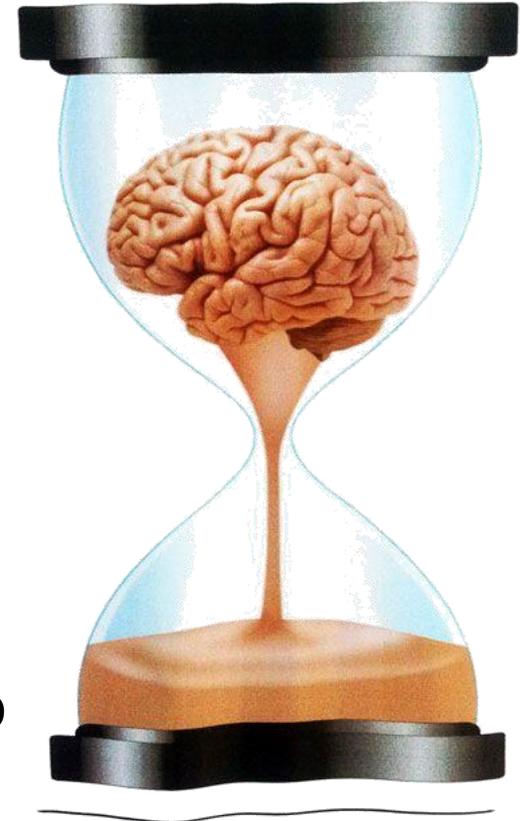
Per una rapida ricanalizzazione dei vasi cerebrali è indispensabile la VELOCITA'

Procedura veloce

- ✓ Conoscenza preventiva dell'anatomia (studio angio-TAC pre)
- ✓ Scelta del materiale
- ✓ Minor numero di passaggi
- ✓ Evitare le complicanze emboliche



Minor tempo



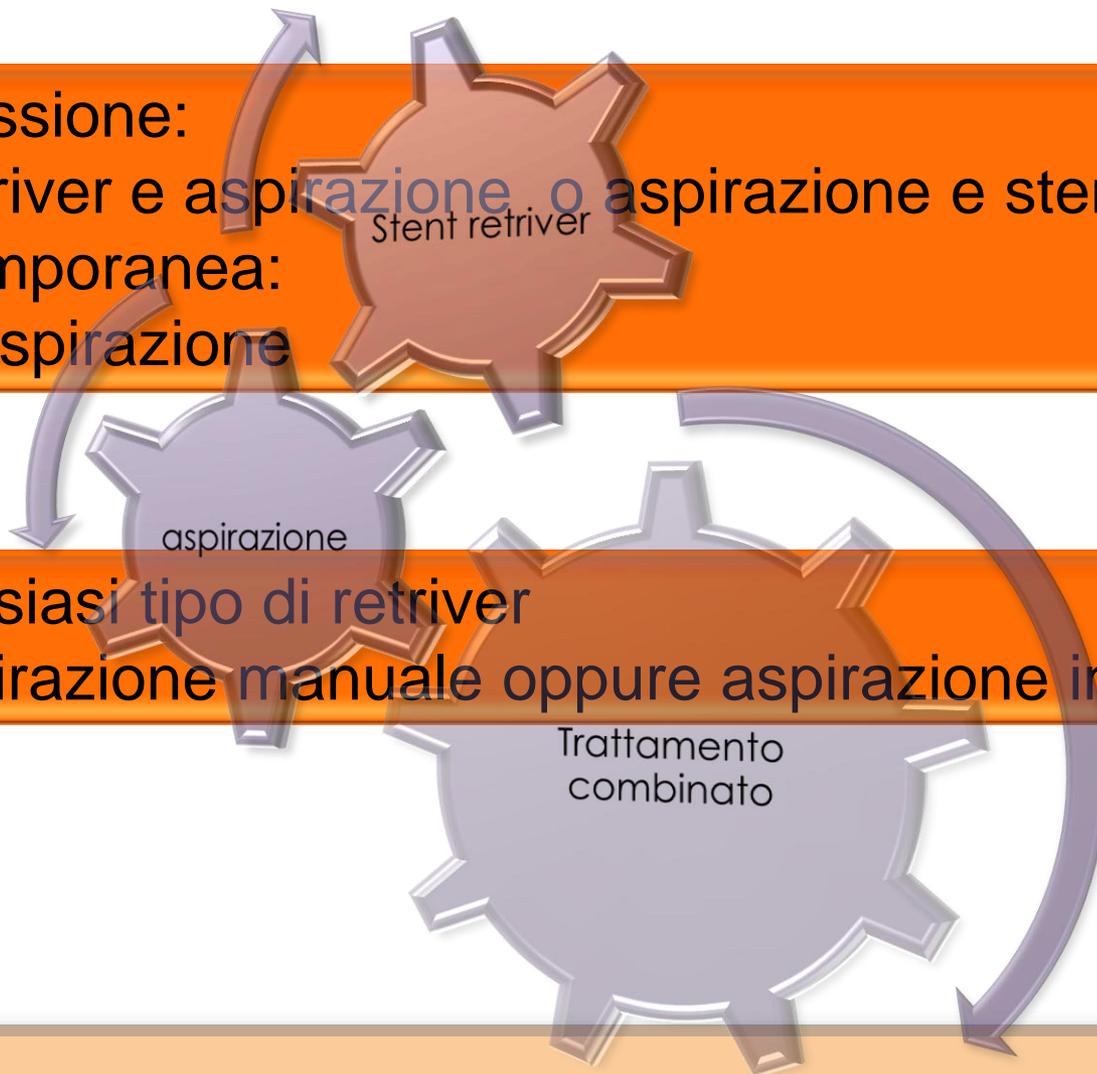
Stroke : Time lost is brain lost



La tecnica combinata può essere usata:

- in successione:
stent-retriver e aspirazione o aspirazione e stent-retriver
- in contemporanea:
stent + aspirazione

- Con qualsiasi tipo di retriver
- Con aspirazione manuale oppure aspirazione in pompa





Azienda USL

Tecnica combinata in successione:

1. Quando l'aspirazione fallisce

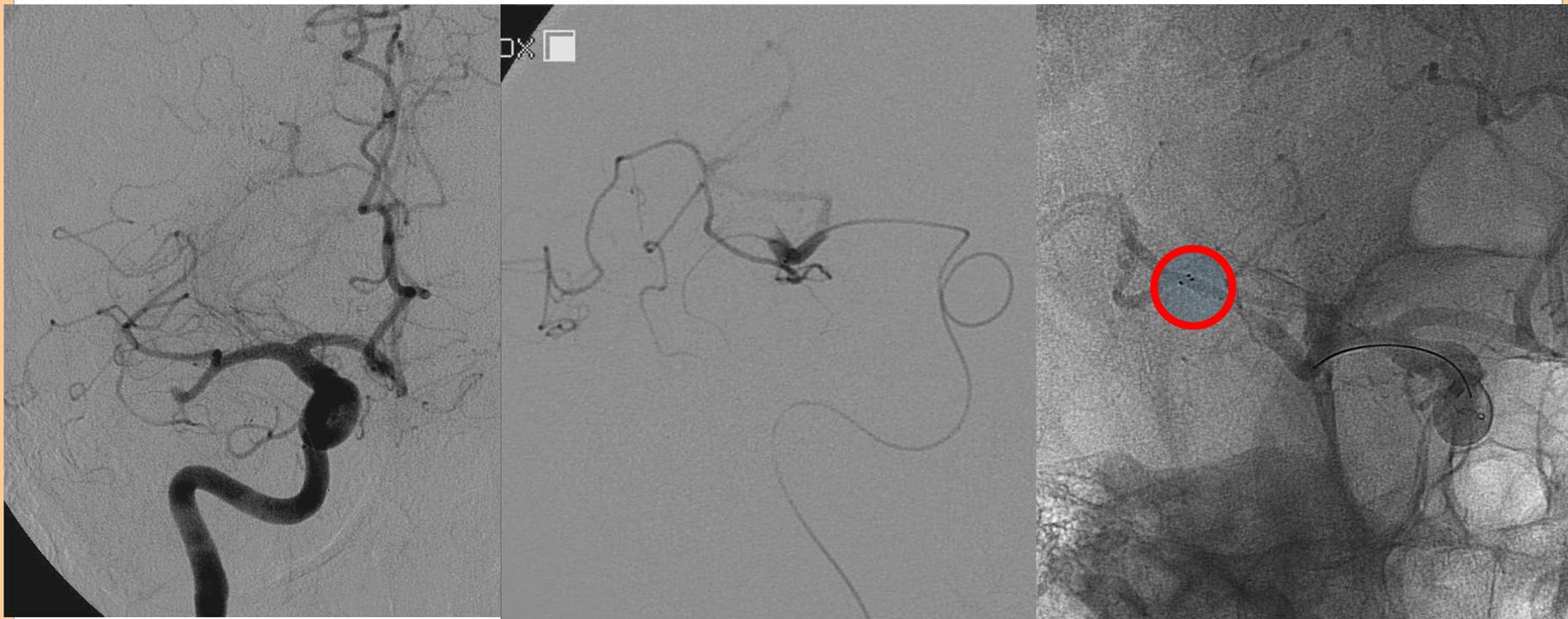




Azienda USL

Tecnica combinata in successione:

2. Nelle occlusioni distali



ORIGINAL RESEARCH

Comparing different thrombectomy techniques in five large-volume centers: a 'real world' observational study

Amélie Carolina Hesse,¹ Daniel Behme,¹ André Kemmling,² Antonia Zapf,³ Nils Große Hokamp,⁴ Isabelle Frischmuth,⁵ Ilko Maier,⁶ Jan Liman,⁶ Ioannis Tsogkas,¹ Jan-Hendrik Buhk,⁵ Julia Tran,¹ Jens Fiehler,⁵ Anastasios Mpotsaris,⁴ Peter Schramm,² Ansgar Berlis,⁷ Michael Knauth,¹ Marios-Nikos Psychogios¹

In questo studio vengono confrontati 5 gruppi

- Gruppo solo aspirazione
- Gruppo aspirazione + stent retriever rescue
- Gruppo solo stent retrievers
- Gruppo stent retriever + aspirazione rescue
- Gruppo "primary combined approach

(PCA)

ORIGINAL RESEARCH

Comparing different thrombectomy techniques in five large-volume centers: a 'real world' observational study

Amélie Carolina Hesse,¹ Daniel Behme,¹ André Kemmling,² Antonia Zapf,³ Nils Große Hokamp,⁴ Isabelle Frischmuth,⁵ Ilko Maier,⁶ Jan Liman,⁶ Ioannis Tsogkas,¹ Jan-Hendrik Buhk,⁵ Julia Tran,¹ Jens Fiehler,⁵ Anastasios Mpotsaris,⁴ Peter Schramm,² Ansgar Berlis,⁷ Michael Knauth,¹ Marios-Nikos Psychogios¹

Gruppo che ha eseguito approccio combinato (PCA) presenta tassi di riperfusione superiori rispetto alla semplice aspirazione e al gruppo che utilizza la sola tecnica stent retriever. Inoltre sono diminuiti il numero di tentativi necessari ad ottenere una ricanalizzazione e il tasso di embolizzazione distale.

Results The ITT-analysis showed significantly higher reperfusion rates, with 86% of successful reperfusion in the PCA-group compared with 73% in the aspiration group and 65% in the stent-retriever group. There was no significant difference in groin to reperfusion time regarding the used technique. The secondary analysis showed an impact of the technique on the number of attempts and the occurrence of ENTs. Lowest ENT rates and attempts were reported with the combined approach.

 Con qualsiasi tipo di retriever e aspirazione

Trevo

Solitaire

Penumbra system

Embotrap II

**Aspirazione
manuale**

Materiale

- Neurosheath 6 F

- Neuron max 0,088 (Penumbra)
- Shuttle (Cook Medical)

- Balloon Guiding Catheter

- FlowGate 8 F (Stryker)
- Cello 9 F (Covidien, EV3)

Sistema triassiale

- Catetere intermedio

- ACE 68 (Penumbra)
- Sofia Plus (Microvention Terumo)
- Navien (Covidien)

- Microcatetere

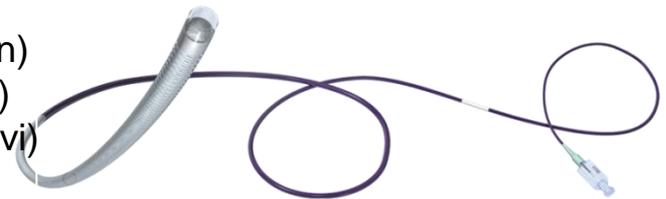
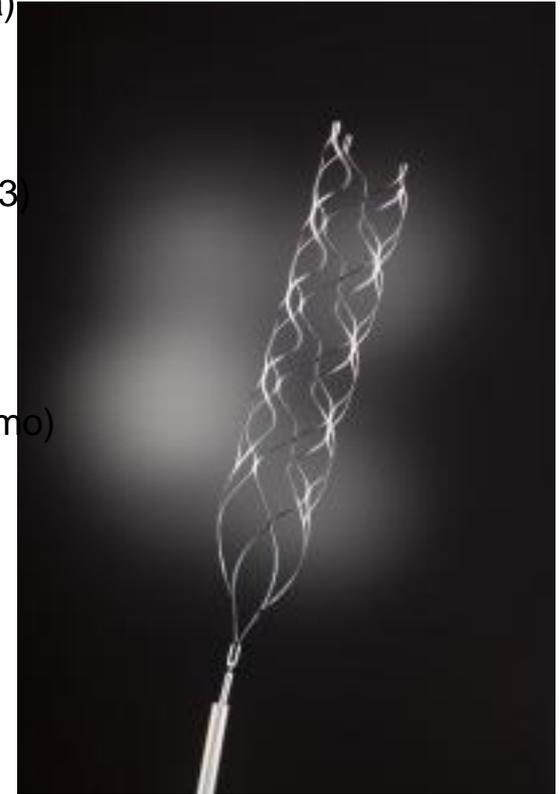
- Velocity (Penumbra)
- Excelsior XT-27 (Stryker)
- Echelon (Covidien)

- Microguida

- Syncro wire (Styker)
- Traxcess (Microvention Terumo)

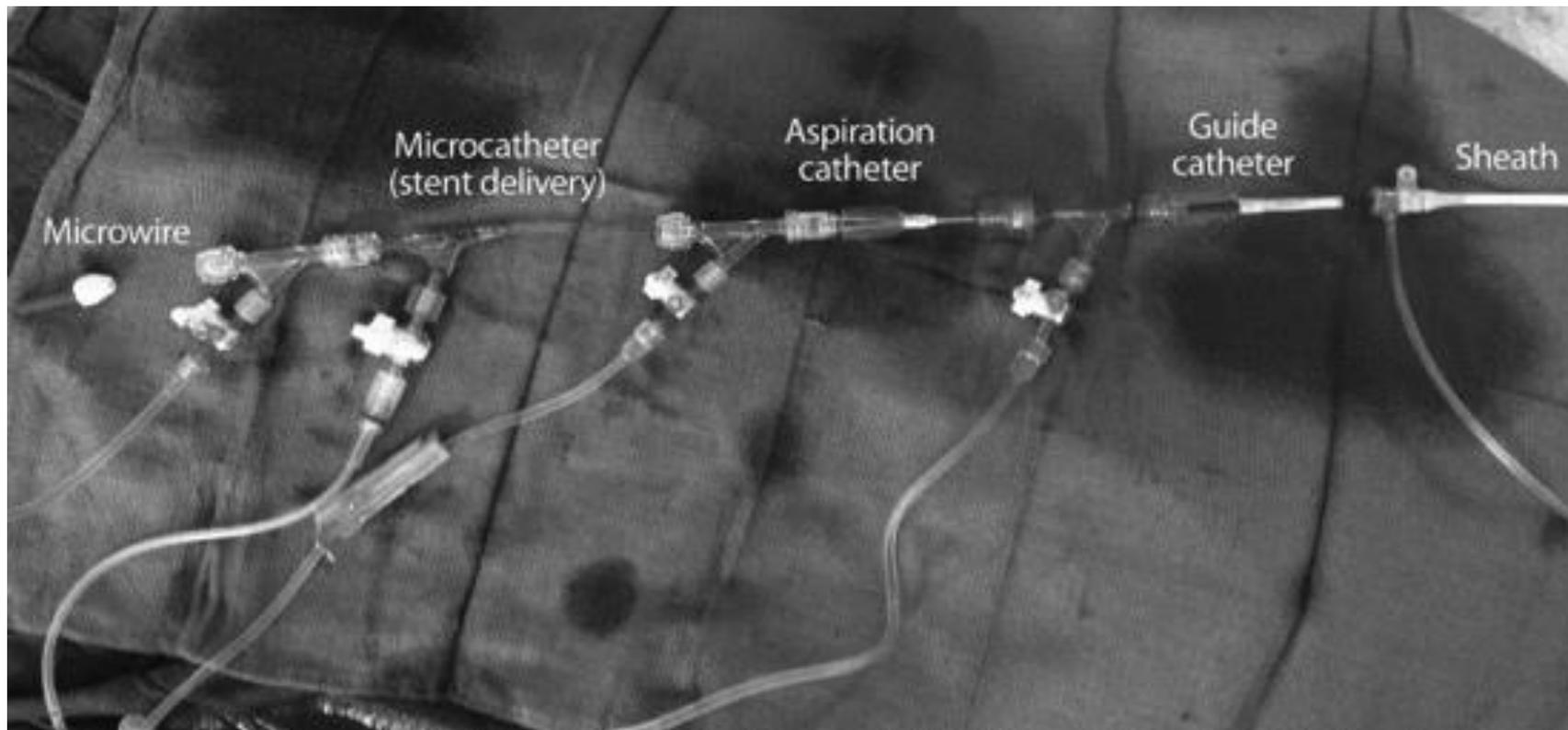
- Stent retriever device

- Solitaire (Covidien)
- Trevo XP (Stryker)
- Embotrap (Neuravi)
- ProVue (Stryker)





Materiali comuni per i due sistemi



Tecniche sincronizzate

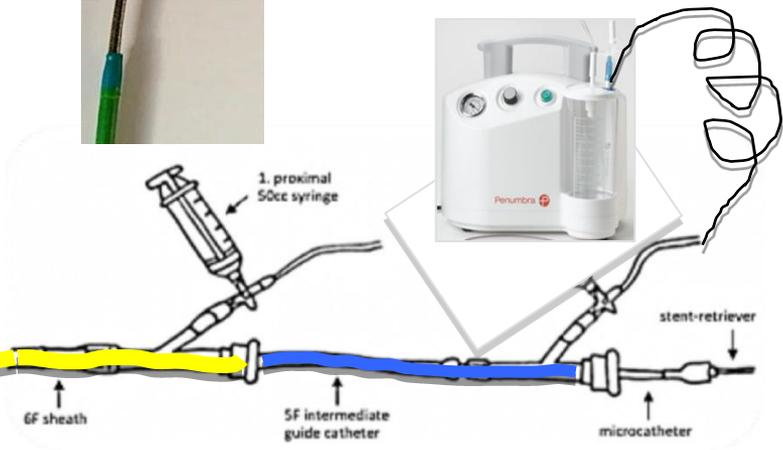
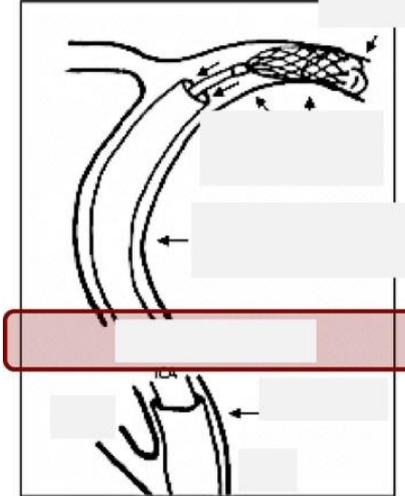
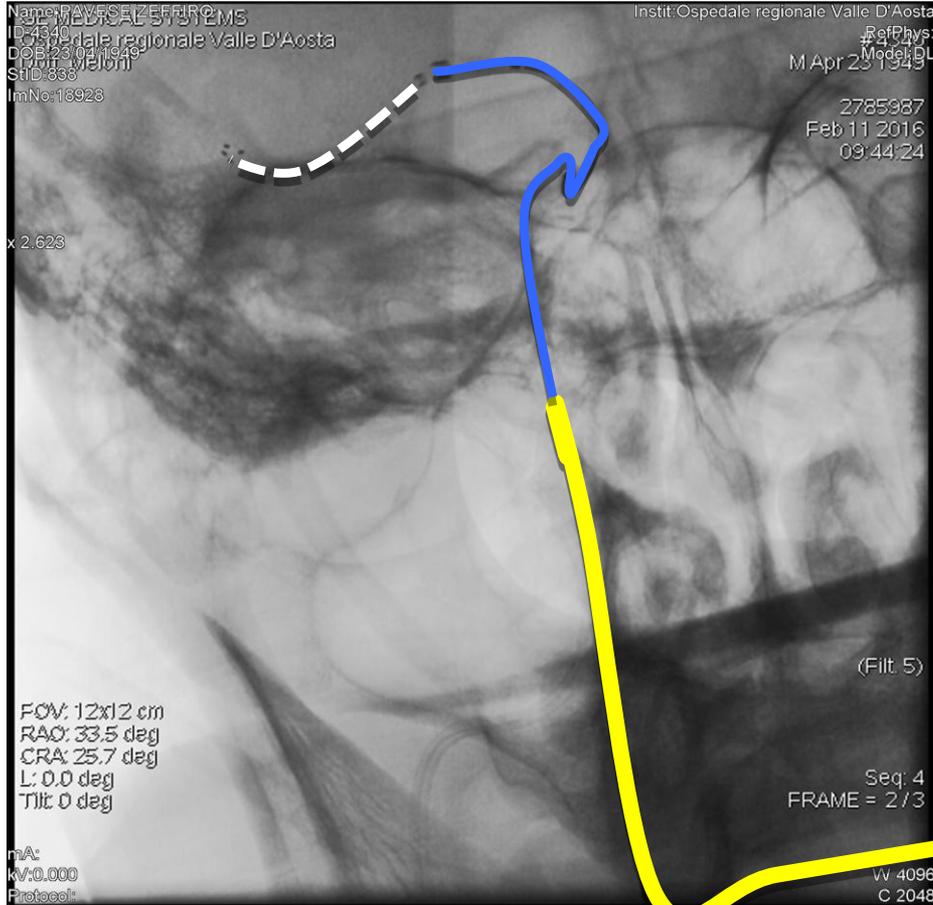
Solitaire Penumbra technique

ARTS Aspiration-Retrivers Technique
for Stroke

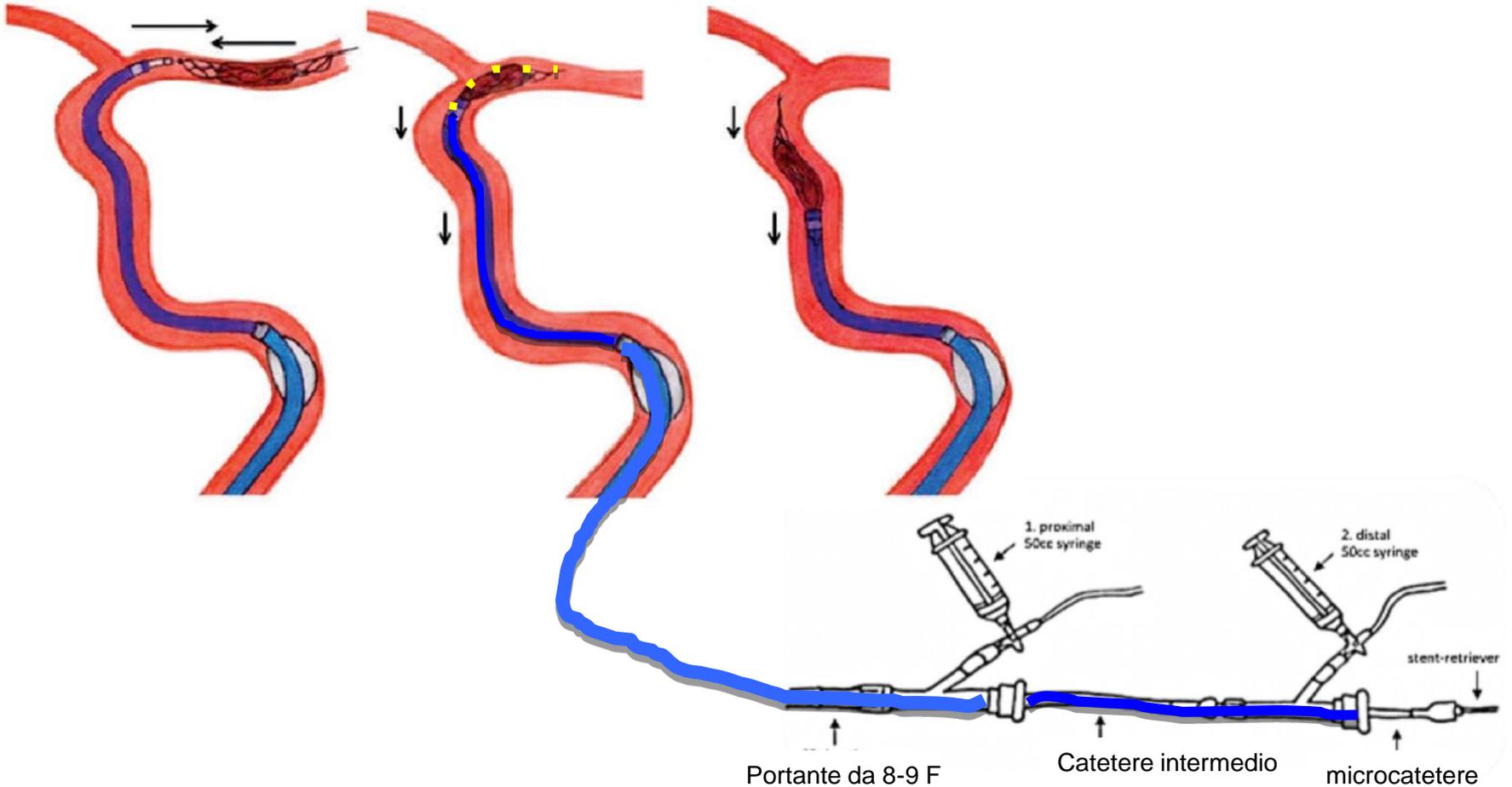


Azienda

Solitaire Penumbra technique



ARTS Aspiration-Retrivers Technique for Stroke





Azienda USL

Tecnica Combinata:

1. Si raggiunge l'occlusione con microguida





Azienda USL

Tecnica Combinata:

2. Navigazione nel vaso occluso con microcatetere su microguida (“blind navigation”)

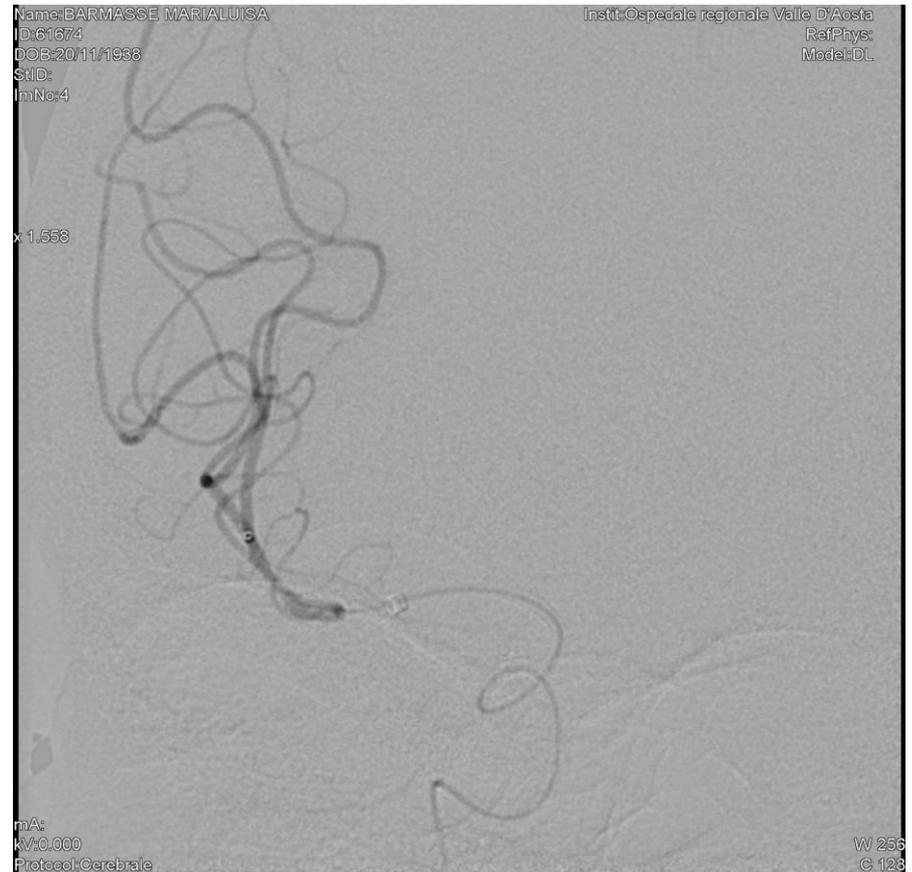




Azienda USL

Tecnica Combinata:

3. Superata l'ostruzione e rimossa la microguida si esegue iniezione superselettiva per verificare l'estensione del trombo e il vaso a

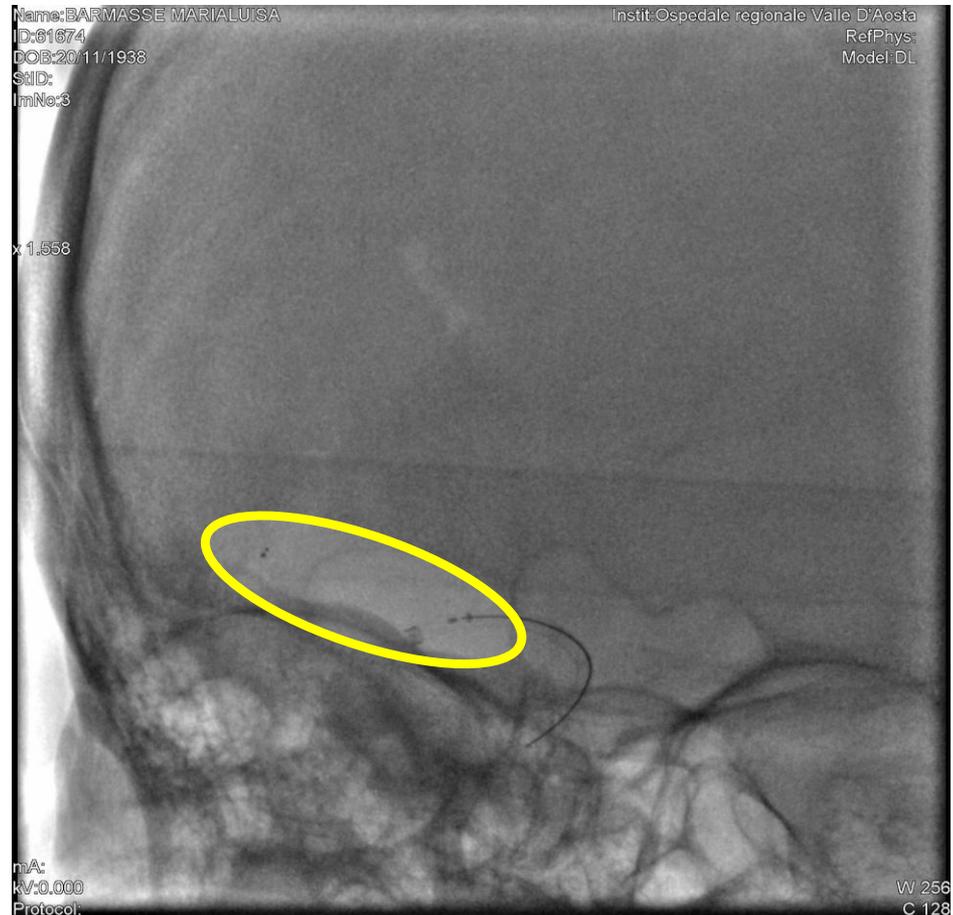




Azienda USL

Tecnica Combinata:

4. Si inserisce lo stent retriever, si esegue apertura dello stesso con estremità distale a valle del trombo e si ritira il microcatetere

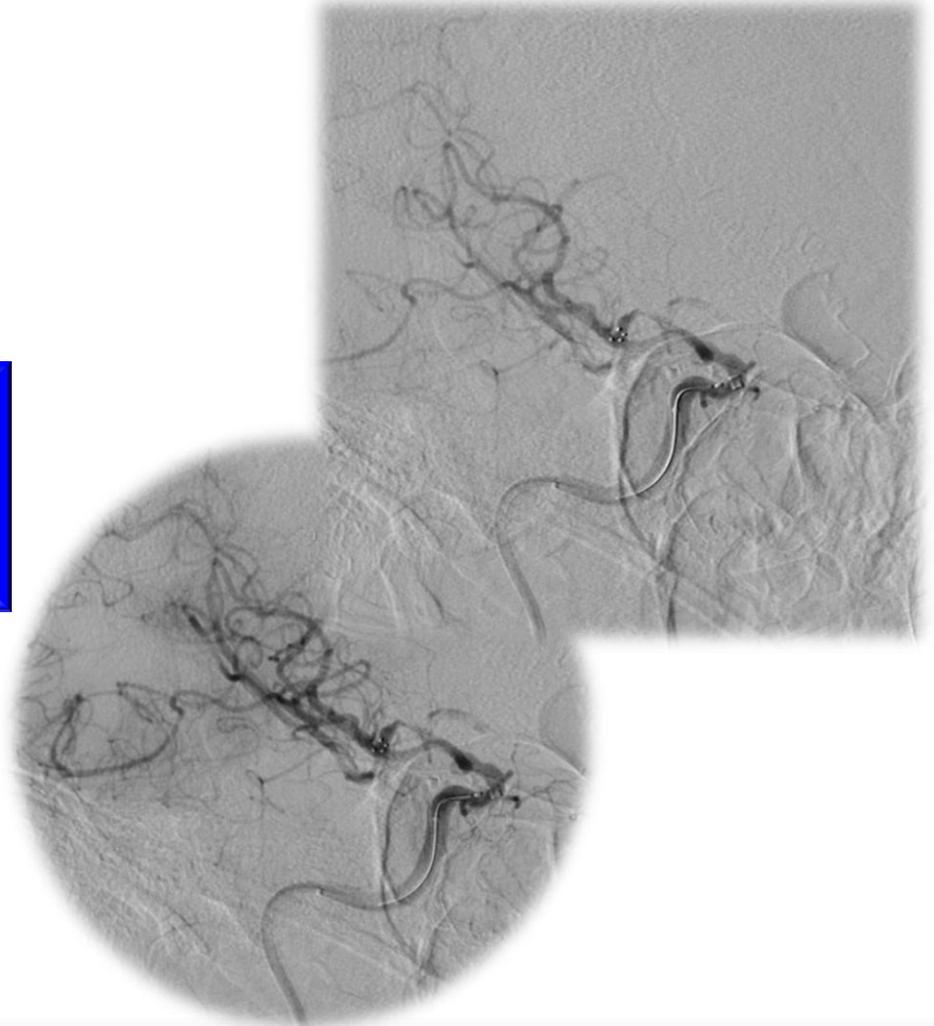




Azienda USL

Tecnica Combinata:

5. Ripristino del flusso nel vaso per by pass temporaneo





Azienda USL

Tecnica Combinata:

6. Si fa avanzare il catetere intermedio (ACE 68) a ridosso del trombo con anchor



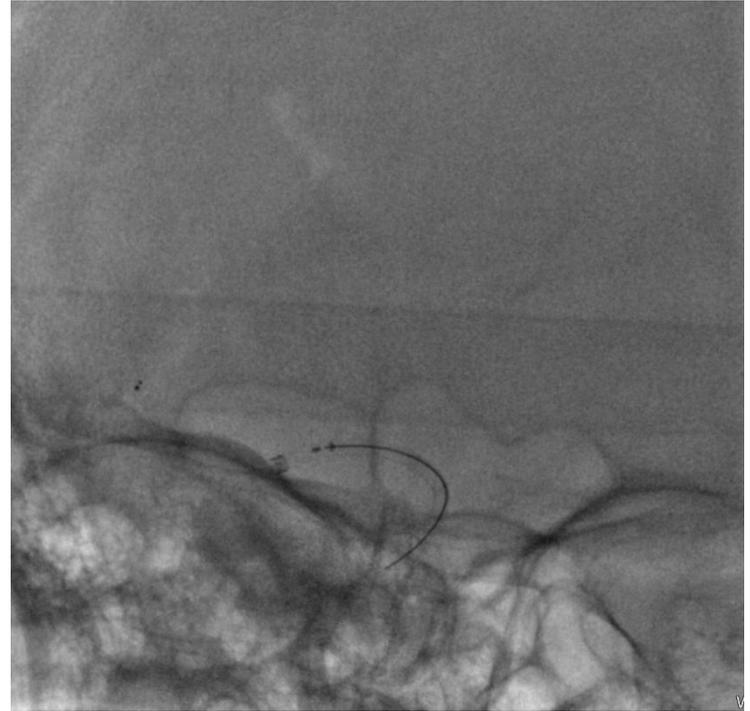


Azienda USL

Tecnica Combinata:

7. Si collega la pompa al catetere intermedio e si inizia

Dopo circa 5 minuti si ritira lo stent dentro il catetere intermedio ed insieme si ritirano tenendo in aspirazione anche il catetere portante

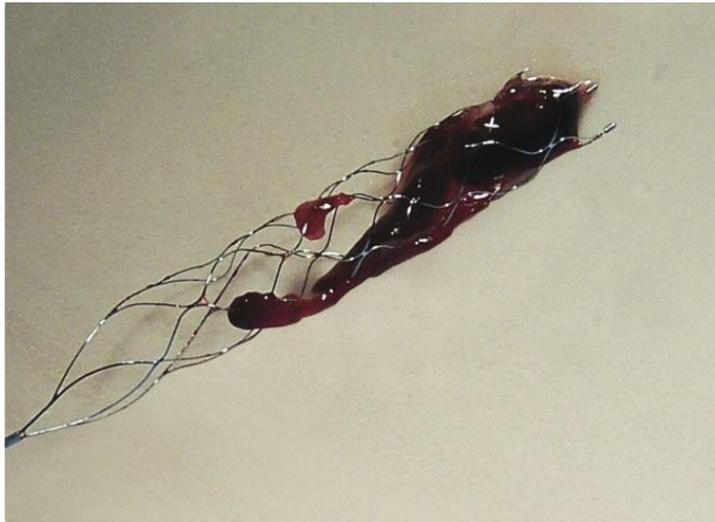


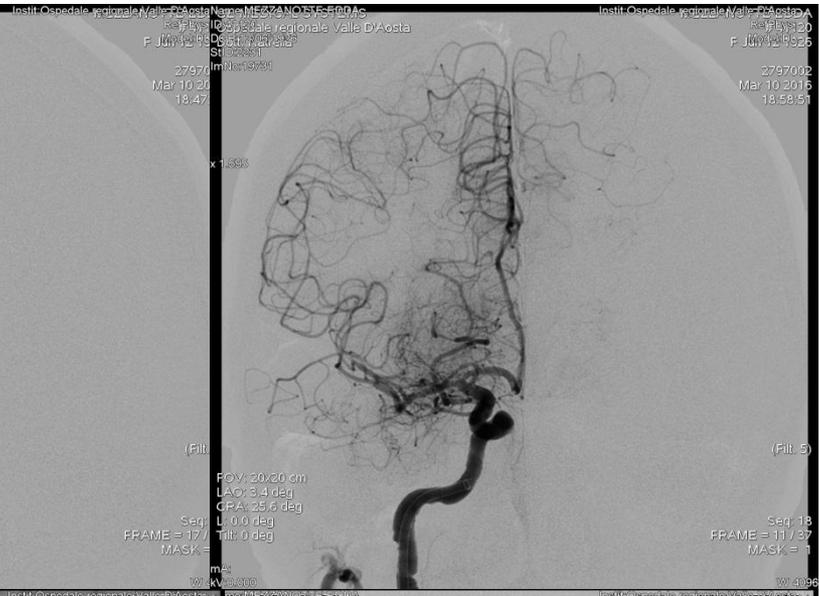
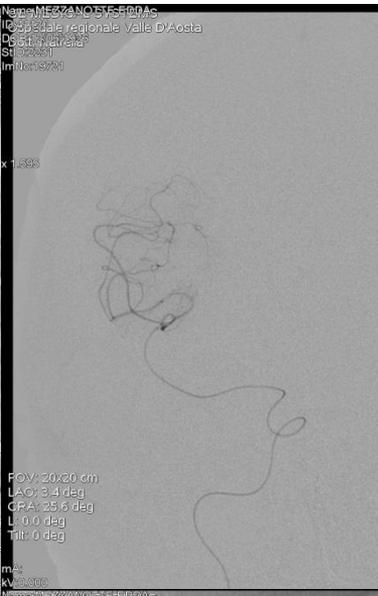
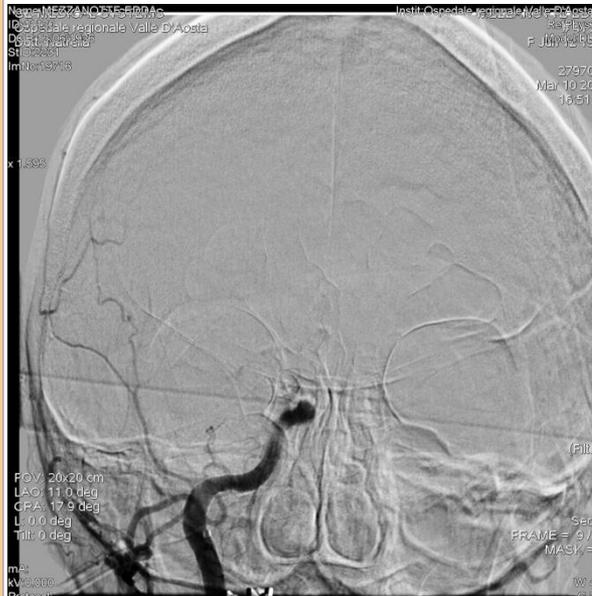


Azienda USL

Tecnica Combinata:

8. Asportazione del trombo mediante recupero dello stent aperto in





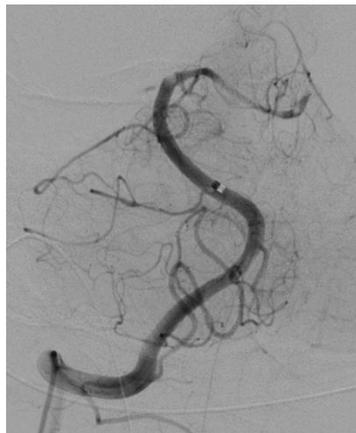
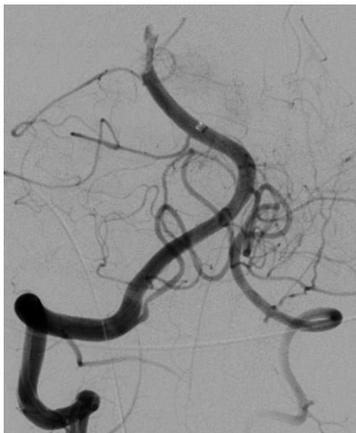
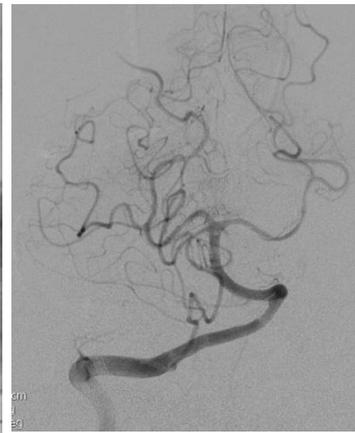
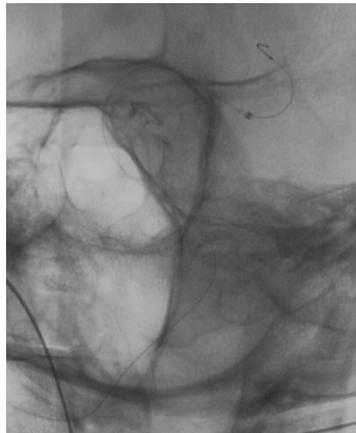
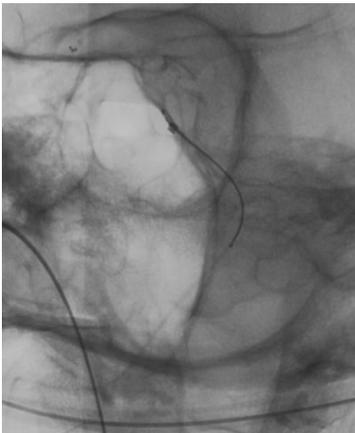
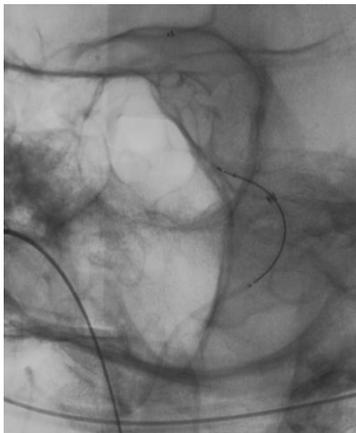
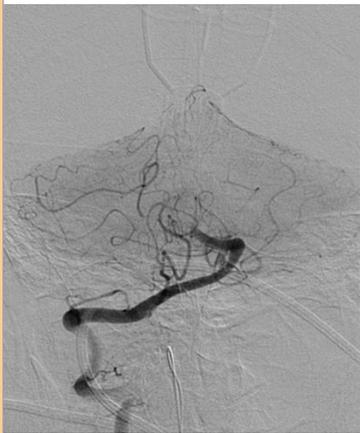




Azienda USL

Tecnica Combinata:

Talvolta sono necessari più passaggi

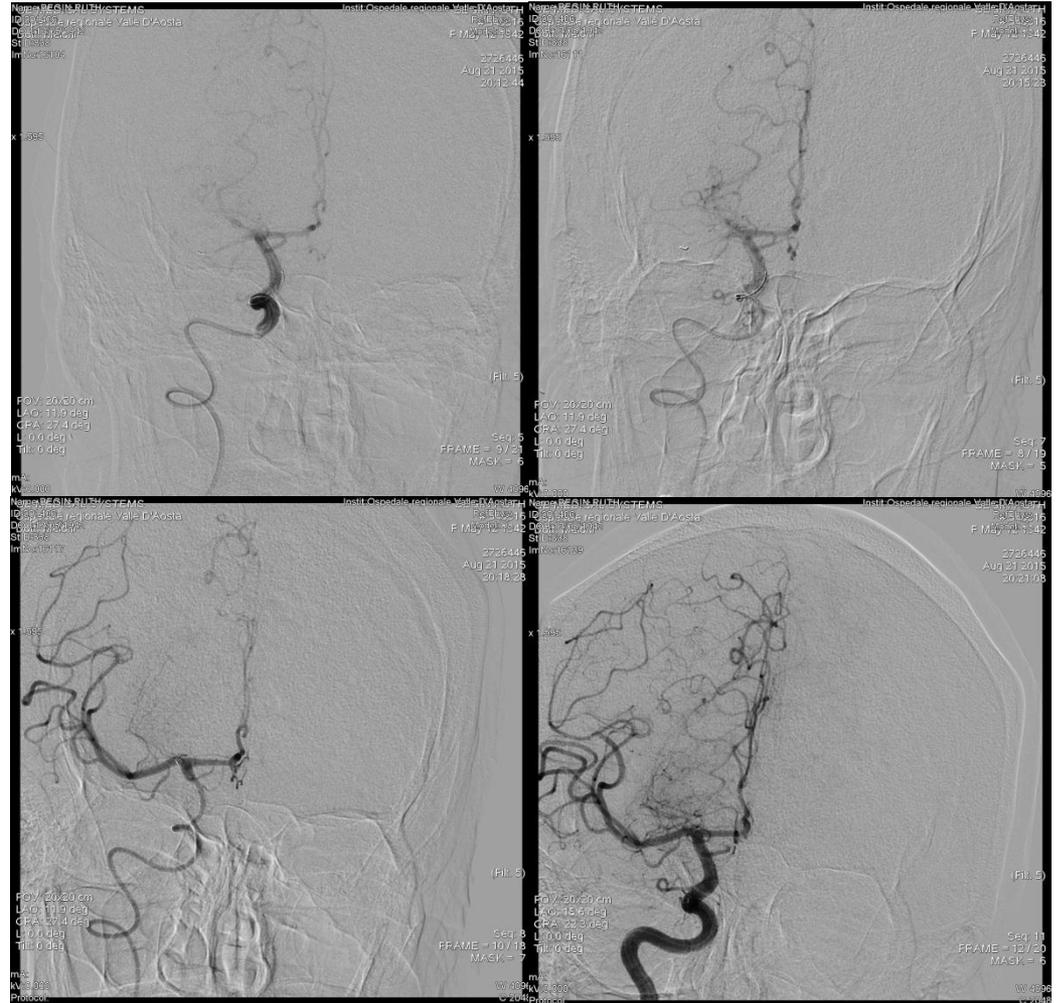




Azienda USL

Tecnica Combinata:

Anchor Technique





Complicanze

Emorragia intracerebrale sintomatica
Emorragia subaracnoidea
Complicanze legate al cateterismo





Conclusioni

- in contemporanea o in sequenza
- riduce i tempi di trattamento
- non è scevra da complicità

TWO IS MEGLIO
CHE ONE

Grazie per l'attenzione



♥ Radiologia ♥ Neuroradiologia ♥

CO

complicanze

CA

catastrofi

IN

insuccessi

E

errori

Rendez-vous di radiologia e neuroradiologia interventistica



Cobalt 27 Co 58.933	Calcium 20 Ca 40.078
Iodine 53 I 126.90	Neon 10 Ne 20.180

Aosta 2018