

## Cervical Ectopic Pregnancy in Resource Deprived Areas: A Rare and Difficult Diagnosis

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### SUMMARY

Ectopic pregnancy is a common cause of morbidity and mortality in women of reproductive age especially in resource deprived areas worldwide. Cervical ectopic pregnancy is a rare, life threatening form of ectopic pregnancy which needs a high index of suspicion for diagnosis, thus adding a complex twist to the dilemma faced by the obstetrician in resource deprived areas. A case of a cervical ectopic pregnancy which presented in a resource deprived area in a region in Ghana is discussed, and the difficulties encountered in diagnosis and management of this life threatening condition are outlined.

**Keywords:** Ectopic pregnancy, cervical, resource deprived areas, difficult diagnosis, management

### INTRODUCTION

Ectopic pregnancy is a common cause of morbidity and sometimes mortality in women of reproductive age. The incidence of ectopic pregnancy ranges from 1 in 30 deliveries in Ghana, which falls within the range of 1 in 44 and 1 in 21 deliveries seen in developing countries, as compared to 1 in 280 to 1 in 233 for developed countries.<sup>1</sup> Management of ectopic pregnancy depends on site of presentation, and whether ruptured or unruptured. Cervical ectopic pregnancy is a rare, life threatening form of ectopic pregnancy with an incidence of 1 in 9,000 deliveries.<sup>2</sup> It adds a complex twist to the dilemma faced by the obstetrician in resource deprived areas in the diagnosis of an ectopic pregnancy.

We present a case of cervical ectopic pregnancy presenting in a 35 year old multiparous patient at a district hospital in Ghana.

### CASE REPORT

A 35 year old grand multipara (Para 8) presented with bleeding *per vaginam* for 3 days and symptoms of anaemia. The last menstrual period was about 2 months prior to presentation. There was no associated abdominal pain.

The past medical/surgical history was unremarkable, though patient had complained of heavy periods for three months prior to presentation. Previous deliveries had been *per vaginam*.

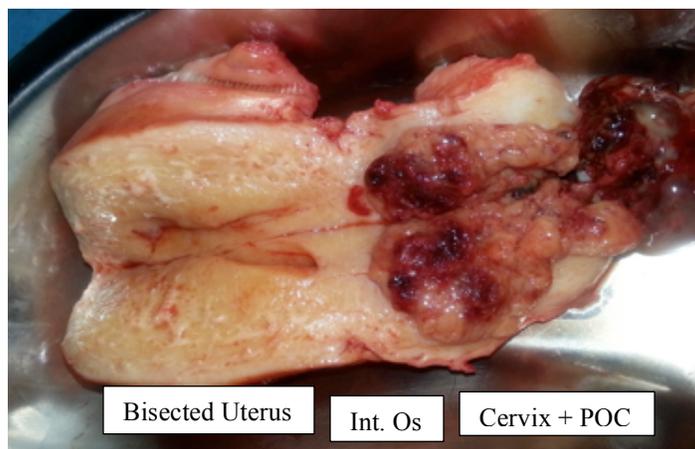
On examination, vital signs were stable, though she was markedly pale. Abdominal exam was unremarkable. Pelvic exam with a speculum revealed friable nodular masses on the anterior lip of the cervix which bled easily on touch. Abdominopelvic scan showed no intrauterine/ extra uterine pregnancies. Blood tests revealed a haemoglobin of 5.9g/dl. Urine B-HCG was positive. On further discussion and review, a tentative diagnosis of cervical tumour was made.

The patient was transfused and the bleeding subsided subsequently. Patient was discharged to be readmitted in the next 4 days for a biopsy. Patient however defaulted, and was readmitted 6 weeks later with heavy bleeding *per vaginam* and severe anaemia. Patient was resuscitated with multiple blood transfusions, and reassessed again. Repeat transabdominal scan showed a bulky uterus with absent intrauterine gestational sac and normal adnexa. A vaginal examination revealed an enlarged mass on the anterior lip of the cervix with a spurting vessel.

## Case Report

A diagnosis of cervical ectopic gestation was made. An emergency total abdominal hysterectomy was done. Findings were a 16 week sized empty uterus, and what appears to be a cervical ectopic gestation containing products of conception which were intimately attached to the cervix and could not be peeled off (Figure 1).

Post-operatively, patient recovered fully and was discharged on the 8<sup>th</sup> post-operative day. She was however lost to follow up again and thus no histopathology report was obtained.



**Figure 1** Cervical ectopic pregnancy

### DISCUSSION

Cervical pregnancy is a rare form of ectopic pregnancy in which the blastocyst implants in the lining of the endocervical canal. It accounts for less than 1% of ectopic pregnancies with an incidence of 1:9,000 deliveries.<sup>2</sup> In our facility, there has been no prior record of a cervical ectopic gestation. Risk factors include previous dilatation and curettage, previous caesarean section delivery, rapid transit of fertilized ovum due to unreceptive endometrium, pre pregnancy smoking, pelvic inflammatory disease and in vitro fertilization.<sup>2,3</sup> Asherman's syndrome, prior instrumentation or therapeutic abortion use, infertility, and prior ectopic pregnancies have also been implicated.<sup>3</sup> Majority of women with cervical pregnancy have a low parity.<sup>3</sup> In this case, the patient was para 8 and all were delivered per vaginam. There was no previous history of dilatation and curettage, nor use of any contraceptive method.

Cervical ectopic pregnancy has been classified according to site of origin: isthmico-cervical, pure cervica, cervico-isthmic and cervico-isthmic-corporal pregnancy.<sup>4</sup> Clinical presentation is usually painless profuse first trimester vaginal bleeding.

Lower abdominal cramping is conspicuously absent and is found in less than one third of patients<sup>3</sup>. Pain without bleeding is rare.<sup>2</sup> Cervical pregnancy rarely progresses beyond the twentieth week, however, exceptions do occur when it has progressed to a live birth.<sup>5,6</sup>

Physical examination usually reveals a soft cervix that is disproportionately enlarged in comparison to the uterus, a partially open external os, and haemorrhage on manipulation of the cervix.<sup>7</sup> These signs are not diagnostic, and if suspicion of cervical pregnancy arises radiological evaluation is mandatory.<sup>7</sup>

Cervical ectopic pregnancy was first described in 1817, and was named as such in 1860.<sup>2</sup> In 1911 Rubin came up with a histopathological criteria for diagnosis of cervical pregnancy.<sup>8</sup>

1. Cervical glands must be opposite the placental attachment.
2. Placental attachment to the cervix must be situated below the entrance of the uterine vessels or below the peritoneal reflection of the anterior and posterior surfaces of the uterus.
3. Fetal elements must be absent from the corpus uteri.
4. The attachment of the placenta to the cervix must be intimate.

Rubin's criteria required pathologic examination of the excised uterus. However, if the uterus is preserved, these criteria cannot be applied. Thus, Duckman suggested the following diagnostic criteria<sup>9</sup>:

1. A dilated, thin-walled cervix containing histologic evidence of gestation.
2. A patulous external os.
3. Small and firm corpus uteri with normal size internal os resting on top of dilated cervix.

The most widely accepted clinical criteria are those defined by Paalman and McElin.<sup>10</sup> These are:

1. Amenorrhea followed by uterine bleeding without cramping pain.
2. A softened and disproportionately enlarged cervix equal to or larger than the corporal portion of the uterus (an hour glass-shaped uterus).
3. Products of conception entirely confined within, and firmly attached to the endocervix.
4. A snug internal os.
5. Partially open external os.

As mentioned above, ultrasonographic investigations are mandatory for confirmation of suspected cervical ectopic pregnancy.

## Case Report

Ultrasonographic criteria with transvaginal ultrasound are stated below as follows<sup>7</sup>:

1. Diffuse amorphous intrauterine echoes.
2. Empty uterus (absence of an intrauterine pregnancy)
3. Uterine enlargement.
4. Characteristic enlargement of the cervix containing products of conception.

The main differential diagnosis of a cervical pregnancy is a cervical abortion.<sup>10</sup> Use of colour Doppler sonography to detect peritrophoblastic blood flow to distinguish cervical ectopic pregnancy from an aborting intrauterine pregnancy is important. Vaginal sonography can also help differentiate the two due to the sliding motion of the latter against the endocervical canal as compared to the former which is implanted into the cervix.<sup>7</sup> Distinguishing features between the two conditions have been suggested by Duckman in 1957.<sup>11</sup>

Management can be conservative or surgical. The major goals are to minimize hemorrhage and preserve future fertility when necessary.<sup>12</sup> However, this depends on the state of the patient on presentation to the facility.

Conservative management includes the use of intramuscular methotrexate. This is effective in 80 – 90% of cases of early cervical pregnancy.<sup>10</sup> Criteria for the use of methotrexate include a hemodynamically stable patient as well as ectopic size of 3cm or less.<sup>10,13</sup>

Surgical management involves dilatation and evacuation, hysteroscopy and hysterectomy as a last resort. The main complication of dilatation and evacuation is a high incidence of severe hemorrhage which can be reduced by preoperative measures like transvaginal ligation of cervical branches of the uterine arteries, cervical encircage, angiographic uterine artery embolization.<sup>10</sup>

Hysteroscopic resection is a potentially safe and effective option as it allows direct visualization for resection of the ectopic gestation, and simultaneous ablation of bleeding vessels.<sup>13</sup>

The two surgical options above are used when fertility sparing is being considered and in cases where there is no life threatening hemorrhage. In cases of massive hemorrhage in a hemodynamically unstable patient, emergency hysterectomy is the best option.

### **Difficulties in diagnosis and management of cervical ectopic pregnancy in the West African setting**

Patients with cervical ectopic pregnancy are at high risk of severe, potentially life-threatening hemorrhage if diagnosis is delayed.

Conservative management is effective and safe, but its success depends on the diagnostic accuracy of the initial ultrasound.<sup>2</sup>

In our case, there was some initial confusion about the diagnosis, as the assessment was carried out by junior doctors. The rarity of the condition does not help matters, thus it is seldom suspected or diagnosed before surgery as one needs a very high level of suspicion.<sup>11</sup> The initial ultrasound was also inaccurate. It was done trans-abdominally by a radiographer, and generally, ultrasound results tend to be operator – specific, more so when not done by a radiologist. Also, as the diagnosis of a cervical ectopic pregnancy was not thought of, efforts were not made to pick up more details to allow inclusion or otherwise from the above mentioned diagnostic criteria. On hind sight, we believe the clinical and radiological criteria would have been met.

These are the conditions that are prevalent in district hospitals in developing countries where the clinics are manned by non-specialists, in addition to the paucity of diagnostic equipment. Even when the diagnostic equipment are available, there is also a lack of skilled personnel with the necessary experience to operate them. Thus when such rare conditions present, it is difficult to make a diagnosis, leading to emergency radical operations as occurred in our case.

Management of cervical ectopic gestation is also a problem in resource deprived areas. Health provision is still essentially a cash and carry system, as the national health insurance scheme does not cover all the costs of treatment and patients can hardly afford to buy medication. These patients commonly present with hemorrhage, and the acquisition of blood and blood products is a problem for patients due to the shortage in blood banks. The patients also have to pay for processing of the blood product before it is issued out to them.

In Ghana, the national demand for blood is more than 250,000 annually, but the national collection rate is far less than 50%.<sup>14</sup> Conservative management is usually out of the question due to the emergency presentation as happened in this case. Methotrexate is quite expensive as well, and patients may not be able to afford it since it is not under the National Health Insurance Scheme list of drugs.

Dilatation and evacuation is also a tricky option for resource deprived areas. There is a lack of equipment for embolisation of the cervical/ uterine arteries preoperatively, and hysteroscopic equipment in the rural areas.

## Case Report

Although there are various methods for arresting hemorrhage such as cervical cerclage and tamponade of the cervix before the consideration of ligation of arteries/hysterectomy, one also considers the amount of blood loss involved as well as the availability of blood products for transfusion.<sup>15</sup>

All this unfortunately minimizes the possibility of fertility sparing in women of low parity who present with cervical ectopic pregnancies.

In our case, this patient received a total of 7 units of blood, and had an emergency total abdominal hysterectomy due to the ongoing torrential blood loss. Fertility sparing was not an issue in this case due to the fact that the patient was multiparous, and consented to the procedure.

Finally, histopathological confirmation of the diagnosis is very difficult, as there are usually no pathologists in district hospitals. Patients usually have to carry the samples themselves and travel to the capital city, Accra, for the services of a pathologist, of which patients cannot afford. Also, when it comes to obtaining results, patients usually have to wait for well over a month, and some patients lose interest and never return for them. In our case, we lost the patient to follow up, so we cannot even be sure the sample was sent for histopathology. Therefore, apart from our clinical findings, we only have a photograph to show as evidence.

## CONCLUSION

Cervical ectopic pregnancy is a rare condition whose diagnosis requires a high level of suspicion, and a high level of experience, both from the obstetrician and the radiologist. Early diagnosis is essential for successful conservative management thus maintaining fertility, avoiding blood transfusion and radical surgical interventions.

Diagnosis and conservative management of this condition in a resource deprived area is difficult due to lack of experienced personnel and supportive equipment in rural areas. This leads ultimately to radical interventions which have a higher rate of morbidity.

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