

MEDICAL INTERVENTIONAL PROCEDURES USING AN MRI-BASED ROBOTIC PLATFORM CAPABLE OF AUTOMATICALLY NAVIGATE UNTETHERED MICRO-NANO-ENTITIES IN THE BLOOD VESSELS

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Abstract: Our group recently demonstrated that a clinical Magnetic Resonance Imaging (MRI) system can be adapted to automatically navigate ferromagnetic objects in the blood vessels. This new type of medical robotic platforms where closed-loop control is used to target inside the cardiovascular network has many applications in interventional medicine. As an example, targeting tumours could be envisioned in some instances where secondary toxicity in chemotherapy is a concern. But the use of such robotic platforms requires important changes in the way medical interventions are conducted as described in this paper.