

# Look ma, no hands! A 3D-prototype proof-of-concept ultrasound probe holder for hands-free therapeutic hysteroscopic

**Rahmah Rashidah Hashim<sup>1</sup>, Joseph Vermont Chaozhou Teng<sup>1</sup>, Nur Hafiza Mohd Zaharudin<sup>2</sup>, Fatimah Ibrahim<sup>2</sup>, Aizura Syafinaz Ahmad Adlan<sup>1</sup>**

<sup>1</sup>Department of Obstetrics and Gynaecology, Faculty of Medicine, Universiti Malaya, Kuala Lumpur, Malaysia, <sup>2</sup>Department of Biomedical Engineering, Faculty of Engineering, Universiti Malaya, Kuala Lumpur, Malaysia

## **ABSTRACT**

**Introduction:** Therapeutic hysteroscopy is the gold standard in managing intrauterine growths and abnormalities. An assistant usually needs to hold the ultrasound probe during procedure for the operator to visualize the surgery and avoid complications/perforations. **Case Description:** We presented in OGSM before, a simple, cost-effective “self-retaining-hands-free probe method fashioned out of simple daily materials such as water bottles and elastic bands to place the ultrasound probe in the centre on the abdomen. We have now taken the step in realizing this goal by collaborating with Biomedical Engineering to design and manufacture our first physical 3D prototype of self-retaining ultrasound probe holder. **Discussion:** With a very low complication rate of 0.15% amongst the 2,680 cases done with the makeshift prototype, we believe that with this upcoming 3D prototype, the complication rate will be further minimized and this device may facilitate efficient and safe ‘single handed’ therapeutic hysteroscopic surgeries; which is very apt in the current situation affecting our country: lack of healthcare staff.