

ROLE OF ROBOTIC INTRAOPERATIVE ULTRASOUND (RIOUS) IN TWO CASES OF SUCCESSFUL MYOMECTOMY USING MINIMALLY INVASIVE GYNECOLOGIC SURGERY

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BACKGROUND:

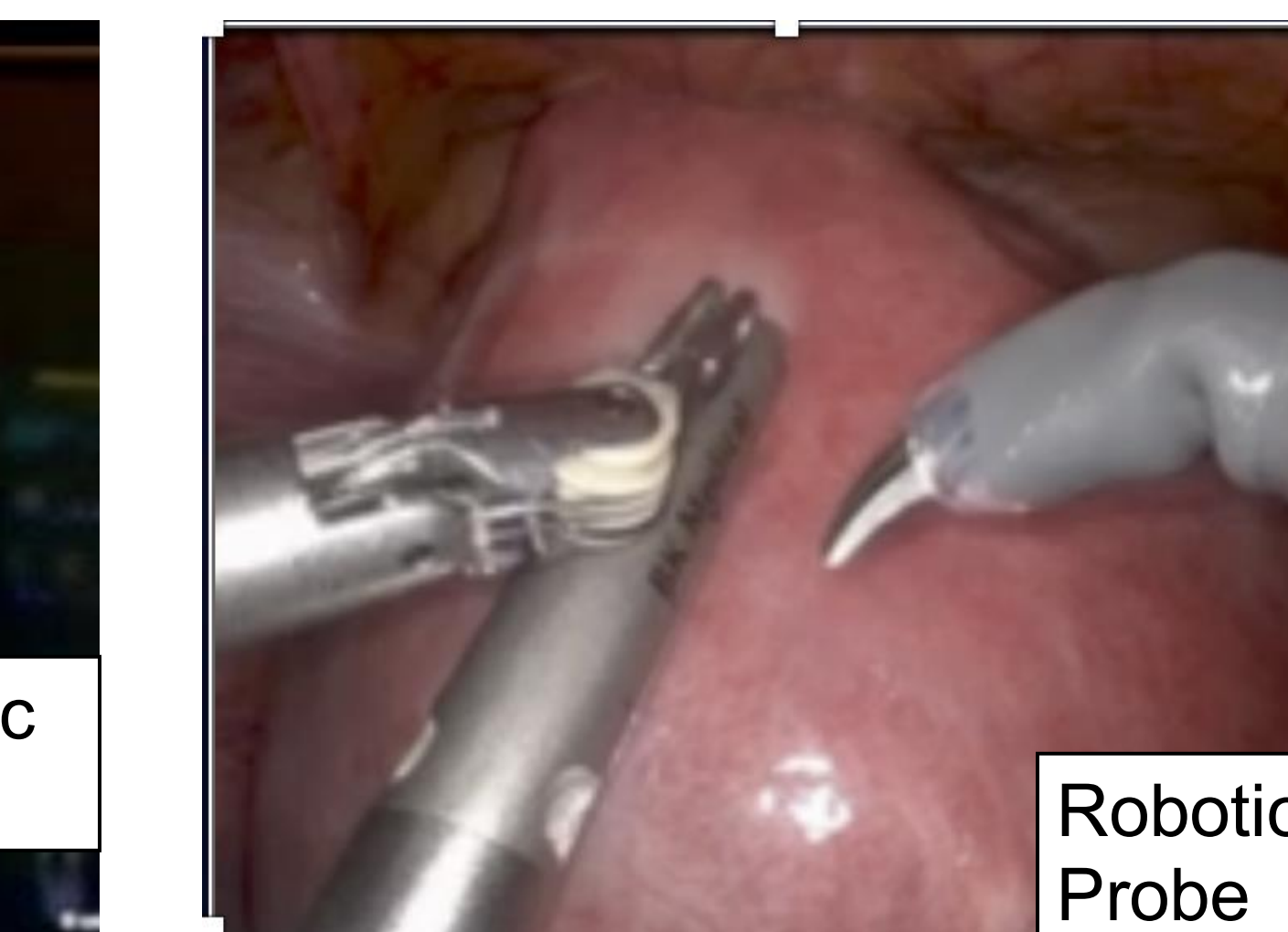
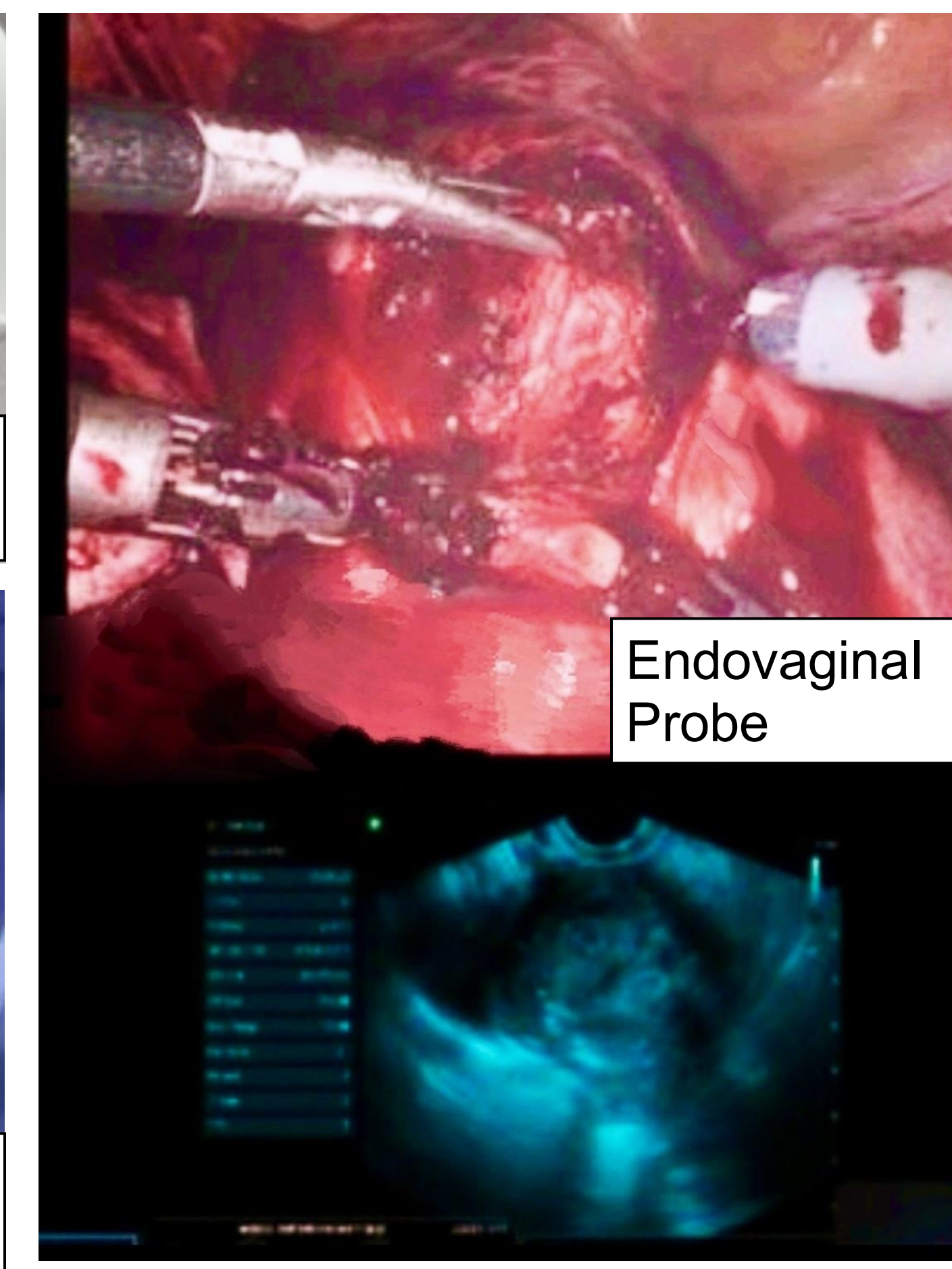
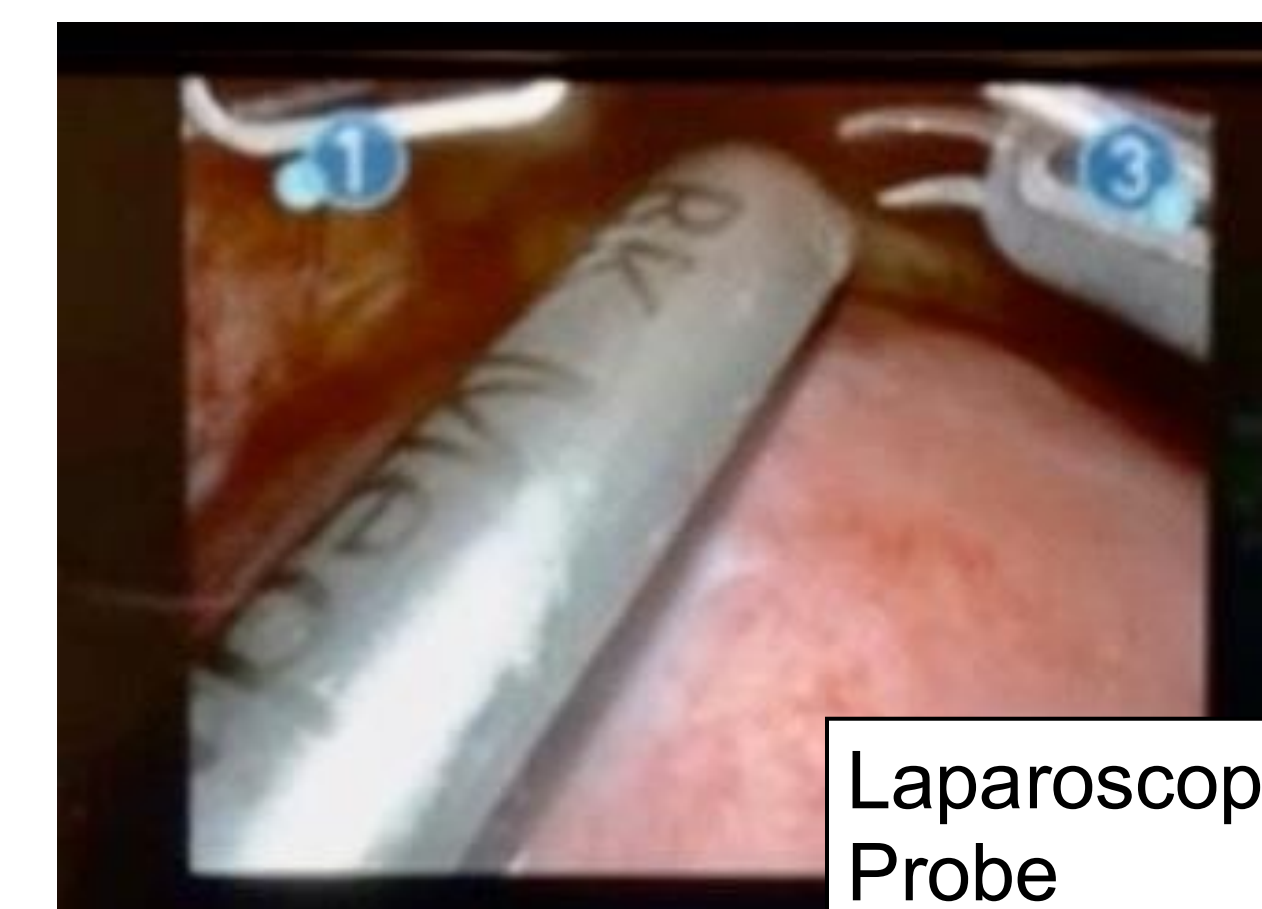
Ultrasound has long been the standard in diagnosing Obstetrical and Gynecologic disorders. With the rise of minimally invasive surgery and robotic approach, ultrasound also paved the way for safer procedures with less complications through intraoperative ultrasound (IOUS) (Grewal, et al, 2021)

MIS is preferred since it provides faster recovery and better surgical outcomes, however it has limited view and tactile feedback. In order to overcome these challenges, advancements have been made on image-guided robotic approaches through improvement of ultrasound probes. (Paovone, 2024).

CASES:

Patient A is a 39 year old, G0, with irregular menstrual cycles, and obese class II by Asian BMI. She is diagnosed with multiple myoma uteri and PCOS and was given oral contraceptive pills for medical treatment of PCOS. TVS result showed FIGO 6 myoma, measuring 7.4x 6.1x 7.3cm on the left uterine posterior wall.

Patient B is a 36 year old, G1P1(1001), is diagnosed with abnormal uterine bleeding due to multiple myoma. Her pelvic ultrasound results showed FIGO grade 3 myoma measuring 8.2x 8.4x 9.4cm on the posterior wall, and a FIGO grade 4 myoma measuring 2.1x 1.8x 2.1cm on the anterofundal area.



DISCUSSION & CONCLUSION:

These two cases underwent intraoperative ultrasound with the use of an endovaginal, laparoscopic and a robotic ultrasound probe which were integrated with the TilePro function of the daVinci Xi. It provided an actual 3D view with the real-time ultrasound imaging in the console screen which significantly improved surgical outcomes in patients with symptomatic multiple myomas.

Robotic surgery provides 3D vision, however there is limited tactile feedback and underlying structures can not be seen. Robotic intraoperative ultrasound (RIOUS) enhances the robotic 3D vision which allows real-time ultrasound imaging that provides visualization of the depth and extent of the lesions.

Accurate localization, myoma mapping and identification of vascular supply reduces unnecessary incisions in the uterine wall. Integration of color doppler ultrasound helps identify vascular supply which allows precise incision and tissue dissection and repair, ensuring complete enucleation and removal of multiple myomas, resulting to less blood loss and confirmation of the integrity of sutures avoiding formation of dead-space hematomas, which leads to better surgical outcomes