

Cerebral microembolic signals in cardiac interventions

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Cerebral microembolic signals in cardiac interventions

Loes Dorien Christien Sauren

Maastricht, 15 december 2009

1. To reduce the generation of microemboli in the cardiopulmonary bypass system, perfusionists should use a shunt during blood sampling. *(this thesis)*
2. The amount of cerebral emboli during percutaneous pulmonary vein ablation varies significantly among various ablation devices. *(this thesis)*
3. A surgical, epicardial pulmonary vein ablation can limit the number of cerebral emboli when compared to the percutaneous endocardial approach. *(this thesis)*
4. Ultrasound sonication at the origin of the brachiocephalic trunk diverts microemboli into the descending aorta and, thus, reduces the amount of cerebral microemboli during heart surgery. *(this thesis)*
5. An algorithm based on the raw backscattered radiofrequency ultrasound signal from the cerebral vessels provides a more accurate counting of cerebral microemboli in an “embolic shower” than conventional Doppler based algorithms or Doppler based human listening. *(this thesis)*
6. Differentiation between solid and gaseous cerebral microemboli by TCD monitoring would provide new perspectives on the risk for neurological complications of cardiac interventions.
7. Intraoperative TCD monitoring contributes to reducing the risk of cardiovascular interventions.
8. Periprocedural monitoring might improve the outcome of a given patient, even in the absence of evidence from large patient trials.
9. Not everything that counts can be counted, and not everything that can be counted counts. *(Albert Einstein)*
10. Ook buiten de hartchirurgie en cardiologie moeten we de hersenen (ratio) niet uit het oog verliezen in hart (gevoels) kwesties.