Publication Brief

Microsurgical clipping of intracranial aneurysms assisted by green indocyanine videoangiography (ICGV) and ultrasonic perivascular microflow probe measurement

Della Puppa A, Scienza R et al, Dept. Neurosurgery, Padua Univ. Hospital, Padova, Italy. alessandro.dellapuppa@sanita.padova.it.

OBJECTIVE
To assess the surgical and clinical outcome of intracranial aneurysm clipping performed combining the assistance of green indocyanine videoangiography (ICGV) and ultrasonic perivascular microflow probe.

PATIENTS & METHOD
Data from patients affected with intracranial aneurysms who underwent microsurgical clipping assisted by both techniques between May 2012 and April 2013 were retrospectively evaluated.

RESULTS
- Enrollment: 26 patients with 34 aneurysms (25 unruptured);
  - Clip needed repositioning in 11 aneurysms, 32% of the total, because
    - In 8 cases (23%) significant flow reduction was detected by post-clipping flow measurement.
    - A dome remnant showed with ICGV prompted a second clipping repositioning in 3 cases (9%)
  - Final microprobe and ICGV assessments showed a complete exclusion of the aneurysm in all cases, without evidence of vascular flow impairment.
  - Postoperatively, 1 patient (3%) presented a residual neck aneurysm.
  - No permanent morbidity was reported.

CONCLUSIONS
Microsurgical clipping of intracranial aneurysms assisted by green indocyanine videoangiography (ICGV) and ultrasonic perivascular micro-flow probe measurement may provide high exclusion rate in the treatment of cerebral aneurysm with very low morbidity in selected patients.

TRANSONIC COMMENT
- The Charbel Micro Flowprobe® was used in all 26 cases and proved to be useful in telling the surgeons that flow was compromised in 23% of cases after the clip was first positioned.
- Cerebrovascular neurosurgeons at Padua are European pioneers in using intraoperative flow measurements to confirm optimum clip placement, for they have used the Charbel Micro Flowprobe® for a number of years.

REFERENCES