

Case Report

A rare case of symptomatic recurrent decidual polyp in each pregnancy in a woman with primary infertility

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Abstract

Background: Decidual polyps are protruding nodules of ectopic decidualis of endocervical stroma that occur during pregnancy. They are benign changes, associated with recurrent vaginal bleeding and infections, which can result in miscarriage, preterm premature rupture of membranes (PPROM), premature labor and/or delivery. There are no strict treatment guidelines for decidual polyps during pregnancy. **Case:** This paper describes a case of recurring symptomatic decidual polyp in each of the three pregnancies of a woman treated in our clinic for primary infertility. During the first and second pregnancy, we opted for polypectomy and conservative treatment, respectively. In both cases this led to loss of the fetus. During the patient's third pregnancy we performed polypectomy and closely monitored both the patient and the fetus; she delivered a healthy baby in the 38th week of gestation. **Conclusions:** Due to the lack of clear guidelines, we maintain that frequent checkups, urethral swabs and polypectomy during the first trimester will lead to a positive outcome, i.e., delivery of a healthy baby by a healthy mother.

Keywords: Decidual polyp; Chorioamnionitis; First-trimester bleeding; Missed abortion; Polypectomy; PPROM

1. Introduction

Decidual polyps are protruding nodules of ectopic decidualis of endocervical stroma that occur during pregnancy. They are benign changes, associated with recurrent vaginal bleeding and infections, which can result in miscarriage, preterm premature rupture of membranes (PPROM), premature labor and/or delivery. Decidual polyps are not rare; research indicates such occurrence in 34% of all pregnant women. However, symptomatic decidual polyps are not frequently detected. This paper presents a unique case of a patient with reappearing decidual polyps during each of the pregnancies, discussing different treatment methods which still divide expert opinions.

2. Case presentation

27-year-old first gravida was admitted at the 6th week of gestation with a history of vaginal bleeding. She was treated for infertility with recombinant hFSH and recombinant hCG stimulation, followed by intrauterine insemination (IUI). As part of the infertility treatment, nine months prior to the IUI, hysteroscopy was performed to remove an endometrial polyp in the uterine cavity. The patient was also subjected to a diagnostic laparoscopy, which did not show any signs of endometriosis, adhesions or any other pathology. Chromopertubation was also performed and it showed patent fallopian tubes. She had a history of cervical intraepithelial neoplasia (CIN) 3 as well, with a large loop excision of the transformation zone (LLETZ), performed five years prior to her admittance to our fertility clinic.

Colposcopy and vaginal ultrasound (VUS) showed a 22 × 10 mm decidual polyp protruding from the uterine cervix, which had not been identified during the examinations preceding the IUI. In addition to the careful examination, a laboratory blood analysis was also performed, and no other cause for the bleeding was identified. Torsion polypectomy with forceps was performed later that week. Histological analysis of the polyp showed decidualized and hypersecretory transformed endometrium, without any signs of trophoblast or fetal tissue. After the polypectomy, the bleeding ceased and the patient did not have any other symptoms. However, in the 10th week of pregnancy, she had a missed abortion.

Six months later, she underwent an *in-vitro* fertilization (IVF) with a fresh embryo transfer. She presented to the clinic at her 10th week of pregnancy with lower abdominal cramps and brownish-yellow vaginal discharge with an unpleasant odor. Yet another decidual polyp 40 × 10 mm was detected upon examination and urinalysis showed a urinary tract infection (UTI). An oral antibiotic was administered. This time, the polyp was not removed, but monitored and treated conservatively. During the pregnancy, she had occasional vaginal bleeding and recurring UTI, treated with antibiotics every time. The fetal growth parameters were within the normal range. At 20 weeks of gestation, she was admitted because of a PPROM. Considering the low gestational age, signs of chorioamnionitis (fever, maternal and fetal tachycardia, elevation of inflammatory markers in blood after the PPROM) and unfavorable prognosis, abortion was induced. Genetic analysis revealed a normal male



karyotype. The autopsy results indicated no fetal developmental anomalies, and confirmed the initial clinical diagnosis of chorioamnionitis—there were histological signs of inflammation of the placenta and the fetal membrane due to an infection. The Commission for the analysis of stillbirth and developmental anomalies¹ suggested regular vaginal and urethral swabs before and during the next pregnancy. Note that, in our hospital, urethral swabs are not regularly performed during pregnancy, they are only performed with high-risk pregnancy patients with possible complications from an UTI.

After the delivery, some residual placental tissue remained in the uterine isthmus and cervix and therefore uterine curettage was performed. Since there were no indications of the polyp during the last examination prior to the discharge and it was not evidenced in the pathology report, the most likely conclusion is that it has been removed during the curettage.

One year later, the patient underwent a second IVF, this time with a frozen embryo transfer, which resulted in her third pregnancy. Following the Commission's instructions, vaginal and urethral swabs were performed regularly. Vaginal swabs showed presence of normal mixed vaginal bacterial flora each time (the Nugent score varied between 0 and 2). However, a urethral swab before the beginning of the IVF cycle showed presence of *Ureaplasma parvum*, bacteria that can act as a commensal or a pathogen. Having in perspective the previous pregnancy outcomes, we started treatment with doxycycline and dequalinium chloride. At the 7th week of pregnancy (now gravida 3 para 0) she returned to the clinic reporting a vaginal bleeding the previous day. As expected, the cause for the bleeding was a decidual polyp, 26 × 18 × 13 mm. No other causes for the bleeding were identified. The urethral swab was positive for *Alloscardovia omnicolens*, Gram-positive bacteria, rarely encountered in clinical specimens. It can be associated with UTI, but also it can be a member of the urinary tract microbiota. Microbiologists advised taking probiotics per os and repeating the swab in two weeks. Polypectomy with electrocoagulation was performed in the 10th week of pregnancy. The procedure was performed under general anesthesia, the patient was placed in a lithotomy position. First, the decidual polyp was identified, it was a 3 × 2 cm peduncle, with its root being 1.5 cm deep into the cervical canal. Bipolar forceps was used to grasp the polyp at its basis; it was then electrocoagulated and

it fell off without any bleeding. The histological examination showed a completely decidualized stroma with only a few endometrial stromal glands and atrophied epithelium. No trophoblast tissue was identified. The pathologist concluded that the results are consistent with the diagnosis of a decidual polyp.

During the remaining gestation period, she did not have any vaginal bleedings, the urethral swabs were occasionally positive only for commensal bacteria and the test for sexually transmitted diseases was negative. Vaginal swabs were positive for lactobacilli only (Nugent score 1). At the 14th and the 22nd week of gestation, during regular pregnancy screening, she was diagnosed with asymptomatic bacteriuria. Antibiotics were prescribed both times. The remaining gravidity was uneventful. She delivered a healthy female baby in the 38th week of pregnancy.

No polyps were identified during the examinations conducted between the pregnancies or after delivery.

3. Discussion

During pregnancy, the endometrium undergoes a physiological decidual transformation as a result of elevated progesterone levels and its consequently potentiated action [1]. However, decidual foci sometimes can be found in other parts of the female reproductive system (vagina, cervix, fallopian tubes, ovaries), rarely even in the abdominal cavity [2]. In those cases, it is called ectopic decida or decidualosis [1].

The first case of decidual ectopy in the cervix of a pregnant patient was described in the late 19th century and it was considered a rare occurrence for almost a hundred years. Research in the 1970s and 1980s indicated that it might not be such a rare condition after all, reporting decidual cervical changes in 3–34% of pregnant women that had been examined. Furthermore, ectopic decidual tissue in the cervix was found in up to 60% in hysterectomy specimens, removed during pregnancy for either benign or malignant disease. Interestingly, cervical decidualization has not been reported in women with an ectopic pregnancy. It has been spotted in the cervix of non-pregnant women, although it is very uncommon [2].

There are two theories that explain the decidualization of the cervix. The first one suggests that cervical stroma cells undergo decidual metaplasia as a result of inflammation, which makes them more susceptible to stimulation by hormones (predominantly progesterone) and other signal molecules, elevated during pregnancy. The other explanation proposes the presence of endometrial foci within the cervix, which undergoes the same changes as normal endometrial tissue during pregnancy [1,2].

Decidual cervical changes most frequently occur with pregnant women aged 20–25. Most of them are diagnosed in the first trimester (most commonly between the 5th and the 12th week of gestation) and start to regress after the 25th week. All decidual changes regress in the period between

¹ After abortion/delivery of a pathological pregnancy, the fetus and the placenta are sent for genetic and pathological examination. Upon receiving the results, every case from our hospital is discussed by the Commission for the analysis of stillbirth and developmental anomalies. After careful analysis it issues a written conclusion. The Commission provides instructions on possible further examinations that the women should undergo before the next pregnancy (e.g., additional genetic tests, search for abnormalities in the development of the uterus, the exclusion of certain diseases of the mother). The Commission develops guidelines for managing the next pregnancy.

the 38th week of pregnancy [2] and 4–6 weeks after delivery [1].

They appear as multicolored (brown, yellow, pink or white), small elevated nodules, polyps or ulcerations on colposcopy [2]. Diagnoses are rarely based on colposcopy alone, as cervical decidualosis can resemble cervical adenoma, polyp, dysplasia or carcinoma. Therefore, histological analysis is needed [1]. Cytology is not accurate enough to be used as a sole diagnostic method for decidual changes. However, it helps rule out malignancy [3].

Cervical decidualosis is usually asymptomatic, being an incidental finding during a routine examination [1]. Rarely, an extensive decidual change of cervical stroma forms a polypoid protrusion from the endocervix, so-called decidual polyp [4,5], which is susceptible to infection and can cause vaginal discharge. As any other decidual change, it can also cause bleeding, which occurs spontaneously or following intercourse, gynecological examination or douching. Bleeding in the first trimester is especially serious, as it can be a sign of threatened abortion or extrauterine pregnancy [3].

Management of decidual polyps remains a gray area and a difficult topic throughout the years. Thus, there is still no unified opinion among experts. Removal of decidual polyps may cause bleeding and/or inflammation that can affect the endometrium above, and it is associated with a higher risk of spontaneous abortion and preterm birth [6]. There are claims that it may be prudent not to disturb them and opt for a conservative treatment. Excision is recommended only if malignancy cannot be excluded [7].

On the other hand, the environment itself, in which the decidual polyp grows, may also lead to complications [6]. Genital bleeding (in this case caused by the decidual polyp) is a known risk factor for miscarriage or preterm delivery. Furthermore, the polyp may cause cervicitis, which can lead to severe inflammation and infection and spread to the endometrium, resulting in chorioamnionitis, which then can lead to the aforementioned complications [7].

Essentially, if the polyp is small, it should be managed conservatively, if it is big, removal and antibiotic therapy afterward is recommended [8]. What size should the decidual polyp be to be classified as big or small is yet to be determined and at the moment depends on the treating physician's assessment. A more recent study maintained that delivery before the 34th week of pregnancy can be caused by the following risk factors: polyps larger than 12 mm, bleeding prior to polypectomy and polypectomy performed in early pregnancy (at 10 weeks of gestation or earlier). It is still unknown whether the preterm delivery is caused by the polyp itself or the polypectomy. An additional risk factor, that can lead to infection and loss of the fetus, is bacterial vaginosis [7]. Since the patient in the case reported in this paper presented with UTIs, chorioamnionitis and recurring asymptomatic bacteriuria, the infectious aspect of the three pregnancies should also be discussed.

The patient had recurring UTIs in her second pregnancy, caused by *Ureaplasma parvum*. It is a commensal, living in the lower genital tract (cervix and vagina) of 40–80% of sexually active women [9]. However, sometimes it can spread to other sites, becoming a pathogen. In those cases, it causes lower urogenital tract infections (including urinary tract infections) and/or ascending invasive infections (chorioamnionitis) [10], which can then lead to a miscarriage or preterm labor [9,10]. If it is isolated in pregnancy, *Ureaplasma* should be treated with antibiotics. Furthermore, research has indicated that apart from the period of gestation, it should be treated in cases of infertility as well. In terms of infertility, a study of fertile and infertile women undergoing diagnostic laparoscopy (who had no symptoms of genital tract infection) demonstrated that lower genital tract *Ureaplasma* colonization can lead to an asymptomatic infection of the pouch of Douglas [11]. Another study showed presence of *Ureaplasma* spp. in the fallopian tubes and uterine lining in nonpregnant females without any clinical symptoms or abnormal pathology [12,13]. This shows that they are not mostly harmless commensals as previously thought, but they also may affect the embryo at the time of implantation [14].

The data regarding untreated asymptomatic bacteriuria and perinatal outcomes are conflicting. Research has shown that untreated asymptomatic bacteriuria is associated with preterm birth, low birth weight, and increased perinatal mortality [15], while in other studies this association was not found [16].

This paper depicts a case of a patient with recurring decidual polyps in each pregnancy. During the first pregnancy, a polypectomy was performed in the 6th week of gestation. She suffered a miscarriage four weeks later. It is not a standard practice to perform pathological or genetic analysis on miscarriages in early pregnancy (up to 10 weeks) in our hospital, unless there is a viable reason (recurrent abortion, malformations, known genetic disease etc.). In this case, the miscarriage in the first pregnancy was closely analyzed retroactively due to the complications in her following pregnancies. It cannot be claimed that the miscarriage was linked to the polypectomy since it occurred 4 weeks after the polypectomy was performed. Furthermore, there were no signs of inflammation (fever, chills, abdominal pain, foul-smelling discharge etc.) or elevation of inflammatory markers in blood analysis that would suggest that it was an infectious miscarriage, caused by ascendant infection, originating at the basis of the decidual polyp. Moreover, there was no subchorionic hematoma described that would suggest trauma and bleeding. On the other hand, the fact remains that no vaginal and/or urethral swabs were collected and the cause for the miscarriage cannot be specified.

During the second pregnancy, not removing the polyp and treating it conservatively, most probably facilitated the infection [6] after the PPRM, causing chorioamnionitis.

During the third pregnancy, we performed a successful polypectomy by grasping the polyp with forceps and performing electrocoagulation to its root in the 10th week, removing it without any bleeding or tissue damage. In addition, urinalysis, vaginal and urethral swabs were regularly performed and antibiotic therapy was administered when necessary. We opted for polypectomy that early in the pregnancy (after obtaining standard and individual consent from the patient) due to the following reasons:

(1) The polyp was growing rapidly (at the time of the polypectomy it was about 4×2 cm).

(2) The available literature suggested it.

(3) Due to the patient's young age, the probability for a chromosomal aberration was very low; therefore, the benefits and consequences of polypectomy and waiting for the NIPT were weighed and in consultation with the patient, the removal of the polyp was rendered an optimal choice.

(4) The severe psychological pressure on the patient due to the complications with the previous pregnancies.

General anesthesia was opted due to the polyp's size, but also on account of the many unknown variables, having in perspective the best interests of the patient, in an attempt to keep her safe, relaxed and free of pain. Nonetheless, it was a quite simple, non-invasive method of polyp removal which suggests that it could be also performed under local anesthesia.

4. Conclusions

This rare case report presented in this paper explores the subject of management of decidual polyps in pregnancy, which still divides expert opinions. However, it is safe to say, that frequent examinations, vaginal and urethral swabs and urinalysis, combined with bipolar electrocoagulation of the polyp at its root at least in the 10th week of pregnancy can result in a positive outcome. However, if the polyp's root cannot be identified or it is attached to the decidua, then it is probably optimal to treat it conservatively.

Abbreviations

CIN, cervical intraepithelial neoplasia; IUI, intrauterine insemination; IVF, *in-vitro* fertilization; LLETZ, large loop excision of the transformation zone; PPROM, preterm premature rupture of membranes; UTI, urinary tract infection; VUS, vaginal ultrasound.

Author contributions

SK followed up and treated the patient in the last two pregnancies. HBF performed the surgical procedure in the last pregnancy. MB analyzed the patient history and wrote the paper. All authors contributed to editorial changes in the manuscript. All authors read and approved the final manuscript.

Ethics approval and consent to participate

According to our institutional and national policies, this case report is exempted from obtaining in Institutional Review Board approval. We would like to thank the patient for providing oral and written consent and with that permission to report this case.

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Conflict of interest

The authors declare no conflict of interest. HBF is serving as one of the Guest editors of this journal. We declare that HBF had no involvement in the peer review of this article and has no access to information regarding its peer review. Full responsibility for the editorial process for this article was delegated to MHK.

References

- [1] van Diepen DA, Hellebrekers B, van Haaften AM, Natté R. Cervical decidualosis imitating dysplasia. *BMJ Case Reports*. 2015. Available at: <https://casereports.bmj.com/content/2015/bcr-2015-210030> (Accessed: 22 December 2020).
- [2] Batista A. Decidual ectopy of the uterine cervix. In Jordan JA, Singer A, Jones HW, Shafi MI (eds.) *The cervix* (pp. 112–127). Malden, Mass: Blackwell. 2006.
- [3] McGee WB, Slate TA. Decidual reaction of the cervix; a review of 27 cases. *California Medicine*. 1955; 82: 306–308.
- [4] Wright TC, Ronnett BM, Ferenczy A. Benign disease of cervix. In Blaunstein's pathology of the female genital tract (pp. 155–191). 6th edition. New York: Springer-Verlag. 2011.
- [5] Smith JHF. Other tumors and lesions of cervix, vulva and vagina. In Winifred G, Kocjan G. *Diagnostic cytopathology* (pp. 667–668). 3rd edition. Edinburgh: Churchill Livingstone. 2010.
- [6] Tokunaka M, Hasegawa J, Oba T, Nakamura M, Matsuoka R, Ichizuka K, *et al.* Decidual polyps are associated with preterm delivery in cases of attempted uterine cervical polypectomy during the first and second trimester. *The Journal of Maternal-Fetal & Neonatal Medicine*. 2015; 28: 1061–1063.
- [7] Fukuta K, Yoneda S, Yoneda N, Shiozaki A, Nakashima A, Minamisaka T, *et al.* Risk factors for spontaneous miscarriage above 12 weeks or premature delivery in patients undergoing cervical polypectomy during pregnancy. *BMC Pregnancy and Childbirth*. 2020; 20: 27.
- [8] Panayotidis C, Alhuwalia A. Cervical polypectomy during pregnancy: is there any management advances on the last decades. *The Internet Journal of Gynecology and Obstetrics*. 2004. Available at: <https://print.ispub.com/api/0/ispub-article/6111> (Accessed: 5 January 2021).
- [9] Namba F, Hasegawa T, Nakayama M, Hamanaka T, Yamashita T, Nakahira K, *et al.* Placental features of chorioamnionitis colonized with *Ureaplasma* species in preterm delivery. *Pediatric Research*. 2010; 67: 166–172.
- [10] Sweeney EL, Dando SJ, Kallapur SG, Knox CL. The human ureaplasma species as causative agents of chorioamnionitis. *Clinical Microbiology Reviews*. 2016; 30: 349–379.

- [11] Kasprzykowska U, Elias J, Elias M, Mączyńska B, Sobieszkańska BM. Colonization of the lower urogenital tract with *Ureaplasma parvum* can cause asymptomatic infection of the upper reproductive system in women: a preliminary study. *Archives of Gynecology and Obstetrics*. 2014; 289: 1129–1134.
- [12] Taylor-Robinson D, Jensen JS, Svenstrup H, Stacey CM. Difficulties experienced in defining the microbial cause of pelvic inflammatory disease. *International Journal of STD & AIDS*. 2012; 23: 18–24.
- [13] Cassell GH, Younger JB, Brown MB, Blackwell RE, Davis JK, Marriott P, *et al.* Microbiologic study of infertile women at the time of diagnostic laparoscopy. Association of *Ureaplasma urealyticum* with a defined subpopulation. *New England Journal of Medicine*. 1983; 308: 502–505.
- [14] Cassell GH, Waites KB, Watson HL, Crouse DT, Harasawa R. *Ureaplasma urealyticum* intrauterine infection: role in prematurity and disease in newborns. *Clinical Microbiology Reviews*. 1993; 6: 69–87.
- [15] Romero R, Oyarzun E, Mazor M, Sirtori M, Hobbins JC, Bracken M. Meta-analysis of the relationship between asymptomatic bacteriuria and preterm delivery/low birth weight. *Obstetrics and Gynecology*. 1989; 73: 576–582.
- [16] Kazemier BM, Koningstein FN, Schneeberger C, Ott A, Bossuyt PM, de Miranda E, *et al.* Maternal and neonatal consequences of treated and untreated asymptomatic bacteriuria in pregnancy: a prospective cohort study with an embedded randomized controlled trial. *Lancet Infectious Diseases*. 2015; 15:1324–1333.