Perineal Hernia in Women: Assessment with Evacuation Fluoroscopic Cystocolpoproctography

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Summary: The aim of this study is to assess the usefulness of fluoroscopic cystocolpoproctography in the treatment of female pelvic organ prolapse. The presence or absence of rectocele, enterocele, sigmoidocele, and the cystocele on cystocolpoproctography was retrospectively analyzed in 46 consecutive patients. A rectocele was detected in 4.5% of the patients, postvaginal hernia in 19.7%, cystocele in 3.0%, complete rectal prolapse in 53.0%, massive rectal prolapse in 10.6%, and incomplete rectal prolapse in 4.5% of the patients on cystocolpoproctography. Perineal hernia can include a combination of cystocele, rectocele, uterine prolapse, enterocele and rectal prolapse. Accurate diagnosis of the coexisting abnormalities is essential in planning reconstructive procedures so that the risks of recurrence and reoperation can be minimized. Fluoroscopic cystocolpoproctography provides direct visualization and quantification of female pelvic organ prolapse, information that usually can only be inferred by physical examination.

Key words perineal hernia, fluoroscopic cystocolpoproctography

INTRODUCTION

Hernias in the perineum can be classified as pelvic or perineal. The former includes obturator hernia and sciatic hernia, while the latter includes levator hernia, which is caused by a levator funnel in the levator ani muscles. Hernias may occur in the urogenital hiatus and anorectal hiatus. In this study, we performed fluoroscopic cystocolpoproctography to classify perineal hernias according to the system described by Amano [1] and assessed the role of this technique in the treatment of female pelvic organ prolapse.

MATERIALS AND METHODS

Forty-six women (66 lesions) who presented to our clinic with a chief complaint of perineal prolapse (or a sense of perineal prolapse) over the two-year period from January 2004 to March 2006 were the subjects of this study. Mean age was 75.7 years (21-96).

Barium was administered two hrs before examination to opacify the small bowel. Retrograde cystography with urographin was performed. A urographin-soaked gauze was inserted into the vagina and 200 mL of barium paste was injected into the rectum. Lateral images were taken at rest, during contraction and during straining with the subject sitting on a commode attached to the fluoroscopy table. As shown in Fig. 1, perineal hernias were classified on the basis of x-ray pictures taken during straining (Figs. 2, 3).
RESULTS

Case 1
A 58-year-old woman visited us complaining of anal prolapse. Cystocolpoproctography showed a normal pelvic floor but the rectum was found intussuscepting and protruding from the anus (complete rectal prolapse) (Fig. 4). Rectal fixation was performed surgically.

Case 2
An 83-year-old woman visited us complaining of a sense of perineal descent. Cystocolpoproctography revealed perianal pelvic descent (levator hiatus) complicated by rectal intussusception, indicating the rectum was in a state of massive prolapse with the uterus trapped in the intussuscepting rectum (Fig. 5). Rectal fixation was performed surgically, together with levatorplasty of the anterior rectum and the Moschcowitz procedure.

Case 3
A 78-year-old woman was referred to us complaining of perineal prolapse. Cystocolpoproctography revealed posterior vaginal hernia in which the small bowel prolapsed from behind the uterus and was protruded into the vaginal wall, and massive rectal prolapse in which the small bowel was displaced into the intussuscepting rectum (Fig. 6). Rectal fixation was performed surgically, along with levatorplasty of the anterior rectum, and pelvic floor reconstruction using Composix Mesh.

Case 4
An 82-year-old woman was referred to us com-
plaining of a sense of perineal descent. Cystocolpoproctography revealed posterior vaginal hernia in which the sigmoid colon prolapsed from behind the uterus and was protruded into the vaginal wall (Fig. 7). Rectal fixation was performed surgically, along with pelvic floor reconstruction using Composix Mesh.

**Case 5**

An 85-year-old woman visited us complaining of perineal prolapse. Cystocolpoproctography revealed rectal intussusception and prolapse through the anus. She was diagnosed as having massive rectal prolapse complicated by enterocele in which the small bowel was trapped in the intussuscepting rectum (Fig. 8). Rectal fixation was performed surgically together with levatorplasty of anterior rectum.

Of the forty-six patients (66 lesions) who present-
ed to our clinic with a chief complaint of perineal prolapse (or a sense of perineal prolapse), 4.5% had posterior rectal sigmoidocele categorized as levator hernia, 19.7% had posterior vaginal hernia, 3.0% had cystic prolapse categorized as urogenital hiatus hernia, 53% had (simple) complete rectal prolapse, 10.6% had massive rectal prolapse and 4.5% had incomplete rectal prolapse categorized as anorectal hiatus hernia (Fig. 1).

**DISCUSSION**

In 1885, Thomas [2] described five types of vaginal hernia: cystocele, rectocele, vaginal enterocoele, pudendal enterocoele and perineal enterocoele. A new classification similar to the current system was developed by Wilensky and Kaufman [3] in 1940, who categorized vaginal hernia as extravaginal hernia (including urethrocele, cystocele and rectocele), peritoneal vaginal hernia (including anterior, posterior, lateral anterior, lateral posterior and postoperative types), perineal hernia, hydrocele, pudendal hernia and pelvic quasi hernia. Hernias in the perineum can be differentiated as being either pelvic or perineal. The former includes obturator hernia and sciatic hernia. The latter is caused by levator hernia in the levator ani muscles or by hernias through the urogenital or anorectal hiatus. Hernias that pass through the urogenital hiatus include urogenital hiatus hernia, anterior peritoneal hernia and genital hernia. For genital hernia, three subtypes are recognized: extraperitoneal vaginal, peritoneal vaginal and pelvic quasi hernia. Anorectal hiatus hernia is graded relative to rectal prolapse as internal rectal prolapse where the rectum does not stick out of the anus, complete rectal prolapse where the rectum protrudes from the anus and massive rectal prolapse where the herniated rectum contains an extraperitoneal hernia. Diagnoses such as enterocoele or sigmoidocele are made based on the organ that is trapped in the hernia sac.

Magnetic resonance imaging (MRI) is an easy-to-use tool that can measure the degree of descent of the intrapelvic organs. It has been reported that the rate of correct diagnosis by MRI is 66% for rectocele, 70% for cystic prolapse, 42% for uterine prolapse and 87% for enterocoele [4,5]. Dynamic imaging lead to changes in the initial operative plan in 41 percent of patients and was the only modality that identified levator ani hernias. Dynamic cystocolpoproctography identified sigmoidoceles and internal rectal prolapse more often than physical examination or dynamic magnetic resonance [6].

Although it is convenient and of low invasiveness, MRI performed in the lateral decubitus position is inevitably less accurate than cystocolpoproctography performed in the sitting position with straining. The fact that it is a complicated procedure, the sense of embarrassment the patient entertains and other issues remain to be solved for cystocolpoproctography but the technique can be applied not only to morphologic investigation of the intrapelvic organs at rest, during contraction and during straining but also to cystometry and measurement of urine and stool volume over time [7].

Among our patients with perineal hernia, 4.5% had posterior rectal sigmoidocele categorized as levator hernia, 19.7% had posterior vaginal hernia, 3.0% had cystic prolapse categorized as urogenital hiatus hernia, 53.0% had (simple) complete rectal prolapse, 10.6% had massive rectal prolapse, and 4.5% had incomplete rectal prolapse categorized as anorectal hiatus hernia, while 43% of the rectal prolapse patients had complicating lesions in the pelvis. One study examined 73 patients with indefinite anal complaints by means of defecography and detected rectocele in 29%, enterocele in 18% and sigmoidocele in 5% [8]. In another series, cinedefecography demonstrated pelvic floor abnormalities in 52% of 55 women with rectal prolapse [9]. All of these studies report a similar incidence of intrapelvic complications. These findings indicate the necessity of preoperative cystocolpoproctography to examine for intrapelvic complications in rectal prolapse patients.

Extraperitoneal vaginal hernia categorized as massive rectal prolapse develops in 33% of patients who have been diagnosed from external morphology as having complete rectal prolapse. In these cases, Gant-Miya procedure, Delorme’s procedure or rectopexy used to correct rectal prolapse may have left the extraperitoneal vaginal hernia unrepaird, possibly resulting in the recurrence of hernia on the anterior rectal lining. This supports our conclusion that cystocolpoproctography is helpful not only for formulating treatment plans, but also for preventing recurrence of rectal prolapse and relieving patients’ complaints.

**CONCLUSION**

Fluoroscopic cystocolpoproctography is the exam of choice for the functional and morphologic diagnosis of perineal hernia and plays an important role in treatment planning.
REFERENCES