

# Female Sexual Dysfunction Following Radical Cystectomy: A New Outcome Measure

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Outcome measures following radical cystectomy (RC) have focused primarily on cure, urethral recurrence and continence. However, sexual dysfunction is a major concern in many younger female patients. During RC, the neurovascular bundles are usually removed or damaged due to their location in the anterior vaginal wall. Devascularization of the clitoris with removal of the urethra may also affect subsequent sexual arousal and desire.

Cleveland Clinic researchers were among the first to conduct studies addressing sexual dysfunction in females undergoing cystectomy. Sexual response was stratified based on the type of urinary diversion to determine if vaginal and urethral sparing influenced sexual response.

Baseline and follow-up data were obtained from 27/34 sexually active consecutive female patients (mean age 54.79 ± 12.7 years) undergoing non-nerve preserving RC. Thirteen patients were premenopausal before radical cystectomy. Thirty seven percent (10/27) had a Studer orthotopic diversion, 26% (7/27) had a cutaneous diversion, and 37% (10/27) had an ileal conduit diversion.

Sexual dysfunction was assessed using a 10-item version of the Index of Female Sexual Function (IFSF) questionnaire, which is patterned after the International Index of Erectile Function (IIEF)

validated for assessment of male sexual dysfunction. Specific domains include vaginal lubrication, orgasm, dyspareunia, sexual desire and overall sexual satisfaction.

With a mean follow-up of 24.2 months, IFSF score decreased from 17.4 to 10.6 ( $p \leq 0.05$ ) [see table]. Decreased sexual desire was noted in 37%, decreased lubrication in 41%, diminished ability or inability to achieve orgasm in 45%, and dyspareunia in 22%. Only 48% (13/27) of the women were able to have successful vaginal intercourse, with 56% (15/27)

reporting decreased satisfaction in overall sex life after RC. Thirty percent of the patients experienced a decrease in desire for sexual activity due to apprehension following cancer diagnosis and treatment. Preliminary data suggest no differences in sexual function between patients having Studer orthotopic diversions vs. Indiana cutaneous diversions.

The results demonstrate that female sexual dysfunction is prevalent, with 52% of the preoperatively sexually active females experiencing problems following RC. Whether the type of diversion affects sexual function remains to be determined, but our preliminary

data suggest no significant difference between the Indiana and Studer pouch diversions. Thus, the benefit in preserving the anterior vaginal wall and its neurovascular innervation in an attempt to preserve sexual function is still unclear.

Sexual dysfunction should be used as an outcome measure following female RC, and urologists should be encouraged to attempt neurovascular preser-

of the vagina (vs. posterior flap rotation) to preserve vaginal depth and maintain pain-free intercourse.

While efforts have been made to preserve the vaginal neurovasculature, the use of oral therapy has not been adequately explored. The success of oral PDE-5-inhibitor (sildenafil) therapy in males has prompted its use in females and may show promise for improv-

## IFSF Domains: Baseline and After Radical Cystectomy (n=27)

IFSF Domains	Before radical cystectomy	After radical cystectomy	P-values
Degree of vaginal lubrication	3.3 ± 1.90	1.6 ± 2.01*	0.0098
Ability to achieve orgasm	4.0 ± 1.83	2.2 ± 2.09*	0.0306
Free of pain during intercourse	3.5 ± 1.99	2.0 ± 2.22	0.0711
Overall sexual desire	2.9 ± 1.30	2.1 ± 1.25	0.1262
Overall sexual satisfaction	3.7 ± 1.23	2.7 ± 1.53	0.0775
Total mean IFSF Score	17.4 ± 7.23	10.6 ± 6.62*	0.0067

\* $P < 0.05$  Responses were scored from 0 to 5; 0 = no sexual activity, 1 = rarely/occasionally, 2 = less than 1/2 the time, 3 = sometimes/1/2 the time, 4 = more than 1/2 the time, 5 = almost always.

vation in appropriate cases. Two domains in our IFSF questionnaire had significant declines: 1) ability to achieve orgasm/sexual arousal and 2) the degree of vaginal lubrication. A third domain—pain during intercourse—dropped from a mean of 3.5 to 2.0 ( $p = 0.07$ ). These data suggest that the following surgical modifications may be appropriate in sexually active females: 1) routine preservation of the distal urethra in all diversions in an effort to preserve the clitoral neurovasculature 2) preservation of the anterior vaginal wall when reasonable to maintain vaginal lubrication and neurovascular innervation and 3) tubular reconstruction

ing the sexual quality of life in women. Nitric oxide-mediated stimulation of clitoral cavernosal smooth muscle increases clitoral blood flow and results in genital engorgement important in sexual arousal. Thus, it is hypothesized that sildenafil will subsequently improve vaginal lubrication and sexual satisfaction.

Our preliminary data establish a need for more research in the area of FSD following pelvic surgery. Clinical research is ongoing to analyze both surgical modifications and pharmacological intervention in an effort to better define the “quality of life preserving” female cystectomy.