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Original Research Article

To evaluate the long term outcome of our surgical techniques in patients with rupture membranous urethra, especially in context to the type of pelvic fracture.

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Abstract

Background & Methods: The aim is to assess quality of life post Low Anterior Resection in Cancer rectum patients. A detailed preoperative assessment included careful history-taking and physical examination; with special stress on the urogenital system, followed by routine as well as specific investigations, in order to determine the exact etiology, site and length of the stricture and also the length and degree of spongiofibrosis.

Results: All patients were followed up since admission, during operation, upto their discharge and uroflowmetery, retrograde urethrogram with micturating urethrogram was done, both before and after the procedure. Patients who were operated in the previous years and had come for follow up were also included.

Conclusion: Urethral strictures have been a reconstructive dilemma for many years due to the high incidence of recurrence as well as less than satisfactory outcomes. A thorough preoperative evaluation, appropriate surgical planning, and adherence to basic surgical principles, even in the hands of the most experienced surgeon, have failed to achieve the desired results. 74.33% of patients were in the age group of 20-45 yrs. Post traumatic strictures had a short average length of 3.4 cms. Post-operative wound infection was the most common complication encountered and most of the complications were associated with TILE type C and those with longer strictures.

Keywords: rupture, membranous, urethra & pelvic fracture.
Study Design: Observational Study.

1. Introduction

The urethral epithelium or the underlying corpus spongiosum to the extent that healing results in a scar can cause a urethral stricture. The loss of any proportion of circumference of the epithelial lining generally results in commensurate narrowing of lumen during healing[1]. This is due to the fact that margins of residual epithelium are approximated by a natural urethral closing procedure, so that the defect forms a cleft which tends to heal rapidly by

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cross adhesions and epithelial over bridging. Intermittent passage of urine opens these clefts and this repeated separation and re-exposure of urine to vascular spongy tissue spaces leads to a gradual increase in the underlying spongiofibrosis and results in a stricture[2].
Urethral strictures occur after an injury to the urothelium or corpus spongiosum leading to scar tissue formation. Any process that injures the urethral epithelium or the underlying corpus spongiosum to the point that healing results in a scar can cause a urethral stricture to form[3].
Urethral stricture has the basic pathology of replacement of spongiose tissue with densely packed connective tissue interspersed with fibroblasts. The normal urethral spongiosum comprised of 75.1% type I collagen and 24.9% type III collagen. In contrast, the type I collagen in urethral stricture tissue was increased (83.9%), with a corresponding decrease in type III collagen (16.1%). This alteration in the ratio of collagen type III: I may explain the fibrotic noncompliant nature of the urethral stricture scar tissue[4&5].

2. Material and Methods

Study was conducted at Index Medical College Hospital & Research Centre, Indore for 01 Year. A detailed preoperative assessment included careful history-taking and physical examination; with special stress on the urogenital system, followed by routine as well as specific investigations, in order to determine the exact etiology, site and length of the stricture and also the length and degree of spongiofibrosis. Pre-operative evaluation also included routine investigations such as blood, urine examination, pelvic radiographs, as well as specific ones, viz. retrograde urethrogram, urethrosonogram, and uroflowmetry. Patients were accordingly categorized, based on their etiologies, as post traumatic, post infective, iatrogenic, or unknown.
In patients with traumatic urethral strictures, specific history was elicited as regarding the time elapsed since the traumatic event, as well as any intervention [surgical or otherwise], that may have been performed thereafter. Pelvic radiographs were taken in various views, so as to identify the presence of a pelvic fracture, and to further categorize the patients into grades A, B and C, of the TILE classification.

3. Result

Table 1: PERIOD OF FOLLOW UP

S. No.	Duration of follow up (in months)	No. of cases	% of cases
1.	0-6	76	16.81%
2.	7-12	122	26.99%
3.	13-18	110	24.33%
4.	19-24	70	15.48%
5.	25-48	36	07.96%
6.	49-96	38	08.40%
	Total	452	

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Table 2: Results

Results	**3 months**	**6 months**	**12 months**	**24 months**
Good	124 [94.28%]	120 [94.11%]	96 [92.85%]	76 [85.23%]
Fair	06 [4.28%]	06 [4.41%]	04 [3.57%]	06 [6.38%]
Poor	02 [1.42%]	02 [1.47%]	04 [3.57%]	06 [6.38%]
Total	132	128	104	88

Table 3:

	Infection	**Restenosis**	**Impotence**	**Incontinence**	**UCF**	**Wound dehiscence**	**Retrograde Ejaculation**
TILE A (8.77%)	(4.38%)	(2.63%)	-	(0.87%)	-	(0.87%)	-
TILE B (20.00%)	(8.57%)	(4.27%)	(1.42%)	(1.42%)	-	(2.85%)	(1.42%)
TILE C (52.38%)	(9.52%)	(9.52%)	(7.14%)	(7.14%)	(7.14%)	(7.14%)	(2.86%)
TOTAL (20.35%)	(6.7%)	(4.3%)	(1.8%)	(2.5%)	(1.25%)	(2.5%)	(1.25%)

4. Discussion

Post traumatic strictures tend to be short, occurring exclusively in the bulbar and membranous urethra[6]. The strictures involving these locations made up about 75% of traumatic strictures in our study. 73.9% of these were less than 4 cm in length with an average length being about 3.4 centimeters. Moreover, strictures falling within TILE category A were shorter (avg. length 2.9 cm), when compared with TILE B (avg. length 4.2 cm) and TILE C (avg. length 5.5 cm). However, strictures less than 2 cms were not found in our set of subjects. This maybe due to late presentation and ongoing inflammation as a result of continued or intermittent instrumentation. Studies have shown that instrumentation leads to continued inflammation, thereby leading to an increase in the length of stricture[7].

As no single technique is all encompassing and a “blanket treatment” cannot be used for treating such cases, therapy has to be individualized according to what is best suited to the patient[8]. Here, it is also safe to say that the type of surgical procedure undertaken, either alone or in conjunction with another, has a reasonable bearing in determining the successful outcome for these patients.

5. Conclusion

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Urethral strictures have been a reconstructive dilemma for many years due to the high incidence of recurrence as well as less than satisfactory outcomes. A thorough preoperative evaluation, appropriate surgical planning, and adherence to basic surgical principles, even in the hands of the most experienced surgeon, have failed to achieve the desired results. 74.33% of patients were in the age group of 20-45 yrs. Post traumatic strictures had a short average length of 3.4 cms. Post-operative wound infection was the most common complication encountered and most of the complications were associated with TILE type C and those with longer strictures.

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