



# Robot-assisted vesico-vaginal fistula repair: technical nuances

Alessandro Antonelli <sup>1,2</sup>, Alessandro Veccia <sup>2</sup>, Tonino Morena <sup>2</sup>, Maria Furlan <sup>2</sup>, Angelo Peroni <sup>2</sup>, Claudio Simeone <sup>2</sup>

<sup>1</sup> Urology Unit, Urology Unit AUOI Verona, University of Verona, Verona, Italy; <sup>2</sup> Urology Unit ASST Spedali Civili Hospital, University of Brescia, Brescia, Italy

## ABSTRACT

**Introduction:** Vesico-vaginal fistula (VVF) is a rare event in Western countries and are mainly consequent to iatrogenic injuries (1, 2). When conservative management fails, surgical repair is needed, although timing and surgical approach (open or minimally invasive (3)) are still controversial (4, 5). Herein we present a step-by-step description of robot-assisted vesico-vaginal fistula repair.

**Material and Methods:** From 2015 to 2018 six patients underwent robotic vesico-vaginal fistula repair.

Pre-operative cystoscopy was performed to identify the fistulous tract. The ureters were stented. A small catheter was inserted in the fistula. A longitudinal cystotomy was performed, then a dissection of the posterior bladder from the anterior vaginal wall was performed and the fistulous tract was excised. The vagina was sutured horizontally. Four patients underwent omental flap and two pericolic fat interposition. The bladder was closed with a double-layer suture.

**Results:** All the vesico-vaginal fistulas developed after previous gynaecological surgery. The median operative time was 160 minutes [interquartile range (IQR) (146-177)]. Intraoperative blood loss was 25 (IQR 0-50) mL. No post-operative complications were recorded. Ureteral stents were removed at 4th post-operative day. Catheter was removed 13 (IQR 11-15) days after surgery after cystography assessment. One patient had Clavien I complication (ileus). Surgical pathology report was negative. No fistula recurrence was reported during follow-up.

**Conclusions:** In our experience, robot-assisted fistula repair is a feasible and safe procedure. It presents the advantages of minimally invasive approaches and seems to provide low morbidity and good outcomes. Compared to transvaginal approach, the robotics allows to manage more complex cases with high success rate (6).

## CONFLICT OF INTEREST

None declared.

## ARTICLE INFO

 **Alessandro Veccia**

<http://orcid.org/0000-0001-5947-3206>

**Available at:** [http://www.int brazjurol.com.br/video-section/20200744\\_Antonelli\\_et\\_al](http://www.int brazjurol.com.br/video-section/20200744_Antonelli_et_al)  
**Int Braz J Urol. 2021; 47 (Video #13): 684-5**

**REFERENCES**

1. Moses RA, Ann Gormley E. State of the Art for Treatment of Vesicovaginal Fistula. *Curr Urol Rep.* 2017; 18:60.
2. Ignjatovic I, Basic D, Potic M, Dinic L, Skacic A. A martius flap in the treatment of iatrogenic distal urogenital fistula. *Int Braz J Urol.* 2018; 44:1265.
3. Meneses AD, Oliveira AQ, de Araujo DA, Santos DT, de Carvalho LY, Eulalio WMN Filho, et al. Transabdominal and transvesical laparoscopic correction of vesico-vaginal fistula: 42 cases experience. *Int Braz J Urol.* 2020; 46:296-7.
4. Matei DV, Zanagnolo V, Vartolomei MD, Crisan N, Ferro M, Boccione L, et al. Robot-Assisted Vesico-Vaginal Fistula Repair: Our Technique and Review of the Literature. *Urol Int.* 2017; 99:137-42.
5. Gupta NP, Mishra S, Hemal AK, Mishra A, Seth A, Dogra PN. Comparative analysis of outcome between open and robotic surgical repair of recurrent supra-trigonal vesico-vaginal fistula. *J Endourol.* 2010; 24:1779-82.
6. Chandna A, Mavuduru RS, Bora GS, Sharma AP, Parmar KM, Devana SK, et al. Robot-assisted Repair of Complex Vesicovaginal Fistulae: Feasibility and Outcomes. *Urology.* 2020; 144:92-8.

---

Submitted for publication:  
August 19, 2020

---

Accepted after revision:  
September 21, 2020

---

Published as Ahead of Print:  
December 20, 2020

---

**Correspondence address:**

Alessandro Antonelli, MD  
Department of Urology,  
Azienda Ospedaliera Universitaria Integrata Verona  
University of Verona  
Verona, 37126, Italy  
Fax: + 39 045 812-7715  
E-mail: [alessandro.antonelli@univr.it](mailto:alessandro.antonelli@univr.it)