

Diagnosis and treatment of cervical ectopic decidua during pregnancy

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Summary

Cervical ectopic decidua, a kind of disease which is easily ignored and misdiagnosed by OB-GYN. Its characteristics have not been fully understood and there is no consensus on how to cure it. *Objective:* The purpose of this study is to analyze the clinical characteristics and treatment experiences of cervical ectopic decidua during pregnancy. *Materials and Methods:* The detailed clinical manifestation, diagnosis, curative results in 11 cases of such disease were analyzed in Sichuan Provincial Hospital for Women and Children. *Results:* Cervical ectopic decidua is the primary reason of vaginal bleeding during pregnancy. This disease can be precisely diagnosed after gynecological examination, cervical cytology, colposcopy, and cervical neoplasm biopsy. *Conclusion:* For pregnant women with vaginal bleeding over a long period due to cervical and decidua polyps, cervical neoplasm elimination could be chosen after the diagnosis is confirmed. This is the first time that color Doppler ultrasound was utilized to diagnose cervical decidua polyp. The value of diagnosing and treating cervical decidua polyps requires more investigations.

Key words: Decidual ectopic; Colposcopy; Pregnancy; Cervical polyp; Cervical biopsy.

Introduction

Vaginal bleeding during pregnancy is a serious problem to OB-GYN for a long time. It can be caused by different factors and cervical ectopic decidua is just one of them. Due to its low incidence, vaginal bleeding was often ignored and misdiagnosed by OB-GYN. The cervical ectopic decidua found during pregnancy also has plagued OB-GYN and pregnant women. In this study, our team did a retrospective analysis of eleven cases of patients with cervical ectopic deciduas during 2010

Materials and Methods

After being approved by the review board, the authors collected and analyzed the pregnant women who were cured in this hospital from January 2010 to December 2010. The age of these women was from 23 to 37 with an average of 28.5 years. They had been pregnant for eight to 32 weeks with the main clinical manifestation being vaginal bleeding. After assessing potential obstetrical problems, the patients were referred to cervical specialist. After diagnosis and treatment, the present authors obtained consent from them for this publication.

After checking 11 patients, nine had main clinical manifestation on cervix neoplasm, surface congestion, pigmentation, and contact bleeding, and six had cervical bleeding and two had cervical surface ulcers, irregular surface, and easy bleeding after touching.

Eleven patients were screened for cervical cancer by three steps to eliminate the possibility of cervical malignant tumor. Of the 11 cases, two cases were inspected by cervical liquid based cytology

inspectors for two years, and all 11 cases showed no signs of malignant tumor. Undergoing colposcopy, ectopic decidua colposcopic examination was classified as infiltrative form, ulcerative form, polypoidal form, papillary form and decidual polyps of the endocervical canal. The infiltrative form appears as a smooth or coarse protrusion or swelling covered by squamous epithelium within which a cavity, dimple or depressed, may be observed. In some cases, capillaries can be observed on the surface. Following the application of acetic acid, the smooth transparent appearance of the surface diminishes and dense acetowhite appears in areas that are not covered with epithelium. The areas stain with iodine whereas some small areas do not. Ulcerative form have sharp borders and an irregular friable surface and it resembles areas that have been denuded of the superficial squamous epithelium. Following the addition of acetic acid, the ulcerated areas show a dense acetowhite appearance and these areas cannot be stained with iodine. Polypoidal form is seen macroscopically as polyp-shaped lesions arising from the ectocervix and it has a yellow-brown colour. Blood vessels are recognizable on the surface of the polypoidal form and areas are densely acetowhite. The papillary form appears only in columnar epithelium with the grape-like pale and white columnar epithelial villi becoming larger. These changes are most pronounced following the application of acetic acid. Decidual polyps of the cervical canal are single or multiple and tend to be grain-shaped, bean-shaped or sometimes hedgehog-shaped. This multicoloration is due to changes in the blood vessel and represents small haematomas or necrosis. Polyps are densely acetowhite but interestingly the blood vessels do not disappear. The polyps cannot be stained with iodine (Figure1).

The present authors performed a detailed cervical and histo-

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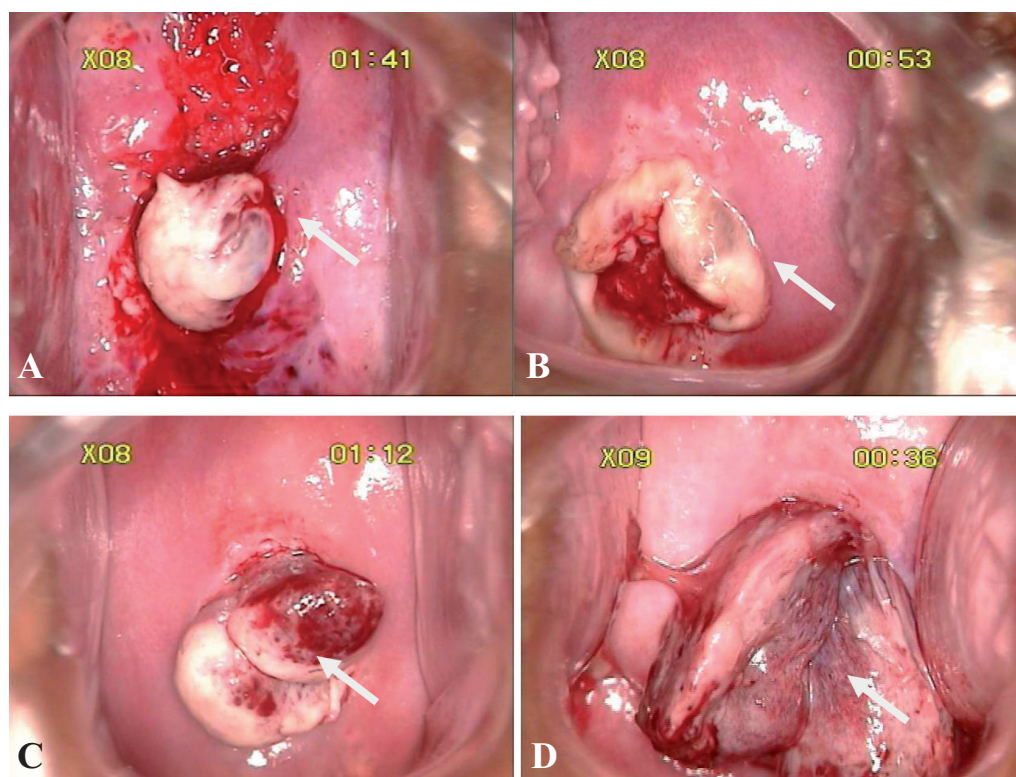


Figure 1. — (a) Polypoid decidual ectopy. (b) Polypoid form of deciduo-sis in a pregnant woman showing the edematous nature of the polyp-shaped lesions arising from the ectocervix. An endocervical polyp is seen at (c) with apparent squamous metaplasia at its tip (arrow). (d) The edematous epithelium in this photograph is of both squamous and columnar tissues..

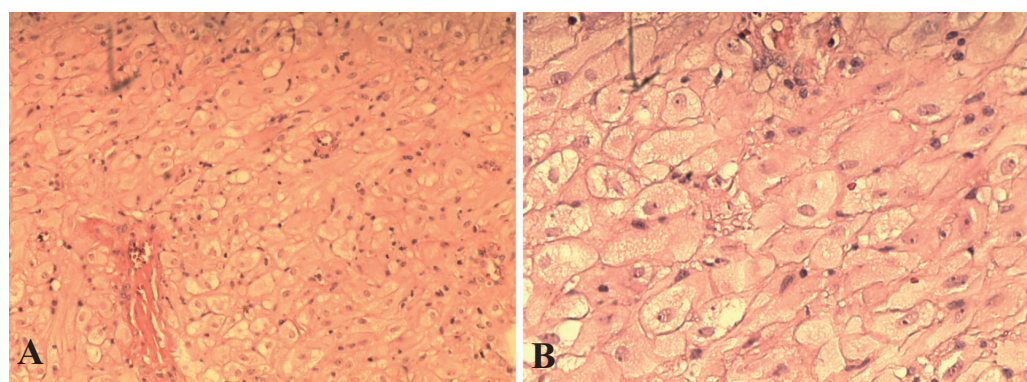


Figure 2. — (a) View under low power of characteristic histological changes showing widely expanded cells that underlie a superficial single layer of cuboidal cells present on the upper surface of the elevated protrusions. (b) A higher magnification of the view seen in (a).

logical assessment after being authorized by nine patients, and the diagnosis was decidua (Figure 2).

After authorized by 11 patients, six of them required (colposcopy, with mainly polypoid form and decidua polyps of the endocervical canal, polypoid form in two cases, decidua polyps of the endocervical canal in four cases) decidua tissues of cervical ectopic resection; four patients underwent transvaginal ultrasound which clearly observed that the outer cervical organizations were connected with intrauterine organization. The low-frequency blood flow signals from uterus were also visible (Figure 3).

Two patients were prompted as cervical ectopic decidua when undergoing eight plus weeks examination, but the cervical neoplasm disappeared after 12 weeks; other nine patients underwent cervical neoplasm pathological examination after three months gestation, and the diagnosis was decidua disease.

Six patients could not bear the repeated vaginal bleeding so they required cervical neoplasm resection after communicating with them. The present patients performed the following: after routine disinfection, they used hemostatic forceps to clamp polyp root; for decidua polyps of the endocervical canal, they entered hemostatic forceps into the cervix about 1 cm because the position of the root was too deep, then they used the clamp to stop its blood flow for ten seconds and rotated it in a clockwise or counterclockwise manner to gently remove the fallen polyps. After this, they informed the patients of the subsequent steps in detail. All samples were sent for pathological examination to ensure they were decidua tissue. Surgery for the six patients went well and all polyp roots were confirmed as decidua tissue. During the pregnancy, all patients had no vaginal bleeding and cervical neoplasm was not found during prenatal vaginal examination (Table 1).

Table 1. — *The data of pregnant women with cervical ectopic deciduas in this research.***Patients with clinical data**

Serial number	Age	Maternal 1 time	First clinic gestational age	Symptoms	Gynaecology examination	Cervical cytology	Vaginal endoscopy	Biopsy	Ultrasound	Further treatment
1	32	G2P1	8+3	Vaginal bleeding	Vegetation, size of about 0.8 cm, visible surface bleeding, without cervix blood flow	NILM	Decidual polyps of the endo-cervical canal	Not yet	Not yet	Disappeared when pregnant for three months
2	25	G1P0	21	Vaginal hemorrhagic secretions	Cervical moderate erosion, covering a large amount of secretion, the opening of the cervix is about 1 cm size, vegetations, hemorrhage, necrosis, surface	NILM	Hybrid: infiltrative form and polypoidal form	Done	Done	24 weeks: cervical neoplasm enucleation
3	27	G2P0	19+2	Vaginal bleeding	Cervical mild erosion, surface covering hemorrhagic secretions, sticky, contact hemorrhages, vegetation, size of 1 cm deep cervical canal, surface hemorrhage, necrosis	NILM	Hybrid: ulcerative form and the decidual polyps of the endocervical canal	Done	Not yet	Asking for continued observation, vaginal bleeding during pregnancy to 35 weeks, no cervical neoplasm when pre-natal examination
4	37	G3P1	10	Repeated vaginal discharge with a small amount of bleeding	Cervical surface is smooth, 2 cm grey vegetation in the cervical os, thick mucus adhesion visible on the surface, obvious contact hemorrhages, no obvious necrosis, no hemorrhage	NILM	Decidual polyps of the endocervical canal	Done	Done	12 weeks: cervical neoplasm enucleation
5	28	G1P0	15+6	Vaginal bleeding during pregnancy	Moderate erosion, adhered on the surface of the cervical sticky secretions in great quantities, vegetation, with a size of 2 cm, in the cervix, contact hemorrhage	NILM	Hybrid: infiltrative form and polypoidal form	Done	Not yet	Intermittent vaginal bleeding during pregnancy until prenatal, a vegetation in the cervix
6	22	G1P0	16	Vaginal discharge in early pregnancy, gradually increased then a small amount of vaginal bleeding	Severe erosion, adhered on the surface of the cervix, sticky secretions in great quantities, a brown vegetation, a size of 2 cm, in the cervix os, surface necrosis, hemorrhage, contact hemorrhage	NILM	Hybrid: papillary form and decidual polyps of the endocervical canal	Done	Done	At 19 weeks, cervical neoplasm enucleation
7	37	G1P0	7	Vaginal discharge during pregnancy, vaginal bleeding	Surface of the cervical is smooth, a vegetation, a size of 1.5 cm, in the cervix os, sticky secretions on the surface, no obvious hemorrhage, necrosis foci, visible neoplasm root active bleeding	NILM	Polypoidal form	Done	Done	At 12 weeks: cervical neoplasm enucleation
8	29	G3P0	23+1	A small amount of vaginal bleeding during pregnancy repeatedly	Cervical moderate erosion, viscous fluid adhered on the surface, a vegetation, a size of about 2 cm in the cervix os, shows obvious hemorrhage, necrosis foci, root deep into the cervix	NILM	Hybrid: infiltrative form and decidual polyps of the endocervical canal	Done	Done	27 weeks of pregnancy, cervical neoplasm enucleation
9	27	G1P0	32	A small amount of vaginal bleeding during pregnancy repeatedly	Cervical moderate erosion, surface discharge is attached, contact hemorrhages, wine-colored vegetation, size of 1.5 cm, in the cervix os, obvious contact hemorrhages, no obvious necrosis foci	NILM	Hybrid, ulcerative form and polypoidal form	Done	Done	Patient continued to observe intermittent vaginal bleeding during pregnancy, neoplasm was observed in the cervical os
10	26	G2P0	8	A small amount of vaginal bleeding during pregnancy	Cervical surface is smooth, a vegetation, size of 1 cm, in the cervix os, no obviously contact hemorrhages, can explore the root in the cervical canal 0.5 cm	NILM	Decidual polyps of the endocervical canal	Not yet	Not yet	3 month follow-up, no bleeding, no cervical neoplasm
11	23	G1P0	28+3	A small amount of vaginal bleeding during pregnancy repeatedly	Cervical moderate erosion, surface covering sticky secretions, a size of 2 cm grey vegetation in the cervix os, with hemorrhage, necrosis, and deep cervical tube on the surface	NILM	Hybrid: papillary form and the polypoidal forms	Done	Done	31 weeks of pregnancy: cervical neoplasm enucleation

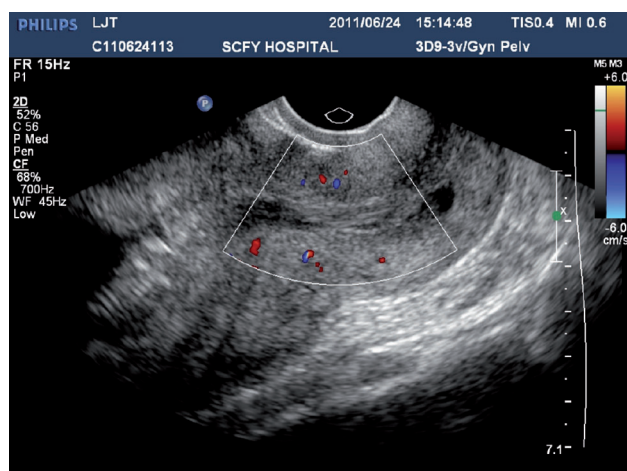


Figure 3. — The film ribbon-shaped high echo from the lower part of the uterine cavity, of about 4.7×0.6 cm in size

Results

There were five patients with follow-up observations and six cases of cervical neoplasm resection. All of them were followed up until the baby was delivered. In total, the follow-up observations were conducted in five cases, among which two cases were patients in the early stages of pregnancy; ectopic decidual tissue disappeared by itself in 12 weeks' vaginal examination. One patient had occasional bleeding until 35 weeks and no cervical neoplasm was found in prenatal vaginal examination. Two patients had continuous bleeding during pregnancy and the cervical neoplasm was found in prenatal vaginal examination.

After confirmed as a cervical neoplasm, six patients underwent routine blood tests, blood coagulation function, leucorrhea routine test, and transvaginal color Doppler ultrasound before cervical neoplasm resection. After surgery, vaginal bleeding did not appear and the cervix neoplasm had not been observed in prenatal vaginal examination in all cases. All removed specimens were sent for pathologic examination and were confirmed as ectopic decidual tissue.

Discussion

Currently, there are two possible explanations for the presence of decidual cervical tissue during pregnancy [2-6]. The first is decidual transformation of foci of endometriosis within the cervix in pregnancy may be influenced by the same progesterone stimulation as endometrial tissue. The second is the decidualisation of connective tissue cells, especially fibrocytes in pregnancy. Mayer [7] suggested that the inflammatory process that may change the connective tissue cells of the stroma could be important in the decidualisation process. These cells may act as receptors for hormones produced by the corpus luteum and placenta. In addition to progesterone and human chorionic go-

nadotrophin, human placental lactogen, prolactin, prostaglandins, and other proteins may also be involved in inducing the ectopic decidualisation changes.

It has been reported that ectopic decidualisation is mainly found in conventional colposcopic examination of pregnant women [8]. In the present study, obstetric factors which may cause abnormal vaginal bleeding of pregnant women were ruled out. The present authors found that the main clinical manifestations related to its characteristics and classifications. Coupled with the high estrogen stimulation during pregnancy, the cervical columnar epithelium shifts outward so the decidual changes of the cervix that may be easily infected by vaginal bacteria and this may result in excessive vaginal discharge in pregnant woman. It should be remembered that areas of decidual change during early pregnancy can bleed spontaneously and may mimic a miscarriage. In the present cases, the polypoidal form and decidual polyps of the endocervical canal always appeared with other types, therefore many pregnant women attend due to increasing secretion with a small amount of vaginal bleeding during pregnancy.

Gynecology examination is very important because obvious cervical hyperemia during pregnancy can be easily misdiagnosed as cervical cancer. It is also necessary for other assistant examination based on the above results.

Characteristics of cytological changes include the following: the superficial squames of the cells and are edematous and abnormal in appearance (Figure 2). They also contain a considerable amount of fluid. In about one-third of cases with decidual ectopy, cytology is negative. Furthermore, in some cases, it is difficult for the Pap test to differentiate between decidual cells and cells suggestive of carcinoma, especially sarcoma. Liquid based cytology of all cases that reported, did not prompt characteristic changes.

Ectopic decidua colposcopic examination classified as infiltrative, ulcerative, polypoidal and papillary forms and decidual polyps of the endocervical canal. In the present cases, the several types are oftened mixed types.

Diagnosis relies mainly on histopathology. Histological change can be observed under optical microscope. These changes include the appearance of ectopic decidual cells under the single flat between the skin cells, the focal distribution of decidual cells are in a polygonal mosaic pattern, have abundant cytoplasm, nucleus in the central part of the cells, nucleus is round or ovoid, chromatin is exquisite, the nuclear membrane is clear, there are visible nucleoli, and not different from endometrial decidual cells, and cell layers may be several to dozens.

Based on the report of Krakow Hospital, ectopic decidual changes in the cervix are found mostly before the 16th week of gestation. However, the changes can first appear up to 25 weeks. After 25 weeks, the decidual lesions regress. Regression particularly occurs in the decidual polyps of the endocervical canal due to compression of the blood vessels

in the pedicle of the endocervical polyps, resulting in necrosis and shedding of the polyp. Most of decidual ectopic (60-70%) have regressed by the 38th week of pregnancy while some regress shortly after delivery [10]. This is why the decidual changes in the cervix do not require to be treated surgically. In the present study, four patients of decidual ectopic pregnant occurred before 12 weeks, including two cases that regressed after three months of pregnancy. Five patients of decidual ectopic pregnancy occurred after 25 weeks, with one decidual polyps regression before prenatal vaginal examination. This is not in conformity with the reports.

Based on the present research, all the patients were pregnant with abnormal vaginal bleeding. Among these patients, some suffered from vaginal bleeding for a lengthy amount of time and some have even encountered mental symptoms. After full communication with the patients, the authors assessed the following: leucorrhea convention, blood routine test, blood coagulation function, transvaginal color ultrasonic inspection, and cervical neoplasm resection. During the treatment, no important bleeding occurred, but only a small amount of bleeding after treatment. Vaginal bleeding stopped after treatment in three cases, and the remaining three patients had a small amount of blood as vaginal discharge. Three days later, it disappeared. So based on the full examination and authorization by patients, they were surgically treated for the cervical decidual polyps and the decidual polyps of the endocervical canal.

The present authors can conduct more research in the future because of the limitation of amounts of patients today. In this research, for the first time, the authors added color Doppler examination in the observation of decidual polyps of the endocervical canal and it provided great support. Based on the observation, they found decidual polyps of the endocervical canal from the cavity directly with low-frequency blood signals. There was no important bleeding after surgery, so the authors inferred that was perhaps associated with the speed of bleeding. Of course, it requires more research to support this point. The value of color Doppler ultrasound in the diagnosis and treatment of de-

cidual polyps of the endocervical canal requires more research. The present authors are looking forward to conducting further research regarding this.

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References

- [1] Vantman A., Guzman A.: "Ectopic decidua of the uterine cervix". *Rev. Chil. Obstet. Ginecol.*, 1965, 30, 67.
- [2] Sammour R.N., Leibovitz Z., Shapiro I., Degani S., Levitan Z., Aharoni A., et al.: "Decidualization of ovarian endometriosis during pregnancy mimicking malignancy. *J. Ultrasound Med.*, 2005, 24, 1289.
- [3] Shukla S., Pujani M., Singh S.K.: "Ectopic decidual reaction mimicking peritoneal tubercles: a report of three cases". *Indian J. Pathol. Microbiol.*, 2008, 51, 519.
- [4] Lesaffer J., Feryn T., Proot L.: "Pregnancy-associated ectopic decidua of the appendix". *Acta Chir. Belg.*, 2009, 109, 93.
- [5] Bolat F., Canpolat T., Tarim E.: "Pregnancy-related peritoneal ectopic decidua (deciduosis): morphological and clinical evaluation". *Turk. Patoloji. Derg.*, 2012, 28, 56.
- [6] Fenjvesi A., Zivkovic S.: "Deciduosis peritonei—a case report". *Med. Pregl.*, 2005, 58, 196.
- [7] Mayer R.: "Die Entzündung als Entstehungsursache ektopischer Dezidua oder Paradezidua". *Zeitschrift für Geburtshilfe und Gynäkologie*, 1913, 74, 250.
- [8] Bailleux M., Cotereau Denoiseux C., Bernard J.P., Faivre E., Benachi A., Deffieux X.: "Decidualization of ovarian endometriosis during pregnancy mimicking malignancy: a difficult diagnosis". *J. Gynecol. Obstet. Biol. Reprod. (Paris)*, 2013, 42, 604.
- [9] Schneider V., Barnes L.A.: "Ectopic decidual reaction of the uterine cervix: frequency and cytologic presentation". *Acta Cytol.*, 1981, 25, 616.
- [10] Gornall A.S., Naftalin N. J., Brown L.J., Konje J.C.: "Massive necrosis of cervical ectopic decidua presenting in labour". *BJOG*, 2000, 107, 573.

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