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RESULTS OF A MODIFIED YORK-MASON PROCEDURE IN COMBINATION WITH GRACILIS MUSCLE INTERPOSITION TO TREAT IATROGENIC RECTOURETHRAL FISTULAS

Hypothesis / aims of study

An iatrogenic rectourethral fistula (RUF) is a rare but severe complication after previous surgery to the urethra, prostate, rectum or after radiation therapy (RT).[1] Spontaneous closure of a RUF is infrequent and therefore a surgical intervention is often necessary. [1] Radiation-induced RUFs tend to have a worse outcome and require extensive therapy. In this study we analyzed patients who underwent the York-Mason procedure to treat their RUF. Combined York-Mason surgery with gracilis muscle interposition (GMI) was of special interest.

Study design, materials and methods

We retrospectively reviewed the medical records of patients who underwent the York-Mason procedure to treat a acquired RUF between 2008 and 2014. A RUF was diagnosed by at least urethrocystoscopy, mostly combined with urethrocystography and sometimes MRI.

Our York-Mason procedure consists of a sagittal midline incision, (6 or 12 o'clock) with extension to the anal verge. Matched sutures are meticulously placed in the external and internal sphincter before incision, to facilitate clear reapproximation of the sphincter later on. After incision of the posterior wall, the RUF is identified and resected together with the surrounding inflammatory tissue. A plane of dissection is then created between the rectal wall and the urethral wall, which are closed separately with inverted sutures thereafter. Afterwards, the anterior and posterior rectal wall are closed and the paired sutures in the anal sphincter are tied (figure 1). [2]

For irradiated RUFs, a GMI was performed concomitantly. First, the gracilis muscle is mobilized. Thereafter, the muscle transposition is carried out in the direction of the rectal area trough a subcutaneous tunnel and laid between the rectum and the urethra and fixed about 3 centimetres above the fistula site (figure 2). [3]

Most of the patients have a fecal and urinary diversion before surgery. Primary outcome was the result of treatment. Success was defined as the absence of a visible fistulous tract on urethrocystography and absence of complaints. Secondary outcomes were maintenance of fecal and urinary continence and reversal of fecal diversion.

Results

Twelve patients (median age 66 years) were identified. Etiology of the RUF was heterogeneous; in 7 patients the RUF developed after prostatectomy, 4 patients had previous surgery of the rectum, 2 patients had other surgery (table 1). Prior to definitive surgery, 11 patients underwent fecal diversion and 10 underwent urinary diversion.

Four patent underwent RT for rectal cancer previous to their low anterior resection or abdominoperineal excision. They all had a fistula smaller than 2 centimeter.

In total, seventeen York-Mason procedures were performed (8 patients had one repair, 2 patients had two repairs and 2 patients had three repairs). Six GMIs were performed; in 3 of the 4 patients with previous RT, in one primary case after failure of transabdominal repair and in 2 recurrent cases. Success rates after 1, 2 and 3 times York-Mason surgery were respectively 67%, 75% and 83%. None of the patients experienced fecal incontinence afterwards. Two patients had urinary incontinence due to previous prostatectomy. Follow-up was 21 months. Two of 12 patients ended up with a cystectomy due to failure of treatment.

Interpretation of results

The York-Mason operation is highly successful in treating RUF and it is possible to repeat the procedure multiple times with increasing success rates. Also after previous other techniques to treat a RUF (eg. transabdominal or perineal approach) the York-Mason can be successful.

Concluding message

The York-Mason procedure offers a adequate exposure of a fistulous tract and is highly successful in most of patients with a RUF with limited morbidity. Fecal and urinary continence are preserved. Previous RT seems to be a risk factor for failure, but combining the York-Mason procedure with a gracilis muscle interposition seems a viable option to treat a irradiated RUF.

Table 1. Patient characteristics, treatment and outcome

patient no	BMI	etiology *	complaints ‡	age at diagnosis	months from diagnosis to surgery	radiation therapy	cystostomy	colostomy	(first) treatment	number of YM	success	fecal incontinence	Colostomy reversal
1	25.8	RALP	1,2	64	1	No	Yes	Yes	YM	1	Yes	No	No
2	30.0	RALP	1,2	66	9	No	Yes	Yes	YM	2	No	No	No
3	23.7	RALP	-	66	1	No	Yes	Yes	YM	1	Yes	No	Yes
4	26.1	RALP	-	66	4	No	Yes	Yes	YM	1	Yes	No	Yes
5	35.1	RRP	2	63	5	No	Yes	Yes	YM	1	Yes	No	Yes
6	30.1	RRP	2	66	1	No	No	Yes	YM+GMI	1	Yes	No	No,≠
7	25.1	RRP	1,2	77	2	No	Yes	Yes	YM	2	Yes	No	Yes
8	29.0	TURP	2	74	2	Yes	Yes	Yes	YM+GMI	1	Yes	No	No,≠
9	28.7	Pro-Act	3	76	2	No	No	No	YM	3	Yes	No	-
10	32.5	APER	2	65	7	Yes	Yes	Yes	YM+GMI	1	Yes	No	No,≠
11	25.6	LAR	2	72	3	Yes	Yes	Yes	YM+GMI	1	Yes	No	No,≠
12	31.6	ISP	2	53	1	Yes	Yes	Yes	YM	3	No	No	No,≠

*** Etiology abbreviations**

APER	abdominoperineal excision of rectumcarcinoma
ISP	intersphincteric proctectomy for rectal fistula
LAR	low anterior resection
RALP	robotic assisted laparoscopic prostatectomy
RRP	radical retropubic prostatectomy
RT	radiotherapy
TURP	transurethral resection of prostate

‡ Complaints codes

1	fecaluria
2	urine passage per rectum
3	pneumaturia

YM	York-Mason procedure
GMI	gracilis muscle interposition
≠	because of rectal disease

Figure 1. Principles of the York Mason procedure [2]

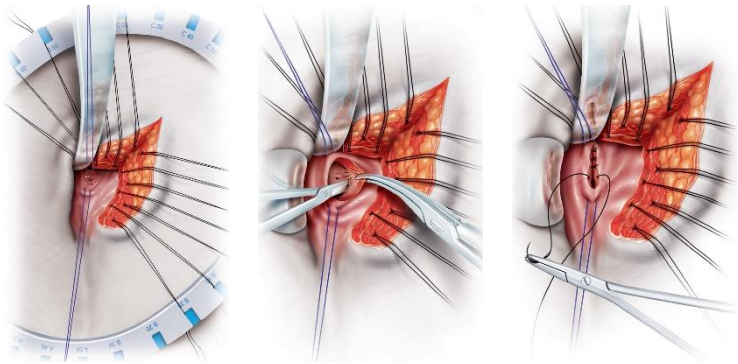
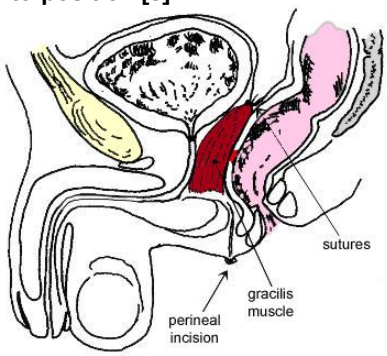


Figure 2. Gracilis muscle interposition [3]



References

1. C. Thomas et al. Incidence, clinical symptoms and management of rectourethral fistulas after radical prostatectomy. J Urol. 2010; 183: 608-12.
2. X. Cathelineau et al. The York Mason operation. BJU Int. 2010; 106: 436-47.
3. O. Zmora, et al. Gracilis Muscle Transposition for Iatrogenic Rectourethral Fistula. Ann Surg. 2003; 237: 483–487.

Disclosures

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