Fr.OS-1.2 ME Research in Asia Pacific Rim Region and Europe

10:00 – 12:00 (第1会場／Room 1)

Fr.OS-1.2-5
Development of in-vitro experimental devices for in-situ evaluation of hemodynamic effects induced by endovascular devices and their deployment

Simon Tupin (Tohoku University)  Hitomi Anzai (Tohoku University)  Makoto Ohta (Tohoku University)

Endovascular devices are medical devices inserted into the arteries in case of aneurysm. This minimally invasive treatment is preferred in case of aged patient. The number of commercially available device designs increased on the market but no data exist regarding direct comparisons of their performance, difficult to perform in vivo. The purpose of this research is to create in vitro experimental platforms allowing the study of the influence of those medical devices by monitoring the hemodynamic changes occurred during their deployments. Precise multi-scale evaluation of pressure and flow rate into the arteries surrounding the aneurysm are performed and synchronized to each step of the medical procedure. Further analysis are also conducted on the geometry of the deployed devices and flow pattern changes after deployment. As a proof of concept, studies of the treatment of an abdominal aortic aneurysm and an intracranial aneurysm are presented.