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Conceptual idea for brain tumour treatment through intra-arterial pathways

There are many invasive (removal of the tumour tissue through skull based access) and non-invasive medical treatment strategies (mainly radiation therapy); very often also a combination of both. We have created a new device that would allow using the vascular structure as a possible pathway for treating intracranial diseases. One option would be the placement of radiation seeds directly into a brain tumour. The main issues with this catheter based approach are the defined puncture of the vessel, the prevention of liquid exchange (blood / brain), sealing of the vessel after the procedure, and the accurate placement and control of the procedure using external diagnostic imaging. The catheter based device guided and controlled by 3D X-ray (ArtisZeego, Siemens Healthcare, Erlangen, Germany), is presented consisting of a one-sided triple-hole balloon, a tube feeding this balloon and a second tube combined with a guide assistant for the puncture and treatment. 3D shaped X-ray markers allow accurate placement. The presented pathway could be an alternative tumour access and particularly well suited for placements of small radioactive seeds.

Biography

Michael Friebe PhD, has been involved in diagnostic imaging and image guided therapeutic products and services, as founder/innovator/CEO investor and scientist. He currently is a Board Member of two startup R&D companies, as well as investment partner of a medical technology startup-fund. He is an Affiliated Professor with the Chair for Computer Aided Medical Procedures (CAMP) at TU München, and full Professor of Image Guided Therapies at the Otto-von-Guericke-University in Magdeburg, Germany. He is listed inventor of more than 60 patent applications and the author of numerous papers.

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