

these procedures is RUF. We reviewed our recent experience with RUF following radiotherapy for prostate cancer to clarify treatment in these patients.

Materials and Methods: We recently treated 22 men with RUF following primary radiotherapy for adenocarcinoma of the prostate in 21 and adjuvant external beam radiation therapy following radical prostatectomy in 1. Time from the last radiation treatment to fistula presentation was 6 months to 20 years.

Results: Four patients underwent proctectomy with permanent fecal and urinary diversion. RUF repair in 5 patients was performed with preservation of fecal or urinary function. Six patients were candidates for reconstruction with preservation of urinary and rectal function, including 5 who underwent proctectomy, staged colo-anal pull-through and BMG repair of the urethral defect. The additional patient underwent primary closure of the rectum, BMG repair of the urethra and gracilis muscle interposition. Successful fistula closure was achieved in the 9 patients who underwent urethral reconstruction. All 8 candidates for rectal reconstruction showed radiological and clinical bowel integrity postoperatively with 2 awaiting final diverting stoma closure.

Conclusions: With the increasing use of prostate BT the number of patients with severe rectal injury will likely continue to increase. Radiotherapy induced RUF carries significant morbidity and most patients are treated initially with fecal and urinary diversion. In properly selected patients good outcomes can be expected following repair using BMG for the urethral defect along with colo-anal pull-through or primary rectal repair and gracilis muscle interposition.

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Incidence, clinical symptoms and management of rectourethral fistulas after radical prostatectomy

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Purpose: Rectourethral fistula is a rare but severe complication after radical prostatectomy and there is no standardized treatment. We retrospectively evaluated the incidence, symptoms and management of rectourethral fistulas based on our experience. **Materials and Methods:** From 1999 to 2008 we performed 2,447 radical prostatectomies. Patients in whom postoperative rectourethral fistulas developed were identified. Based on the therapeutic approach patients were categorized into group 1-conservative treatment, group 2-colostomy with or without surgical closure and group 3-immediate surgical closure without colostomy.

Results: Rectourethral fistulas developed in 13 of 2,447 patients (0.53%) after radical prostatectomy. The risk of rectourethral fistulas was 3.06-fold higher ($p = 0.074$) for perineal (7 of 675, 1.04%) than for retropubic prostatectomy (6 of 1,772, 0.34%). In 7 of 13 patients (54%) a rectal lesion was primarily closed at radical prostatectomy. Median followup was 59 months. In all patients in group 1 (3) the fistula closed spontaneously with conservative treatment. None of these patients had fecaluria. In group 2 of the 9 patients 3 (33%) experienced spontaneous fistula closure after temporary colostomy and transurethral catheterization. In this group 6 patients (67%) required additional surgical fistula closure, which was successful in all. Surgical fistula closure (1) without colostomy in presence of fecaluria failed (group 3).

Conclusions: The therapeutic concept for rectourethral fistulas should be guided by clinical symptoms. Rectal injury during radical prostatectomy is a major risk factor. In cases with fecaluria colostomy is required for control of infection and may allow spontaneous fistula closure in approximately a third of cases. In the remainder of cases surgical fistula closure was successful in all after protective colostomy.

Editorial Comment

These two single institution case series review management and outcome of rectourethral fistula repair in two vastly different patient groups: surgery vs. radiation. It is well accepted that rectourethral fistula repair

is made more difficult by prior radiotherapy. Another difference between the two groups is that the post-radical prostatectomy patients were primarily managed by the authors whereas in post-radiation patients were referred for management after a failed period of conservative management.

In the radical prostatectomy series by Thomas et al., nearly half of the fistulas closed spontaneously, a few even without a colostomy. Importantly, the authors note that the absence of fecaluria was a good indicator of a fistula that would close spontaneously: 4 of 8 closed spontaneously in the absence of fecaluria (3 without a colostomy) but only 1 of 5 with fecaluria. Spontaneous closure occurred after 1-3 months of urethral catheterization. All fistula repairs were accomplished transperineally.

The radiation series is quite different. No fistulas closed spontaneously. Fistulas were much larger, ranging in size up to 7 cm. Patients presented with severe problems secondary to the fistula such as sepsis and Fournier's gangrene. Only 6/22 could be repaired with preserved orthotopic fecal and urinary function; the remainder had one or both streams diverted with an ostomy. Perioperative morbidity was likewise much higher in those undergoing fistula repair after radiation.

Rectourethral or rectovesical fistula is a rare but morbid complication of surgery or radiation for prostate cancer. These series highlight the fact that with appropriate expertise good outcomes can be achieved in those who have not been previously radiated however

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Characteristics and outcomes of patients with clinical T1 grade 3 urothelial carcinoma treated with radical cystectomy: results from an international cohort

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Background: Management of T1 grade 3 (T1G3) urothelial carcinoma of the bladder (UCB), with its variable behaviour, represents one of the most difficult challenges for urologists and patients alike.

Objective: To evaluate the characteristics and long-term outcome of patients with clinical T1G3 UCB treated with radical cystectomy (RC).

Design, Setting, and Participants: Data from 1136 patients treated with RC for clinical T1G3 UCB without neoadjuvant chemotherapy were collected at 12 centres located in Europe, the United States, and Canada. Median age was 67 yr (range: 29-94), with a male-to-female ratio of 4:1.

Measurements: Patients' characteristics and outcome are evaluated.

Results and Limitations: Of the 1136 patients, 33.4% had non-organ-confined stage at cystectomy, and 16.2% had lymph node (LN) metastasis; 49.7% were upstaged after RC to muscle-invasive disease, while 21.4% were