

Long-term outcomes of perineal urethrostomy: a literature review

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Abstract

Introduction: In cases of complex urethral strictures and/or comorbidity of patients, urethral reconstruction may not always be successful. In such situations, perineal urethrostomy appears to be the best treatment method. Therefore, it is important to evaluate the long-term results of this operation.

Materials and methods: The review was conducted based on data published in the PubMed and Russian Science Citation Index databases. The inclusion criterion was a study reporting the results of perineal urethrostomy in 10 or more patients with urethral stricture with an average follow-up period of at least 12 months.

Results: A total of 23 such studies were identified. The postoperative follow-up period was long enough, averaging 14 to 63 months. The average postoperative follow-up period among the selected studies ranged from 14 to 63 months. Treatment success rates ranged from 69.9 to 100%, but were greater than 80% in most studies.

Conclusion: Perineal urethrostomy provides a fairly high efficiency in patients with urethral stricture. Given this, it may receive wider clinical application in the treatment of this disease.

Keywords: Urethral stricture; Perineal urethrostomy; Perineostomy

Introduction

Surgical options for the treatment of anterior urethral strictures are extremely diverse and include both endoscopic procedures and various methods of urethroplasty. Urethroplasty is considered the optimal treatment option for urethral strictures, as it involves radical excision of scar tissue with restoration of adequate lumen and patency of the urethra. However, it is important to understand that in case of complex strictures (extended, recurrent, multifocal) one-stage urethral reconstruction cannot always be successfully applied. In such clinical situations, the best treatment method appears to be perineal urethrostomy, which can be applied as a final treatment option or as part of a step-by-step treatment [1,2]. In addition, in case of comorbidity of patients, this treatment option can be chosen as a priority method of urine diversion. The above circumstances determine the relevance of the present study, aimed at analyzing the effectiveness of perineal urethrostomy [3-10].

Materials and methods

The review was conducted based on data published in the PubMed and Russian Science Citation Index databases. The search in the databases was conducted using the following keywords: "urethrostomy" or "perineal urethrostomy" or "perineostomy" or "urethroperineostomy". There were no restrictions on the years of publication. The inclusion criterion was a study reporting the results of perineal urethrostomy in 10 or more patients with urethral stricture with an average follow-up period of at least 12 months. Exclusion criteria: studies using perineal urethrostomy for urethral stricture without presenting the results of this operation; duplicate publications; works of a non-original nature (reviews, lectures, letters to the editor, etc.); the use

of perineal urethrostomy for another disease (not urethral stricture). At the first stage, 175 sources were found that were related to the topic of the review. Following this, 23 studies were selected for inclusion in the review based on the criteria used [10-23].

Results

A total of 23 studies were identified that met the above criteria. These studies mostly included small patient samples. Only 4 studies included more than 100 patients who underwent perineal urethrostomy, 7 studies included between 51 and 85 patients, and the rest included fewer than 50 patients. The postoperative follow-up period was long enough, averaging 14 to 63 months. During this postoperative follow-up period, relatively high treatment success rates were achieved, ranging from 69.9 to 100%. In most studies, treatment success rates exceeded 80% (Table 1) [24,25].

Table 1: Results of perineal urethrostomy for urethral structure.

Discussion

Perineal urethrostomy, despite its long history of use, is currently used to a very limited extent in the practice of treating patients with urethral stricture. This pattern can be explained by the fact that in recent decades there has been a sharp increase in the frequency of using various one-stage augmentation techniques of urethroplasty. However, it should be taken into account that one-stage reconstructive techniques are associated with a high risk of failure. All this requires a change in approaches to the selection of indications for one- and multi-stage urethroplasty techniques and a reassessment of the place and role of perineal urethrostomy among the methods of treating urethral stricture, taking into account the fairly high efficiency of

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Citation: *Katibov Magomed Islambegovich. Long-term outcomes of perineal urethrostomy: a literature review. Jour of Clin & Med Case Rep, Imag 2025; 2(3): 1060.

Study	n	Median (range) follow-up, months	Success rate
Peterson AC et al, 2004 [3]	52	38,5 (4-117)	100%
Barbagli G et al, 2009 [4]	173	62 (12-361)	69,9%
Kulkarni S et al, 2009 [5]	47	52	72,3%
French D et al, 2011 [6]	10	14,7 (4-32)	90%
Myers JB et al, 2011 [7]	45	31 (3-131)	83%
Rolanía FJ, Arteaga SM, 2011 [8]	12	48-84	75%
Lopez JC et al, 2015 [9]	17	39,4 (3-91)	82,4%
Lumen N et al, 2015 [10]	51	36,3 (8-48)	78,4%
Starke NR et al, 2015 [11]	22	32	95% (21/22)
Warner JN et al, 2015 [12]	162	20 (12-344)	75,9%
Patel CK et al, 2016 [13]	14	14	92,9%
DeLong J et al, 2017 [14]	44	45 (6-136)	80%
Fuchs JS et al, 2018 [15]	77	38,9	94,8%
Viers BR et al, 2018 [16]	38	63 (39-84)	92,1%
McKibben MJ et al, 2019 [17]	62	30,7	95,2%
Murphy GP et al, 2019 [18]	39	15 (3,6-38,9)	85,5%
Zhivov AV et al, 2019 [19]	14	12-114	85,7%
Verla W et al, 2020 [20]	34	57 (31-120)	83%
Yadav P et al, 2020 [21]	146	26 (12-75)	88,3%
Kogan MI et al, 2021 [22]	85	58	81,2%
Shinchi M et al, 2021 [23]	56	34	92,9%
Joshi EG et al, 2024 [24]	103	61	95,1%
Rahav NJ et al, 2024 [25]	57	46	77,4%

this surgical intervention.

Conclusion

In recent years, perineal urethrostomy has been extremely rarely used in the treatment of urethral stricture in men. However, this operation can be successfully used in patients after unsuccessful urethroplasty with extensive urethral lesions or in patients with severe comorbid conditions. Perhaps, these factors will serve as a reason to reconsider the importance of perineal urethrostomy among the methods of treating urethral stricture.

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