Female sexual function in urological practice

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CHAPTER 8

Sexual function after partial cystectomy and urothelial stripping in a 32-year-old woman with radiation cystitis

Based on:
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INTRODUCTION

It is generally known that radiotherapy can cause severe bladder problems. Sometimes cystectomy is the only possible solution. Preserving sexual function during this procedure in women is likely to be forgotten. The urological literature contains little information on female sexual function after radical cystectomy, in contrast to the increasing data on the sexual dysfunction of men after cystectomy. Radical cystectomy and hysterectomy (1) in women may cause sexual dysfunction because the neurovascular bundles located lateral to the vaginal wall are usually excised or damaged by removal of the bladder, urethra, and anterior vaginal wall. This pelvic plexus, also called the inferior hypogastric plexus, including afferent and efferent sympathetic and mainly parasympathetic autonomic nerves as well as some sensory pudendal nerve branches is the network of pathways supplying the rectum, uterus, vagina, vestibular bulbs, clitoris, bladder, and urethra. More cranial these nerves are connected to the superior hypogastric plexus and hypogastric nerves (mainly sympathetic) and the sacral nerves (mainly parasympathetic).

Theoretically, disruption of the pelvic plexus could lead to altered vascular function during sexual arousal and possibly disordered orgasm. The pelvic plexus supplies the blood vessels of the internal genitals and is involved in the neural control of vasocongestion and, consequently, the lubrication-swelling response. The innervation of the vaginal wall originates mostly from the pelvic plexus. In addition, significant devascularization of the clitoris often occurs with removal of the distal urethra, affecting subsequent sexual arousal and desire. The sensation of the external genitalia is not related to the pelvic plexus: pudendal nerve branches are the somatosensory pathway for the vulva. This case describes a partial cystectomy, indicated in a patient with a crippled bladder after radiotherapy. Hence, there was no need for radical cystectomy. Normally, a simple cystectomy is done in our clinic in benign cases. In this case, after radiotherapy it was difficult to perform a simple cystectomy without damaging the neurovascular bundle. Thus, we introduced this novel approach of partial cystectomy and stripping off the remaining urothelium to preserve sexual function, which can be helpful in a selected group of patients.

CASE REPORT

A 32-year-old woman presented in November 2002 with gross hematuria, urgency, urge incontinence, frequency, and lower abdominal pain at the Department of Urology. In December 2000 she had been treated for cervical cancer stage IB1 (2). Pelvic lymphadenectomy was performed with postoperative radiation

therapy because of lymph node metastases. The uterus remained in situ. Before treatment she had a normal sex life. Because of ileus, related to radiation enteritis, she underwent ileocecal resection in October 2001. Cystoscopy showed severe radiation cystitis with ulcers. Transurethral bladder biopsy indicated radiation cystitis and no evidence of recurrent disease.

The symptoms, consisting of pain, urgency, frequency, and incontinence, increased despite conservative treatment with tolterodine, oral and intravesical oxybutynin, and pain medication (morphine). Hematuria was not a major problem. Repeated cystoscopies revealed progression of the ulcers. She also developed pain in the kidney region. Ultrasonography indicated hydronephrosis of both kidneys, necessitating percutaneous nephrostomies.

Because of the increasing crippling of the bladder, including pain, we advised a cystectomy and urinary diversion. Because of the previous bowel operation a continent reservoir was not regarded as a good option, and therefore an ileal conduit was selected.

Another important issue in this young woman was her wish to retain sexual functions, e.g., sexual arousal and orgasm, to the best possible extent because she was still sexually active. Her clitoral function was normal. However, penetration was difficult because she had dyspareunia, related to some narrowing of the vagina due to radiation therapy.

Because of her wish to remain as sexually active as possible after the operation, we decided to do a partial cystectomy to spare the neurovascular bundle. After resection of the dome of the bladder, the rest of the urothelium was stripped out of the remaining bladder. The stripped bladder was covered with omentum to promote the healing process. Subsequently, an ileal conduit was constructed and dilatation of the vagina was performed. Pelvic pain subsided and then disappeared after the operation. Postoperatively, the patient used a vibrator for vaginal self-dilatation.

Three months after the operation her clitoral and other sexual functions were intact, including normal sexual arousal and orgasm. This indicated an intact neurovascular bundle. The patient still has penetration problems, because of the preexistent vaginal narrowing, but this is no longer relevant in her sex life.

DISCUSSION

Approximately 1.5–2.5% of patients with a history of pelvic radiation become a bladder cripple and require urinary diversion with or without cystectomy (3). Hematuria, pain, urgency, frequency, and incontinence refractory to conservative therapy make operations like these mandatory. Because of the morbidity of the bladder problems, sexual function is likely to be forgotten. A few reports

on sexual function were part of quality of life studies. Most of them conceived cystectomies for oncological indications and were related to male sexual function. Only a few reports were related to female sexual function (4-7). Zippe at al. demonstrated that impairing female sexual function is a prevalent problem, with 52% of preoperatively sexually active women becoming dysfunctional after radical cystectomy . They suggested that some surgical modifications may be appropriate in sexually active women: (a) routine preservation of the distal urethra in selected cases in an effort to preserve the clitoral neurovasculature, (b) preservation of the anterior vaginal wall (as much as possible) to maintain vaginal lubrication and neurovascular innervation, and (c) tubular reconstruction of the vagina (versus posterior flap rotation) to preserve vaginal depth and maintain pain-free intercourse.

How to perform a nerve-sparing radical cystectomy was nicely reviewed by Venn et al. (8). Preservation of sexual function in males and females undergoing cystectomy without compromising oncological results was described incidentally (9). Only three women were included in these data with little information on sexual function.

It is more difficult to find information in the literature on benign cases like ours. Cystectomy after radiotherapy almost always damages the neurovascular bundle. Furthermore, the vagina is likely to be opened and subsequently to be narrowed. Such a procedure results in a nonpenetrable vagina without clitoral function. Supravesical diversion without cystectomy is an option, although morbidity from the crippled bladder remaining in situ is high (28–67%), so that serious consideration should be given to primary cystectomy performed simultaneously with the supravesical diversion. Particularly patients with chronically infected bladders, obstructed bladders, and interstitial cystitis are at risk (10;11).

Simple cystectomy described by Neulander et al. (12) implies removal of the bladder without the adjacent structures, including adnexa, urethra, and part of the vagina. Also with this operation technique the neurovascular bundle is likely to be damaged in patients who had previous radiotherapy.

In our opinion, the procedure described in this report is a good, novel alternative in women who are candidates for cystectomy because of a crippled bladder and want to retain sexual function.

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