



Case series

Surgical management of recto-vaginal fistula (about 6 cases)

A. El Karouachi^{*}, A. Hajri, S.R. El Jai, D. Erguibi, R. Boufettal, F. Chehab

Service of Digestive Cancer Surgery and Liver Transplantation III, Morocco

University Hospital Center Ibn Rochd, Casablanca, Morocco

Faculty of Medicine and Pharmacy, Hassan II University, Casablanca, Morocco

ARTICLE INFO

Keywords:

Recto-vaginal fistula

Treatment

Surgery

ABSTRACT

Introduction: Recto-vaginal fistula (RVF) is defined as a pathological epithelialized communication between the posterior wall of the vagina and the anterior wall of the rectum through the recto-vaginal septum. RVFs are rare and represent less than 5% of rectal fistulas. Occurring after childbirth or during a proctological pathology, they create a deep distress for the patients. The aim of our work is to analyze the epidemiological particularities and the risk factors of occurrence of RVF as well as the modalities and results of our therapeutic management.

Materials and methods: Our work is retrospective analytic and comparative concerning 6 cases operated in the department of general surgery 3 of the UHC Ibn Rochd of Casablanca for recto vaginal fistula or recidive over a period of 7 years from 2012 to 2018.

Results: The analysis of the results of our study allowed us to note: A frequency of occurrence of RVF of about 0.48%. The average age at diagnosis was 55 in our patients. The etiologies were dominated by post-radiation (33.33%) and post-operative (16.66%) RVFs. The predominant mode of delivery in our study was vaginal delivery (83.33%). The antecedents were dominated by pelvic irradiation in 50% of patients, and pelvic surgery for cervical cancer and/or rectal cancer (50%). The diagnosis was revealed by a vaginal stool output in all patients. Surgical treatment was performed in all our patients. The surgical technique of choice in our series was drainage by Stenon, in 83.33% of patients. A protective stoma was performed in all our patients studied, a colostomy in 66.66%, and an ileostomy in 33.33% of patients. The immediate postoperative evolution was excellent in all our patients, while the short- and medium-term evolution revealed the occurrence of recurrence in one third of the patients (33.33%). The treatment of choice for recurrence was the interposition of a pedicled fat flap of the labia majora, known as the modified Martius technique. The morbidity, represented mainly by recurrence, was 25%, with a mortality rate of 0%.

Discussion: The occurrence of RVF in all its etiologies seems to be infrequent. However, its real incidence remains poorly documented in the literature, it varies between 0.3% and 15.3%. RVFs are considered simple or complex depending on their size, location and etiology. The high or low location and the etiology of the RVF determine the choice of the approach during surgical management. The diagnosis is most often clinical. The examination will try to find the cause of the RVF and the associated lesions. RVF can be asymptomatic. The importance of the symptoms depends on the topography of the fistula, the diameter of the orifice, and the quality of the intestinal transit. No additional investigations are required to confirm the diagnosis of RVF, since the positive diagnosis is essentially clinical. However, in the case of a high or complex fistula, the clinician can support his or her pre-therapeutic assessment with the exploration of imaging data, especially those of the digestive opacification, MRI and pelvic CT. The causes of RVFs are multiple. However, their proportions are difficult to establish. Post-obstetrical RVFs, those due to Crohn's disease, and post-op are probably the most frequent. The literature describes a variety of surgical approaches and treatment options for RVF. However, there are no treatment recommendations. The available data are vague and do not define an optimal treatment. Medical treatment with antibiotics and sitz baths is often necessary to control the local infection. The surgical management of RVFs is complex and follows several principles. The therapeutic arsenal is very varied and constitutes a real "escalation", ranging from simple drainage by suture to the radical treatment represented by abdominal-pelvic amputation. The results of the treatment of simple VF are excellent in all studies. The healing rate varies from 75 to 100% depending on the authors.

^{*} Corresponding author.

E-mail address: dr.elkarouachi@gmail.com (A. El Karouachi).

<https://doi.org/10.1016/j.ijscr.2021.106322>

Received 27 June 2021; Received in revised form 25 July 2021; Accepted 15 August 2021

Available online 20 August 2021

2210-2612/© 2021 Published by Elsevier Ltd on behalf of IJS Publishing Group Ltd. This is an open access article under the CC BY-NC-ND license

(<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

Conclusion: The results of this study confirm the low incidence of RVF, and show that vaginal delivery and a history of pelvic surgery (for rectal or cervical cancer) are the most frequent predictors of RVF. Thus, from a therapeutic point of view, medical treatment is always required, it allows the flow of the fistula to be reduced, which facilitates preparation for the surgical procedure.

1. Introduction

Recto-vaginal fistula (RVF) is defined as a pathological epithelialized communication between the posterior wall of the vagina and the anterior wall of the rectum through the recto-vaginal septum. It matches the posterior wall of the middle and lower segment of the vagina with the anterior wall of the sub peritoneal rectum, lacking a *meso* [1]. RVFs are rare and represent less than 5% of rectal fistulas [2]. Occurring after childbirth or during a proctological pathology, they create a deep distress for the patients. This complication delays the resumption of professional, social and sexual life, and often requires prolonged treatment. The aim of our work is to analyze the epidemiological particularities and the risk factors of occurrence of RVF as well as the modalities and results of our therapeutic management. This work has been reported to the scare criteria 2020 [3].

2. Materials and methods

Our work is retrospective analytic and comparative concerning 6 cases operated in the department of general surgery 3 of the UHC Ibn Rochd of Casablanca for recto vaginal fistula or recidive over a period of 7 years from 2012 to 2018.

3. Results

The analysis of the results of our study allowed us to note: A frequency of occurrence of RVF of about 0.48%. The average age at diagnosis was 55 in our patients. The etiologies were dominated by post-radiation (33.33%) and post-operative (16.66%) RVFs. Obstetric RVFs are excluded as they are managed in gynecological surgery departments. The predominant mode of delivery in our study was vaginal delivery (83.33%). The antecedents were dominated by pelvic irradiation in 50% of patients, and pelvic surgery for cervical cancer and/or rectal cancer (50%). The average delay between the onset of symptoms and the consultation was 31.5 days. The diagnosis was revealed by a vaginal stool output in all patients. The bi-digital touch was used to make the diagnosis in all patients. The medical treatment induced a slight improvement of the clinical symptomatology with a decrease of the fistula flow in all patients, but without any real cure. Surgical treatment was performed in all our patients. The surgical technique of choice in our series was drainage by Stenon, in 83.33% of patients, followed by interposition of the pedicled fat flap of the greater lip, known as the modified Martius technique, in 16.66% of patients. A protective stoma was performed in all our patients studied, a colostomy in 66.66%, and an ileostomy in 33.33% of patients. The restoration of continuity was required in half of the patients (50%), with an average delay of 45.3 weeks. The immediate postoperative evolution was excellent in all our patients, while the short- and medium-term evolution revealed the occurrence of recurrence in one third of the patients (33.33%). The treatment of choice for recurrence was the interposition of a pedicled fat flap of the labia majora, known as the modified Martius technique. The morbidity, represented mainly by recurrence, was 25%, with a mortality rate of 0%.

4. Discussion

RVFs, like other fistulas, result from a complication, underlying disease, surgery or injury. Loss of wall integrity with an ongoing inflammatory, infectious, or neoplastic process in the rectal or vaginal wall

can lead to erosion of adjacent tissue or organ and thus establish the abnormal fistulous connection. When the initial process is reversible or curable, as in diverticulitis, fistulas have a better chance of disappearing [4].

The occurrence of RVF in all its etiologies seems to be infrequent. However, its real incidence remains poorly documented in the literature. According to our bibliographic research, it varies between 0.3% and 15.3%. In our monocentric series over 7 years, 6 patients out of 2868 were treated surgically for RVF, with an incidence of 0.48% [5,6].

RVFs are considered simple or complex depending on their size, location and etiology. The high or low location and the etiology of the RVF determine the choice of the approach during surgical management (trans-anal and/or vaginal approach in case of low fistula, combined abdominal and perineal approach in case of high or complex fistula) [7].

The diagnosis is most often clinical. The examination will try to find the cause of the RVF and the associated lesions. RVF can be asymptomatic. The importance of the symptoms depends on the topography of the fistula, the diameter of the orifice, and the quality of the intestinal transit. Small diameter fistulas usually have discrete symptoms in the form of vaginal irritation or oozing. On the other hand, larger diameter RVFs will cause passage of gas or material through the vagina. They are most often complicated by a more or less purulent discharge from the vagina, as well as by recurrent vaginal and/or urinary tract infections. Thus, the discharge of stool and/or purulent vaginal discharge is the main symptom and is considered the main criterion for defining symptomatic RVF. The clinical examination should be thorough. It should include a thorough assessment of all lesions. The bi-digital examination in the gynecological position is considered the best means of exploration, best performed under general anesthesia in case of pain [8].

No additional investigations are required to confirm the diagnosis of RVF, since the positive diagnosis is essentially clinical. However, they can be useful for exploration in doubtful cases or serve for pre-therapeutic topographic evaluation [9,10]. Rectoscopy and anoscopy allow exploration of the anal canal, the rectal mucosa and to search for the primary orifice of the fistula [11]. In the case of a high or complex fistula, the clinician can support his or her pre-therapeutic assessment with the exploration of imaging data, especially those of the digestive opacification (Fig. 1), MRI and pelvic CT.

The causes of RVFs are multiple. However, their proportions are difficult to establish. The studies published on this subject often concern small series reflecting the specific activity of a department or a surgeon. Post-obstetrical RVFs, those due to Crohn's disease, and post-op are probably the most frequent. According to Manaouil et al. [12] they represent two thirds of all RVF etiologies. Other causes (neoplastic, traumatic, iatrogenic) remain exceptional.

The literature describes a variety of surgical approaches and treatment options for RVF. However, there are no treatment recommendations. The available data are vague and do not define an optimal treatment.

Medical treatment with antibiotics and sitz baths is often necessary to control the local infection. Thus, it was initially indicated in all our patients. An improvement of the symptoms was obtained but without any spontaneous cure. Similarly, Fleschner et al. [13] studied 9 cases of RVF after colorectal surgery, and no fistula closed spontaneously after medical treatment with anti-diarrhea drugs after 12 months of monitoring.

The surgical management of RVFs is complex and follows several principles. The treatment depends on the etiology of the fistula, its high or low location and the quality of the anal sphincter. The therapeutic

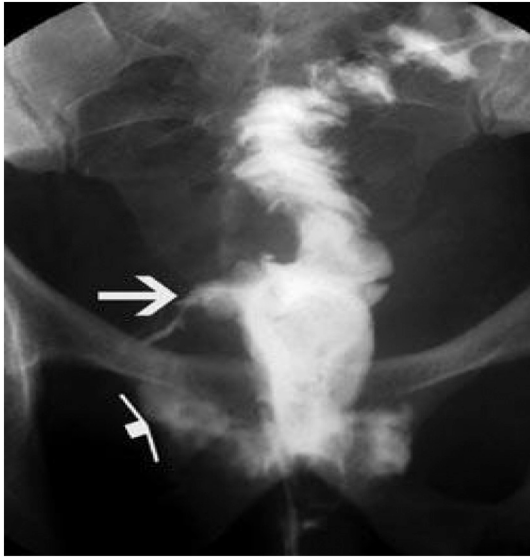


Fig. 1. Low digestive opacification showing recto vaginal fistula.

arsenal is very varied and constitutes a real “escalation”, ranging from simple drainage by suture to the radical treatment represented by abdominal-pelvic amputation. Generally, the management of RVFs starts with a so-called “conservative” treatment, and in the absence of cure, the indication of more invasive procedures is necessary. The surgical techniques proposed for the treatment of RVFs are numerous and are oriented according to their etiology and location, such as suture drainage, which consists of placing a wire or drain (in silicone, latex or nylon) in the fistula path under anesthesia, and the gluing of the fistula path/ placement of a plug, which is a cone-shaped implant designed to be placed in the fistula path [12,14,15].

The medium- and long-term results depend on the etiology of the fistula, but remain satisfactory with correct healing in more than two thirds of cases, often at the cost of a protective stoma [12]. The results of the treatment of simple VF are excellent in all studies. The healing rate varies from 75 to 100% depending on the authors [16].

Given the low incidence of fistulas, and their initial severity, it is difficult to construct reliable randomized studies, and the number of patients analyzed is often small and heterogeneous to reach clear conclusions. This explains the low level of evidence available in the literature.

5. Conclusion

The results of this study confirm the low incidence of RVF, and show that vaginal delivery and a history of pelvic surgery (for rectal or cervical cancer) are the most frequent predictors of RVF. (It is important to take into consideration the small number of patients in our series and its retrospective nature). Then, from a therapeutic point of view, medical treatment is always required, it allows the flow of the fistula to be reduced, which facilitates preparation for the surgical procedure which is mainly chosen according to the etiology and local characteristics of the fistula such as its location and size. Stenon Drainage seems to be a simple and practical technique, with an acceptable success rate, and a low morbidity rate (25%) determined mainly by recurrence. The Martius flap is often used to treat recurrence.

Funding

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

Ethical approval

This case report is exempt from ethical approval at our institution.

Consent

Written informed consent was obtained from the patient for publication of this case report and accompanying images. A copy of the written consent is available for review by the Editor-in-Chief of this journal on request.

Author contribution

El karouachi Asmaa: Corresponding author writing the paper and operating surgeon

Saad Rifki Jai: writing the paper and operating surgeon

Hajri Amal: writing the paper

Driss Erguibi: study concept

Rachid Boufettal: study concept

Farid Chehab: correction of the paper

Registration of research studies

The datasets in this article are available in the repository of the general surgery database, CHU Ibn Rochd, upon request, from the corresponding author.

researchregistry2464.

Provenance and peer review

Not commissioned, externally peer reviewed.

CRediT authorship contribution statement

In progress.

Declaration of competing interest

The authors declare having no conflicts of interest for this article.

References

- [1] F. Aignier, A.P. Zbar, B. Ludowikowzki, A. Kreczy, P. Kovacs, H. Fritsch, The recto-vaginal septum: morphology, function, and clinical relevance, *Dis. Colon Rectum* 47 (2004) 131–140.
- [2] Karla A. Santos Jasso, F. Antonio Medina Vega, Jorge Maza Vallejos, M. Antonieta Cabrera Hernandez, Surgical Repair of Complex Rectovaginal Fistulas: Report of Two Cases, 2017.
- [3] R.A. Agha, T. Franchi, C. Sohrabi, G. Mathew, A. Kerwan, A. Thoma, et al., The SCARE 2020 guideline: updating consensus surgical case report (SCARE) guidelines, *Int. J. Surg.* 84 (2020) 226–230.
- [4] Faiz Tuma, Zaid Al-Wahab, Rectovaginal Fistula, 2018.
- [5] J.C. Rex Jr., I.T. Khubchandani, Rectovaginal fistula: complication of low anterior resection, *Dis. Colon Rectum* 35 (4) (1992) 354–356.
- [6] S.H. Baik, N.K. Kim, K.Y. Lee, S.K. Sohn, C.H. Cho, Hand-sewn coloanal anastomosis for distal rectal cancer: long-term clinical outcomes, *J. Gastrointest. Surg.* 9 (6) (August 2005) 775–780.
- [7] Teresa H. de Beche-Adams, Jaime L. Bohl, Rectovaginal fistulas, *Clin. Colon Rectal Surg.* 23 (2010) 99–103.
- [8] J.M. Regimbeau, Y. Panis, P. De, Marteau P. V. Valleur P., Manifestations anopérinéales de la maladie de Crohn, *Gastroenterol. Clin. Biol.* 24 (2000) 36–47.
- [9] S. Yodonawa, I. Ogawa, S. Yoshida, H. Ito, K. Kobayashi, R. Kubokawa, Rectovaginal fistula after low anterior resection for rectal cancer using a double stapling technique, *Case Rep. Gastroenterol.* 4 (2010) 224–228.
- [10] M.P. Nowacki, A.W. Szawlowski, A. Borkowski, Parks' coloanal sleeve anastomosis for treatment of postirradiation rectovaginal fistula, *Dis. Colon Rectum* 29 (1986) 817–820.
- [11] A. Berger Frileux, P. F. Zinzindohoue, Fistules rectovaginales de l'adulte, *Ann Chir* 48 (1994) 412–420.
- [12] D. Manaoui, F. Dumont, J.M. Regimbeau, H. Duval, F. Brazier, J.L. Dupas, P. Verhaeghe, Fistules rectovaginales acquises de l'adulte, *Gastroenterol. Clin. Biol.* 28 (2004) 1267–1279.

- [13] M.D. Rosenshein, Rene R anatomic classification of rectovaginal septal defects, *Am. J. Obstet. Gynecol.* 137 (1990) 439.
- [14] A. Senagore, Treatment of anovaginal and rectovaginal fistulas, *Semin. Colon Rectal Surg.* 1 (1990) 219–223.
- [15] P.L. Roberts, Recto-vaginal fistula, *Semin. Colon Rectal Surg.* 18 (2007) 69–78.
- [16] R. Musset, Fistules recto-vaginales, in: *Encycl Méd Chir (Paris, France). Techniques Chirurgicales. Urologie-Gynécologie* 41870, 1979.