

THE USEFULNESS OF INTRAOPERATIVE ULTRASONOGRAPHY IN THE TRANVAGINAL MESH REPAIR FOR PELVIC ORGAN PROLAPSE

Hypothesis / aims of study

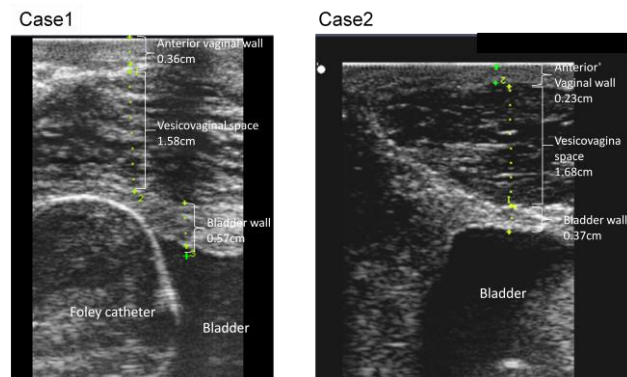
The transvaginal mesh (TVM) technique is now widely used as a minimally invasive surgery for the management of pelvic organ prolapse (POP) [1]. In TVM technique, full thickness vaginal dissection is recommended. Effective hydrodissection is important to identify appropriate dissection planes in TVM technique. Effective hydrodissection can be achieved through precise guidance of the tip of the injection needle into the space. Intraoperative ultrasonography may be a tool that provides valuable information for dissection procedures and placement of mesh. The aim of the present study is to clarify usefulness of intraoperative ultrasonography for the dissection procedure during TVM surgery for POP.

Study design, materials and methods

Between November 2009 and March 2010, 20 consecutive patients with POP were included in this study. The TVM surgery was performed according to the procedure reported by the French TVM group [1]. During the surgery, intraoperative ultrasonography was performed using a linear-array contact ultrasound probe. At first, the thickness of vaginal wall was assessed by ultrasonography. Then, the insertion of injection needle and hydrodissection were monitored by real-time ultrasonography. Following hydrodissection, the thickness of vaginal, bladder, and rectal wall, vesicovaginal and rectovaginal space was assessed. According to thickness of each layer after hydrodissection, dissection of vaginal wall was performed.

Results

Ultrasonographic measurement of vaginal wall thickness revealed 4.2mm and 2.4mm in the anterior and posterior compartment, respectively. Real-time ultrasonography revealed distension of the vesicovaginal and rectovaginal space between vaginal epithelium and bladder/rectal wall during injection of saline with diluted epinephrine. The dissection was performed according to ultrasonographic measurement. According to thickness of each layer after hydrodissection, the dissection of vaginal wall was safely performed in all cases. Representative ultrasonography images by a linear-array probe are shown as follows.



Interpretation of results

The present study clarifies that the usefulness of intraoperative ultrasonography in dissection procedures during TVM surgery. To our knowledge, this is the first study to demonstrate the role of intraoperative ultrasonography for precise hydrodissection and safe dissection during pelvic reconstructive surgery. Our study has showed that the determination of vaginal wall thickness is important to guide the needle tip into the space. Effective hydrodissection achieves safe hydrodissection.

Concluding message

Intraoperative ultrasonography is a valuable tool for safe TVM surgery.

References

1. Fattouh B, Amblard J, Debodinance P, et al : Transvaginal repair of genital prolapse: preliminary results of a new tension – free vaginal mesh(Prolift™ technique) a case series multicentric study. Int Urogynecol J Pelvic Floor Dysfunct, 18 : 743-752, 2007.

Specify source of funding or grant	none
Is this a clinical trial?	Yes
Is this study registered in a public clinical trials registry?	No
Is this a Randomised Controlled Trial (RCT)?	No
What were the subjects in the study?	HUMAN
Was this study approved by an ethics committee?	Yes
Specify Name of Ethics Committee	Kameda Medical Center Ethics Committee
Was the Declaration of Helsinki followed?	Yes
Was informed consent obtained from the patients?	Yes