Heterotopic pregnancy and subsequent pregnancy outcome: A case report

Steve Kyende Mutiso, Abraham Mwaniki Mukaindo

ABSTRACT

Introduction: Heterotopic pregnancy resulting from spontaneous conception is a rare occurrence. Most will present with symptoms and signs similar to an ectopic pregnancy and surgical management with salpingectomy is often required. We present a case of heterotopic pregnancy that we managed in our facility and its subsequent live pregnancy outcome.

Case Report: An African lady in her first pregnancy presented with abdominal pain with subsequent investigations revealing a heterotopic pregnancy composed of an intrauterine and tubal pregnancy. She underwent laparoscopic salpingectomy recovering well and carried the intrauterine pregnancy to term with a live birth being the outcome.

Conclusion: The case presented is a case of heterotopic pregnancy resulting from spontaneous conception. Surgical management is the preferred method of management and this was required for the reported patient. The outcome of the intrauterine pregnancy is usually good after surgical removal of an ectopic pregnancy and the patient in this report had a relatively uncomplicated pregnancy with a good perinatal outcome. This case adds to the small body of evidence on heterotopic pregnancies, their management and subsequent outcome.
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Keywords: Heterotopic, Outcome, Pregnancy

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INTRODUCTION

A heterotopic pregnancy is a pregnancy that has two simultaneous pregnancy at different implantation sites [1]. Heterotopic pregnancy is a rare occurrence occurring in about 1 in 30,000 pregnancies although the incidence is higher in pregnancies resulting from assisted reproductive techniques [2, 3]. Almost all of heterotopic pregnancies will require surgical management of the ectopic pregnancy to offer better outcomes to the intrauterine pregnancy [1, 4]. About two-thirds of the intrauterine pregnancies proceed to term with no associated major complications although some may need exogenous progesterone support [3]. We present a case of heterotopic pregnancy consisting of an intrauterine and right tubal pregnancy and the patient’s subsequent follow-up and outcome of the pregnancy at term.
CASE REPORT

The patient was a 24-year-old African female in her first pregnancy. She was at seven weeks gestation by dates and had not started antenatal follow-up. She presented with a complaint of lower abdominal pain that had been present for the last three days. The pain was central in location, intermittent in nature and she described it as mild to moderate in severity. She had no per vaginal bleeding although reported a vaginal discharge that was white. She had no associated symptoms of nausea or vomiting and did not report any dizziness, palpitations or easy fatigability. She was a banker by profession and had been able to continue with her daily duties despite her pain. She had not been on any contraception and the pregnancy was a planned pregnancy.

Past medical history of the patient revealed that she had been treated for smear positive pulmonary tuberculosis three years back and had completed her treatment schedule of drugs. She also had a history of bronchial asthma and was on inhaler medication (salbutamol) when symptoms arose. This had been diagnosed in her childhood. Finally, she reported that she had spells of dyspepsia that was managed also with symptomatic medications. She had no prior occurrence of pelvic inflammatory disease or tubal surgery. She had no other prior surgeries and she did not smoke or take alcohol. She was married and had no family history of chronic medical conditions.

On examination, she was in good general condition, and had no systemic signs of dehydration or pallor. Her vitals were all normal with a pulse of 96 beats per minute and blood pressure of 138/78 mmHg. Her respiration rate was 16 breaths per minute and she was saturating at 98% on room air. She was afebrile with a temperature of 36.4°C. Abdominal examination revealed mild suprapubic tenderness with no abdominal masses.

Diagnostic assessment of the patient first involved a full hemogram. This was normal with a hemoglobin level of 12.4 g/dL, a white cell count of 6.53x10^9/L and a platelet count of 269x10^9 cells per liter. She had a beta-hCG (human chorionic gonadotropin) level done which was 48,219 mIU/ml. A transvaginal sonogram was requested which revealed a viable intrauterine pregnancy at six weeks and one day by crown rump length (CRL), a right adnexal ectopic pregnancy whose CRL dated it at six weeks and five days (Figure 1) with a recordable heartbeat (Figure 2), a right ovarian corpus luteal cyst that was 1.5 centimeters in diameter and free fluid in the Pouch of Douglas (POD) (Figure 3). The scans conclusion was a heterotopic pregnancy with a viable intrauterine and right adnexal ectopic that was possibly ruptured due to free fluid in the POD.

The diagnosis at this point was a heterotopic pregnancy and this was explained to the patient. Her subsequent plan was to involve her being admitted for emergency laparoscopy and possible right salpingectomy for the ectopic. She agreed to this and we proceeded to admit her. We further ordered a cross match of one unit of packed red blood cells to be kept in reserve for theatre in case it would be needed. The operation was booked to be done within an hour of her presenting to our hospital.

The laparoscopy was done under general anesthesia. Cohen’s cannula was not inserted for uterine manipulation and instead we resorted to using a gauze rolled on an ovum forceps for uterine manipulation if required. She was positioned in the Lloyd–Davis position and primary trocar (10 mm) entry was done after veres insufflation. Entry pressures used were 18 mmHg while we operated at pressures of 15 mmHg. Two secondary ports (6 mm each) were inserted bilaterally at the iliac regions under direct vision. Intraoperatively we found an enlarged uterus which was hyperemic possible due to pregnancy with a ruptured right tubal (ampullary) pregnancy, there was also a hemoperitoneum of about 200 milliliters (Figure 4). Both ovaries and the left tube appeared normal. We subsequently did a right salpingectomy using endoloop then bipolar coagulation (Figure 5) and scissors to cut the tube off and suction of the hemoperitoneum with minimal peritoneal lavage (Figure 6). All instruments and ports were removed under vision and closure of the ports done.

Figure 1: Sonogram showing the intrauterine pregnancy and concurrent adnexal pregnancy.

Figure 2: The adnexal pregnancy is shown with a perceivable fetal cardiac activity.
The patient was discharged home on the subsequent morning after being debriefed of the surgery. She was discharged on paracetamol and oral codeine for analgesia and was also prescribed for vaginal progesterone (susten) for the subsequent four weeks. She was also put on daily folic acid (400 mg) that she was to take up to the end of the first trimester of pregnancy.

The patient was seen in the outpatient clinic in two weeks for review. She was recovering well and was pain free. She had no vaginal bleeding or lower abdominal pain. She was further debriefed on the surgery and advised on starting antenatal follow-up.

Her subsequent antenatal follow-up was as follows: She had normal antenatal profile tests. She had a scan at 13th week that revealed the intrauterine pregnancy was viable and had no gross abnormalities. She had no abnormal pregnancy symptoms or complications. A 20-week anomaly scan revealed a normally formed intrauterine pregnancy that had adequate growth for dates. She had a normal 32 week growth scan and relatively uncomplicated pregnancy course. She had a term normal delivery with no reported perinatal morbidity.

**DISCUSSION**

The above case documents occurrence of a heterotopic pregnancy and its subsequent live pregnancy outcome. A heterotopic pregnancy occurs when an intrauterine and ectopic pregnancy occur simultaneously and this is a relatively rare occurrence [2].

The earlier reported incidence of heterotopic pregnancies was 1 in 30,000 pregnancies although with the advent of assisted reproductive technologies (ART), the incidence has been reported as 1 in 1500 in ART pregnancies [2, 3]. The case outlined was a spontaneous conception hence can fall in the former rather than the latter grouping. Although no strong risk factors have been identified for heterotopic pregnancies, there has been a documented increase in patients with certain factors. Women with history of tubal disease, pelvic inflammatory disease and those undergoing ART form the bulk of the predisposing factors to a heterotopic pregnancy [5, 6]. More so, in women who conceive with ART the factors that have been associated with an increased risk of
an heterotopic pregnancy include high numbers of stimulated oocytes or transferred embryos in a cycle, the volume and viscosity of the transfer medium and the technique of embryo transfer [7]. However, the patient outlined in the above case had none of these predisposing factors to a heterotopic or even ectopic pregnancy hence her occurrence may have been sporadic rather than risk factor based.

Heterotopic pregnancies have no specific clinical symptoms, although most of the women with a heterotopic or even ectopic pregnancy may present with abdominal pain [8]. Other symptoms will be a history of amenorrhea, symptoms of adnexal mass and even early pregnancy symptoms [9–11]. Heterotopic pregnancies may present at advanced gestation than an ectopic pregnancy, the reason being that once an intrauterine gestation is observed most may not consider an occurrence of an ectopic in the same pregnancy [12]. The current patient had abdominal pain that is commonly reported in ectopic pregnancies and hence the suspicion was towards an ectopic pregnancy rather than a normal intrauterine pregnancy.

The diagnosis of a heterotopic pregnancy is usually by ultrasound imaging. Any patient presenting with symptoms of an extraterine pregnancy may require an ultrasound examination to determine the pregnancy location [5]. Features observed on ultrasound include the presence of an intrauterine gestation, an adnexal mass with a discernable gestational sac or even a fetal cardiac activity. Free fluid in the abdomen may point to possible rupture [13]. The patient had all these features on her ultrasound scan and the ectopic pregnancy also had a discernable sac with fetus and fetal cardiac activity hence her diagnosis was easily arrived at. Other diagnostic tests that may add value in these patients may include a complete blood count to assess their blood level and a serum β-hCG level that may be beneficial where no pregnancy has been identified on ultrasound [3]. Rarely, a diagnostic laparoscopy may be indicated in patients who may not have a clear diagnosis and in this instance the laparoscopy may be used for both diagnosis and treatment [4].

The management of heterotopic pregnancy is usually dependent on the site of implantation of the extraterine pregnancy and should be the least invasive to offer favorable outcomes to the intrauterine pregnancy [14]. Systemic medical management is absolutely contraindicated in the presence of a viable intrauterine pregnancy [4]. Surgical management seems to be the recommended method of treatment of a heterotopic pregnancy, this is usually achieved by salpingectomy in patients with hemodynamic compromise and in whom rupture is suspected [8]. Where possible, a laparoscopic approach is preferred in view of better visualization and faster post-operative recovery [4, 5]. The current case was managed via the laparoscopic approach with salpingectomy being done as the patient was hemodynamically stable and had signs of rupture.

The other approach of management for a heterotopic pregnancy may be local injection under sonographic guidance of either hyperosmolar glucose or potassium chloride [6, 15]. These substance have a low toxicity to the co-existing intrauterine pregnancy and although the success rate [about 55%] may not be as high as surgical management, this may be a good option for patients who are hemodynamically stable and not keen on surgery [6]. In patients who are on management with local injections, it is important to note that more than half require subsequent surgical management with salpingectomy [6]. In patients in whom the ectopic is at a past cesarean scar in location treatment with embryo reduction using aspiration has been reported [16]. With regards to outcome of the pregnancy, about two thirds of patients with heterotopic pregnancies will carry the intrauterine pregnancy to term [3]. Moreover, although they have higher rates of spontaneous miscarriages compared to intra-uterine only pregnancies [33% versus 11%], there are no differences in perinatal outcomes between the two if the heterotopic pregnancy progresses to a live birth [3]. The present case resulted in a live birth with no associated pregnancy and birth complications.

CONCLUSION

The case presented is a case of heterotopic pregnancy resulting from spontaneous conception. Surgical management is the preferred method of management and this was required for the reported patient. The outcome of the intrauterine pregnancy is usually good after surgical removal of an ectopic pregnancy and the patient in this report had a relatively uncomplicated pregnancy to term [3]. Moreover, although they have higher rates of spontaneous miscarriages compared to intra-uterine only pregnancies [33% versus 11%], there are no differences in perinatal outcomes between the two if the heterotopic pregnancy progresses to a live birth [3].

Author Contributions

Steve Kyende Mutiso – Substantial contributions to conception and design, Acquisition of data, Analysis and interpretation of data, Drafting the article, Revising it critically for important intellectual content, Final approval of the version to be published
Abraham Mwaniki Mukaindo – Analysis and interpretation of data, Revising it critically for important intellectual content, Final approval of the version to be published

Guarantor

The corresponding author is the guarantor of submission.

Conflict of Interest

Authors declare no conflict of interest.
REFERENCES


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