

Imaging Study of Bladder Wall Invasion by Endophytic Type Cervical Cancer (II): Stage IV Bladder Wall Invasion on Ultrasound Classification

Wen-Chen Huang, M.D.^{1,2,3}, Shwu-Huey Yang, Ph.D.⁴, Jenn-Ming Yang, M.D.^{2,5}

Department of Obstetrics and Gynecology¹, Cathay General Hospital, Taipei, Taiwan; School of Medicine², Taipei Medical University, Taipei, Taiwan; School of Medicine³, Fu Jen Catholic University, Taipei, Taiwan; School of Nutrition and Health Sciences⁴, Taipei Medical University, Taipei, Taiwan; Division of Urogynecology⁵, Department of Obstetrics and Gynecology, Shuang Ho Hospital, Taipei, Taiwan; E-mail: yangjm0211@hotmail.com

BRIEF HISTORY

A 60-year-old, gravida 5, para 4, postmenopausal woman presented at our urogynecologic clinic with symptoms of frequent urination, nocturia, urgency and urge incontinence for 2 months in addition to postmenopausal bleeding for 1 week. Her medical and surgical histories were unremarkable. She had never undergone a Pap test prior to this admission.

CLINICAL EXAMINATION

Her pelvic examination revealed an expanded and mildly eroded cervix, as well as a palpable tumor extending to the left side of the pelvic wall. Urinalysis results revealed hematuria (26-50 RBC/HPF) and pyuria (numerous WBC/HPF).

IMAGING STUDIES

Transvaginal ultrasound with Doppler flow mapping demonstrated an infiltrating tumor with hypervascularity in the cervix, trigone and posterior bladder wall (Fig. 1A). The echogenic boundary between the cervix and posterior bladder wall was lost. In addition, a tumor projec-

tion was noted in the posterior bladder wall over the trigone (Fig. 1B). Whole abdominal computerized tomography revealed a heterogenous, low to moderate enhancing lesion in the cervix with the involvement of the myometrium and bladder wall (Fig. 2). Moreover, multiple enlarged lymph nodes were noted in the para-aortic region and bilateral iliac chains. Cystoscopy illustrated that the posterior bladder wall was compressed and elevated (Fig. 3A) with a polypoid tumor (Fig. 3B). Proctosigmoidoscopy results were unremarkable showing a small rectal polyp.

MANAGEMENT

Given the suggestion of advanced disease based on the findings obtained from a comprehensive cancer analysis, concurrent chemoradiotherapy (CCRT) was arranged for this woman.

COMMENT

With the recent introduction of high-resolution vaginal probes, Doppler angiography, and 3D scanning techniques, the serial changes of the bladder wall infiltrations can be clearly demonstrated on ultrasound [1]. Disruption of the endopelvic fascia without involvement of

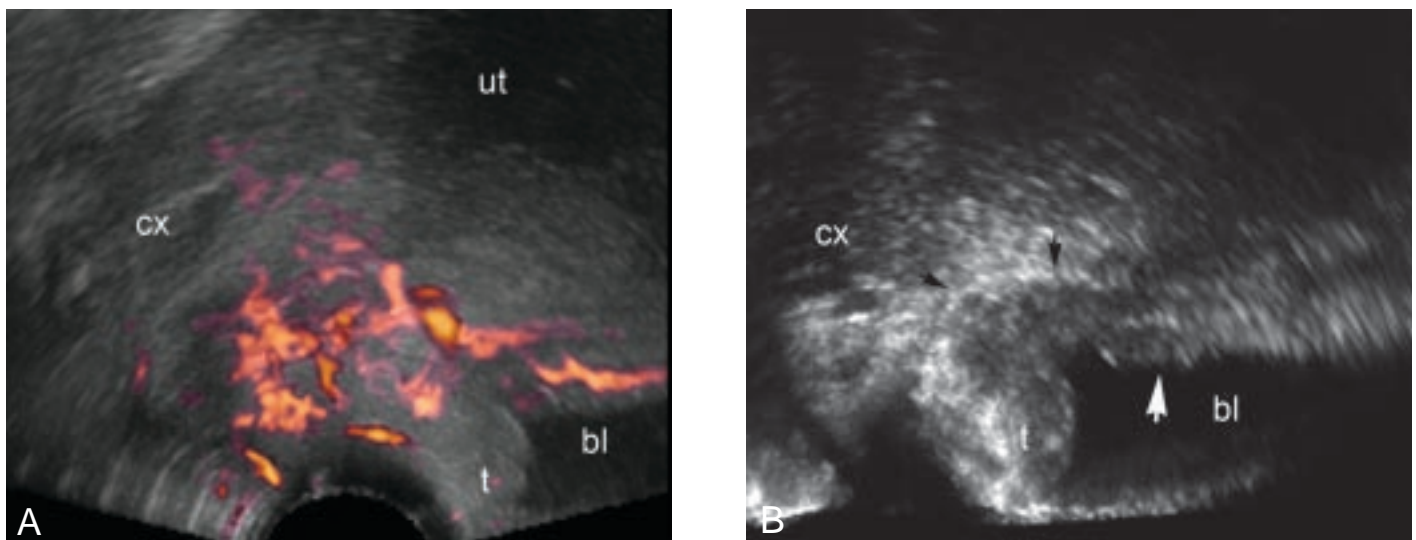


Fig. 1. Transvaginal ultrasonography demonstrates that a hypervascular tumor infiltrates the cervix, trigone and posterior bladder wall (A) and that the echogenic boundary between the cervix and posterior bladder wall is lost (black arrows) (B). There is a polypoid projection (white arrow) located in the posterior bladder wall over the trigone. (ut = uterine corpus; cx = cervix; bl = bladder; t = trigone)

the inner bladder wall was the initial stage of bladder wall invasion (stage I). In patients with complete tumor penetration, the inner bladder wall may lose its normal structure and texture because of infiltration of the invasive tumor (stage IV) (Fig. 4).

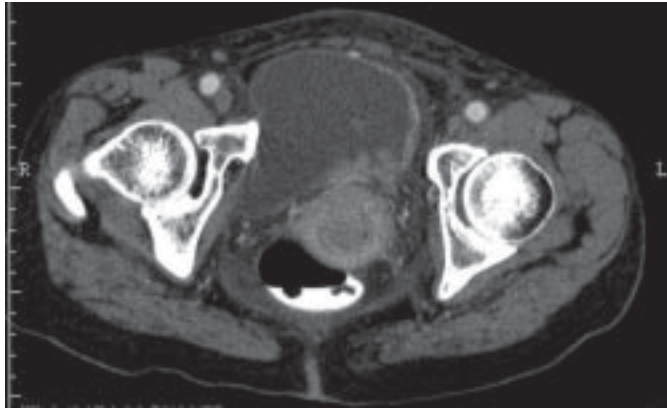


Fig. 2. Whole abdominal computerized tomography reveals a heterogeneously low to moderate enhancing lesion in the cervix with involvement of myometrium and bladder wall.

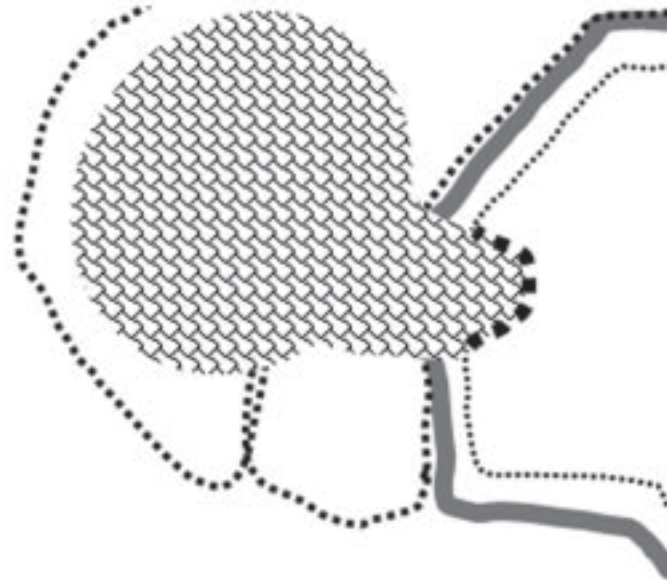


Fig. 4. Schematic diagram illustrating stage IV bladder wall invasion on ultrasound.

REFERENCE

1. Huang WC, Yang JM, Yang YC, Yang SH: Ultrasonographic characteristics and cystoscopic correlates of bladder wall invasion by endophytic cervical cancer. *Ultrasound Obstet Gynecol* 2006; **27**: 680-686.

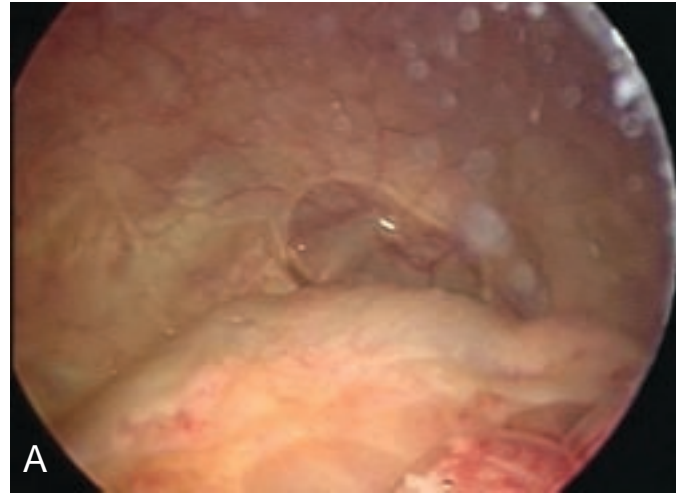


Fig. 3. Cystoscopic findings showing that the posterior bladder wall is compressed and elevated (A) with a polypoid tumor (B).