CERVICAL ARTERY DISSECTION, A GOOD PROGNOSIS DISEASE: ULTRASOUND EVALUATION

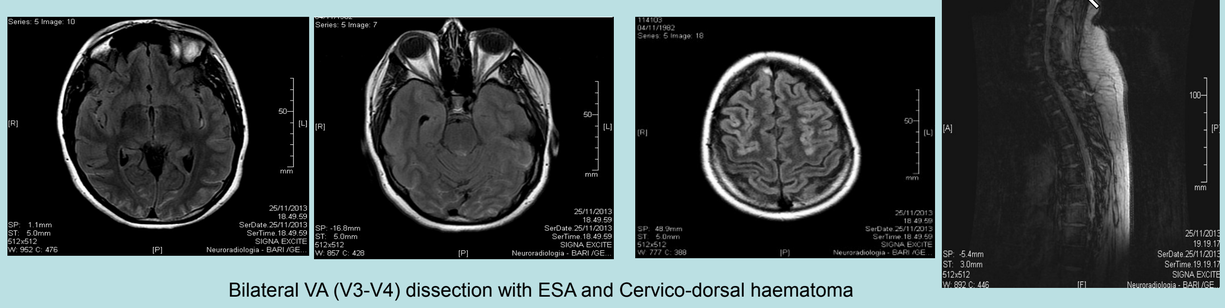
C. Chiapparino, L. Pascazio , S. Cepparulo, A. Bavaro, D.M. Mezzapesa, M. Petruzzellis, F. Federico

Stroke Unit, Neurology Unit, Department of Basic Medical Sciences, Neurosciences and Sense Organs, University of Bari "Aldo Moro", Italy

BACKGROUND: Cervical Artery Dissection (CAD) is a common cause of stroke, especially in the young.
THE GOAL of STUDY is understanding the pathophysiological mechanisms underlying this benign prognosis disease.

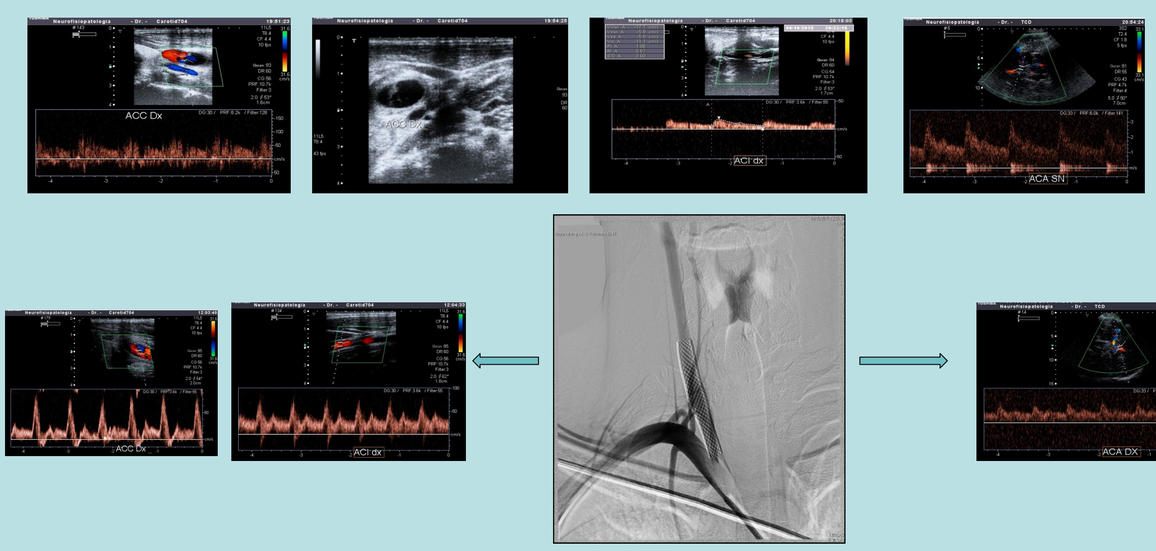
METHODS 39 pts, 28 men and 11 women, (age range 17- 71), with focal neurological signs essentially, were referred to Neurosonology Laboratory. Many patients (pts) were affected by hypertension and six reported recent trauma; all pts underwent in addition to ultrasounds, Neuroimaging and Angiography (AG).

RESULTS Neuroimaging highlighted ischemic injuries in 34 pts and subarachnoid hemorrhage in one subject, therefore 35 subjects received stroke diagnosis, 1 pt TIA diagnosis, the others exhibited local symptoms.



Bilateral VA (V3-V4) dissection with ESA and Cervico-dorsal haematoma

Supra-aortic trunks and Transcranial Color-Coded Sonography showed carotid and vertebral vessels occlusion in 30 pts and stenosis in seven pts, in two pts ultrasonography revealed mild flow increase ascribable to low-grade vessel stenosis in phase of remission, in another two pts. also carotid plaques without lumen stenosis; ultimately intimal flaps and haematoma in two pts, respectively, were observed. Magnetic Resonance AG, Computed Tomography AG or Digital AG confirmed suspicion of CAD at ultrasound. At ultrasonography 32 pts exhibited brain reperfusion, early in 19 and late in 13 cases; in 14 pts reperfusion occurred through compensation, either anterior or posterior, in four cases also leptomeningeal or ophtalmic; 11 pts recanalized through lysis of the thrombus, in the remaining pts flow restoration occurred through both compensation and lysis. The functional outcome was quite good after heparin or aspirin treatment in 33 cases, in four cases after thrombolytic therapy and in one case after stenting.



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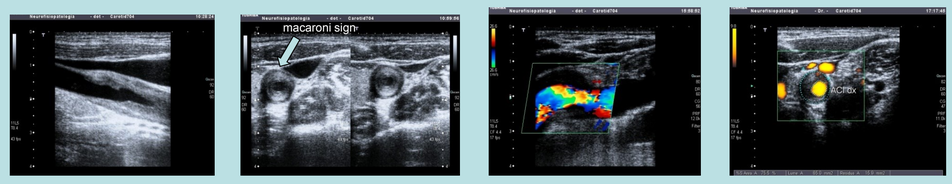
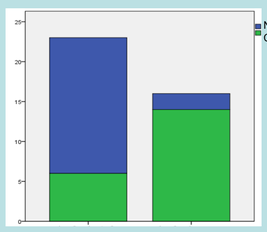
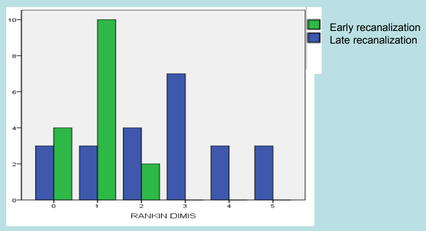


Pt. affected by Takayasu type I Arteritis

Statistical evaluation: a correlation was observed between collateralization, early recanalization and good outcome ,p = 0.005 and < 0.001, respectively. Pts with risk factors exhibited a higher mRS Score in its turn correlating with older age ,p= 0.039. Ultrasonography revealed an 80-90% sensitivity and specificity for steno-occlusion diagnosis compared to AG which instead showed a 60% sensitivity and specificity for detection of compensations.



Late Ricanalization Early Ricanalization



DISCUSSION and CONCLUSIONS

Most pts. exhibited early recanalization mainly due to intracranial collateralization made possible by unaffected extra-intracranial pressure gradients (particulary between heart and carotid vessells, these latter and intra-cranial vessells, and both inter and Intrahemispheric vessels pressure gradients) guaranted by absence of atherosclerotic disease.

In the other cases the favourable outcome depended on the peculiar features of the vascular lesion (haematoma lysis, activation of fibrinolysis etc.) allowing for the reopening of the occluded vessel.
Ultrasonography is an important technique for steno -occlusion and vessel collateralization diagnosis and follow-up as it allows to understand the anatomic and pathophysiological features of vascular lesions and the benign prognosis of the disease under study.

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