A diagnostic robot for remote prenatal ultrasound exams

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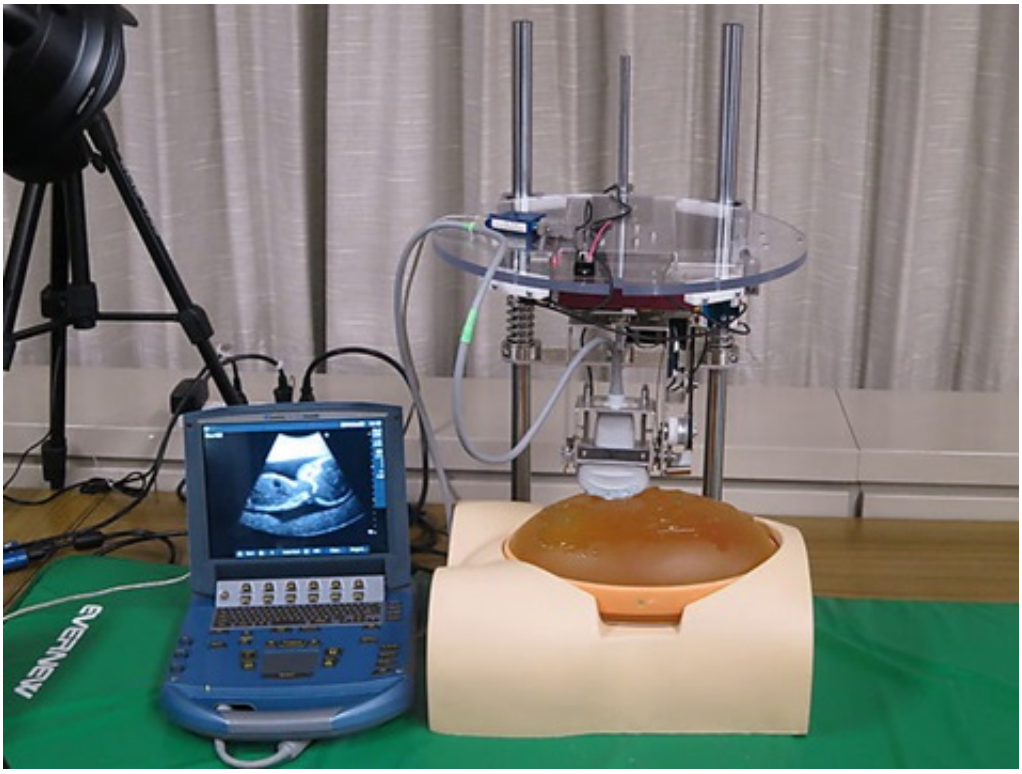

World's first demonstration of the ultrasonic diagnostic robot in January 2014. Credit: Waseda Universiy

A Japanese researcher is developing a robot that can conduct prenatal ultrasound exams on pregnant women in remote locations.

Although previously considered, the medical examination of pregnant

women from a remote location had never been attempted due to safety concerns, such as those relating to the weight of the diagnostic equipment. To address this, Professor Hiroyasu Iwata of Waseda University has designed a structure that supports the weight of the machine, thus reducing the potential burden on a patient's body.

"This research was motivated by my desire to shorten the response time for emergency prenatal care in the Tokyo metropolitan area," says Dr Iwata. "Eventually, I want to use this technology for at-home and remote area medical examinations."

"Our central challenge is to prove its applicability to a real pregnant woman whose stomach is growing larger and larger," he adds. Last November, in an experiment involving two expecting mothers, "we confirmed the robot's ability to follow the shape of their abdomens and obtain ultrasound echo images. The head, hands and feet of each foetus were clearly visible, which increases our motivation to make this technology a practical reality."

Dr Iwata says the next step is to have a practicing physician conduct a trial on the robotic device in an obstetrics clinic and obtain feedback from patients over a one to two month period.

Provided by Waseda University