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PELVIC RADIOTHERAPY DOES NOT INCREASE THE COMPLICATION RATES OF ARTIFICIAL URINARY SPHINCTER IMPLANTATION

Aims of Study

Patients with pelvic radiotherapy (XRT) have impaired tissue healing capacity, small vessel occlusion and ischemia, and more complex etiology of incontinence secondary to detrusor hyperactivity and decreased compliance. It is unclear whether XRT increases the complication rates of artificial urinary sphincter (AUS) implantation for intrinsic sphincter deficiency (ISD) because of these adverse factors. Two recent publications revealed conflicting results (1, 2). We present the largest contemporary retrospective series to date to clarify the issue.

Methods

From November 1992 to May 2002, 152 consecutive patients had AUS (American Medical System 800) surgery by a single surgeon for ISD. 2 of these patients did not have follow-up and were excluded from the study. Among the remaining patients, 50 had a history of pelvic XRT (41 radical prostatectomy, 5 transurethral prostatectomy, 1 prostate cryosurgery, 3 without prostatectomy) while 100 had no history of pelvic XRT (82 radical prostatectomy, 2 cystectomy, 5 transurethral prostatectomy, 11 neurogenic bladder). Patient demographics, pre-operative incontinence and urodynamics, post-operative incontinence, and AUS implantation complications were compared between the XRT and non-XRT groups.

Results

Mean follow-up was 29.3 (range 1.0 to 104.9) and 30.3 (1.0 to 113.4) months in the XRT and non-XRT groups respectively. Patient age, history of failed collagen injection, pre-operative pad use, post-operative pad use, and post-operative urge symptoms were comparable between the two groups. XRT patients had smaller bladder capacity, earlier sensation and lower detrusor compliance than non-XRT patients in pre-operative urodynamics. In addition, XRT patients were twice as likely (54%) to have bladder neck contracture than non-XRT patients (27%). To eliminate referral bias, all third-party AUS complications that resulted in sphincter revision or removal by our group were excluded. Patients with neurogenic bladders were also excluded (none had XRT). As shown in the table below, pelvic XRT did not increase the complications rates of AUS implantation for ISD:

Complications	XRT (n=50)	Non-XRT (n=89)
Infection, exposed device	0 (0%)	7 (7.9%)
Urethral atrophy	3 (6%)	13 (14.6%)
Cuff erosion	1 (2%)	4 (4.5%)
Device malfunction	0 (0%)	8 (9%)
Iatrogenic (e.g. pump migration)	0 (0%)	2 (2.2%)

It was safe to use 61-70 cm water reservior and activate the sphincter 4 weeks after AUS implantation in previously irradiated patients.

Conclusions

Pelvic radiotherapy does not increase the complication and/or re-operative rates of artificial urinary sphincters implantation for intrinsic sphincter deficiency. Patients have similar outcome with regard to post-operative continence and urge symptoms whether or not they have received previous pelvic radiation.

References

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