



**University of
Zurich**^{UZH}

**Zurich Open Repository and
Archive**

University of Zurich
University Library
Strickhofstrasse 39
CH-8057 Zurich
www.zora.uzh.ch

Year: 2021

First case of four spontaneously conceived successful pregnancies after fertility-sparing surgery for cervical cancer

Metzler, Julian Matthias ; Schaer, Gabriel ; Imesch, Patrick

Abstract: Cervical cancer represents a particular burden when affecting women in their fertile years. Fertility-sparing surgery such as trachelectomy can maintain a woman's childbearing ability. Favorable outcomes are possible, as depicted in this case. Keywords: cervical cancer; fertility-sparing surgery; live birth rate; stage IB1; trachelectomy.

DOI: <https://doi.org/10.1002/ccr3.4534>

Posted at the Zurich Open Repository and Archive, University of Zurich

ZORA URL: <https://doi.org/10.5167/uzh-213928>

Journal Article

Published Version



The following work is licensed under a Creative Commons: Attribution-NonCommercial-NoDerivatives 4.0 International (CC BY-NC-ND 4.0) License.

Originally published at:

Metzler, Julian Matthias; Schaer, Gabriel; Imesch, Patrick (2021). First case of four spontaneously conceived successful pregnancies after fertility-sparing surgery for cervical cancer. *Clinical Case Reports*, 9(9):e04534.

DOI: <https://doi.org/10.1002/ccr3.4534>

First case of four spontaneously conceived successful pregnancies after fertility-sparing surgery for cervical cancer

Julian Matthias Metzler  | Gabriel Schaer | Patrick Imesch

Department of Gynecology, University Hospital Zurich, Zurich, Switzerland

Correspondence

Julian Metzler, University Hospital Zurich, Frauenklinikstrasse 10, 8091 Zurich, Switzerland.
Email: Julian.Metzler@usz.ch

Funding information

This research received no external funding

Abstract

Cervical cancer represents a particular burden when affecting women in their fertile years. Fertility-sparing surgery such as trachelectomy can maintain a woman's child-bearing ability. Favorable outcomes are possible, as depicted in this case.

KEYWORDS

cervical cancer, fertility-sparing surgery, live birth rate, stage IB1, trachelectomy

1 | INTRODUCTION

We present the case of a young woman with early-stage cervical cancer who received fertility-sparing treatment using trachelectomy. This is the first case of 4 subsequent, spontaneously conceived pregnancies after trachelectomy.

For women with early-stage cervical cancer who desire future fertility, fertility-sparing surgery (FSS), such as conization or trachelectomy, is an alternative to radical hysterectomy. Simple trachelectomy (ST) refers to the removal of approximately 2/3 of the cervix, whereas radical trachelectomy (RT) involves the additional removal of the parametria and a vaginal cuff. Surgical approaches include vaginal (VRT, *Dargent's procedure*), abdominal (ART), and minimally invasive radical trachelectomy (MIS-RT).

The use of trachelectomy has been increasing recently, especially in women <30 years, and the oncological outcome in terms of survival is comparable to hysterectomy.¹

Even though trachelectomy is an oncologically feasible option, there is an increased risk of adverse obstetrical and perinatal outcomes, with a reduced pregnancy rate, an increased abortion rate, and an elevated risk of preterm delivery.

Few papers discuss the oncologic and obstetric management in this patient population, and spontaneous conception

has rarely been reported. We describe the case of a 28-year-old woman with stage IB1 cervical cancer, who had four spontaneously conceived and successful pregnancies after laparoscopic lymphadenectomy followed by VRT. To the best of our knowledge, this is the first report of four live births after VRT for cervical cancer.

2 | CASE REPORT

A 28-year-old Caucasian woman was referred to our hospital in 2016 for treatment of a cervical high-grade intraepithelial lesion (HSIL/CIN III). The asymptomatic patient had a history of low-grade cervical lesions (LSIL) since 2014, which were first discovered as incidental findings in a screening examination, and no pre-existing conditions. Family history was negative for malignancy. After conization, histology revealed a squamous cell carcinoma (SCC) with a depth of invasion of 0.5 mm, a maximum width of 10.0 mm, and free surgical margins, resulting in a TNM stage of pT1B1V0L0G1 (FIGO IB1). Endocervical curettage excluded endocervical involvement. Following the case discussion at the tumor board, radiological and histological staging in combination with FSS was recommended, as the patient wished to conceive in the future.

This is an open access article under the terms of the Creative Commons Attribution-NonCommercial-NoDerivs License, which permits use and distribution in any medium, provided the original work is properly cited, the use is non-commercial and no modifications or adaptations are made.

© 2021 The Authors. *Clinical Case Reports* published by John Wiley & Sons Ltd.

A close postoperative oncological surveillance is mandatory. In the first three years postoperatively, we recommend clinical and sonographic follow-up visits every three months, accompanied by cytology every six months. This is followed by clinical, sonographic, and cytological follow-up every 6 months during years four and five, in line with current national guidelines.⁵ Thereafter, we recommend continuing with yearly follow-ups, as late recurrences have been reported.³ In our case, a pelvic examination, sonography, and Pap smear were performed during every follow-up visit. To date, the cytological results have reported an absence of intraepithelial lesion or malignancy.

After childbearing, a hysterectomy is recommended for completion.⁵

3.2 | Obstetrical considerations

Regarding obstetrical outcomes after trachelectomy, the main issues include difficulty to conceive, increased risks of pregnancy loss and preterm birth.

Conception rates after radical trachelectomy vary greatly between studies. In a recent meta-analysis that investigated FSS (all types) for early-stage cervical cancer, 3044 patients including 1047 pregnancies were identified.² The pregnancy rate of women trying to conceive was 55%. The highest pregnancy rate was found in patients undergoing VRT (67.5%). 20% of the pregnancies required assisted reproductive technology, but this rate has been reported to be as high as 55%.⁶ The encouraging fertility observed in our patient is multicausal and can only be explained to some extent. The below-average age of 28 years at diagnosis should be noted. Regarding surgical technique, the sparing of the uterine artery and the postoperative indwelling of a foley catheter in utero to avoid stenosis could be beneficial factors in avoiding subfertility.

Pregnancy loss is increased after FSS for cervical cancer. A meta-analysis containing 805 pregnancies after RT reported an abortion rate of 24.0% (18.8–29.6%).⁷ Regarding VRT, Nezhat et al. found a live birth rate of 63.4% among women who became pregnant.²

After FSS, the risk for preterm birth is increased. In a systematic review, 27/200 pregnant women delivered between 24 and 34 weeks, equivalent with a 13.5% rate of early or moderate preterm births,⁸ and up to 34.6% of the pregnancies were reported to be delivered between 24 and 36 weeks.²

A number of surgical techniques have been advocated for preterm birth prevention. Total cervicovaginal occlusion has been mentioned in some publications, but is not routinely recommended, as the extent of cervical removal and the patient's obstetrical history need to be taken into account when assessing the risk for preterm birth.⁸

Cervical cerclage is a more common approach and routinely done by many surgeons; the majority of successful

pregnancies were found in patients with CC in situ.⁸ In our patient, we observed a favorable outcome with a maintained cerclage; nevertheless, the issue remains controversial, and some authors have abandoned CC placement due to lack of supporting data.³

The use of second-trimester sonography to assess cervical length has been recommended as a predictor of preterm birth.² When implementing this technique after trachelectomy, it is important to remember that standard values for cervical length screening neither apply nor exist, but a new-onset dynamic shortening should prompt caution. As expected, our patient had difficulties in carrying pregnancies to term, but given the high pre-existing risks, the gestational ages achieved (34–36 weeks) represent an exceptional outcome.

4 | CONCLUSIONS

We describe the first case of four spontaneously conceived and successful pregnancies after VRT.

Fertility-sparing surgery is a safe and feasible option for women with early-stage cervical cancer wishing to maintain their childbearing ability. However, the obstetrical outcome can be compromised, with a decreased pregnancy rate as well as an increased risk for abortion and preterm birth.

ACKNOWLEDGMENTS

Thanks to Carla Trachsel for proofreading the article. Published with written consent of the patient.

CONFLICT OF INTEREST

The authors declare no conflict of interest.

AUTHOR CONTRIBUTIONS

J.M. and P.I.: Conceptualization. J.M.: Writing—original draft preparation and project administration. P.I. and G.S.: Supervision. All authors: Writing—review and editing. All authors have read and agreed to the published version of the manuscript.

ETHICAL APPROVAL

Institutional Review Board Statement: According to Swiss law, this is no research project under the Swiss Human Research Act (Humanforschungsgesetz, HFG) and therefore, no authorization is required. Written informed consent was obtained from the patient for publication of the case report and accompanying images.

INFORMED CONSENT

A copy of the written consent is available for review by the Editor-in-Chief of this journal on request.

DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to privacy or ethical restrictions.

ORCID

Julian Matthias Metzler  <https://orcid.org/0000-0002-0000-8577>

REFERENCES

1. Cui RR, Chen L, Tergas AI, et al. Trends in use and survival associated with fertility-sparing trachelectomy for young women with early-stage cervical cancer. *Obstet Gynecol*. 2018;131:1085-1094. <https://doi.org/10.1097/AOG.0000000000002613>
2. Nezhat C, Roman RA, Rambhatla A, Nezhat F. Reproductive and oncologic outcomes after fertility-sparing surgery for early stage cervical cancer: a systematic review. *Fertil Steril*. 2020;113:685-703. <https://doi.org/10.1016/j.fertnstert.2020.02.003>
3. Kuznicki ML, Chambers LM, Morton M, et al. Fertility-Sparing Surgery for Early-Stage Cervical Cancer: A Systematic Review of the Literature. *J Minim Invasive Gynecol*. 2021;28(3):513-526.e1. <https://doi.org/10.1016/j.jmig.2020.10.013>
4. Estevez JP, Hequet D, Dubot C, et al. Fertility sparing treatment in women affected by cervical cancer larger than 2cm. *Bull Cancer*. 2016;103:173-179. <https://doi.org/10.1016/j.bulcan.2015.11.005>
5. Leitlinienprogramm Onkologie (Deutsche Krebsgesellschaft, Deutsche Krebshilfe, AWMF): S3-Leitlinie Diagnostik, Therapie und Nachsorge der Patientin mit Zervixkarzinom, Langversion, 1.0, 2014, AWMF-Registernummer: 032/033OL. 2014. Available online: <http://leitlinienprogramm-onkologie.de/Leitlinien.7.0.html>. Accessed December 12, 2020.
6. Hauerberg L, Hogdall C, Loft A, et al. Vaginal Radical Trachelectomy for early stage cervical cancer. Results of the Danish National Single Center Strategy. *Gynecol Oncol*. 2015;138:304-310. <https://doi.org/10.1016/j.ygyno.2015.05.016>
7. Zhang Q, Li W, Kanis MJ, et al. Oncologic and obstetrical outcomes with fertility-sparing treatment of cervical cancer: a systematic review and meta-analysis. *Oncotarget*. 2017;8:46580-46592. <https://doi.org/10.18632/oncotarget.16233>
8. Jolley JA, Battista L, Wing DA. Management of pregnancy after radical trachelectomy: case reports and systematic review of the literature. *Am J Perinatol*. 2007;24:531-539. <https://doi.org/10.1055/s-2007-986680>

How to cite this article: Metzler JM, Schaer G, Imesch P. First case of four spontaneously conceived successful pregnancies after fertility-sparing surgery for cervical cancer. *Clin Case Rep*. 2021;00:e04534. <https://doi.org/10.1002/ccr3.4534>