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A Case Series of Live Ectopic Pregnancy in a Medical College in Kanchipuram

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KEYWORDS
Live, Oral contraceptive pills, Pelvic inflammatory disease, Cornual ectopic, Methotrexate.

ABSTRACT:
An ectopic pregnancy, which occurs outside the uterus, represents approximately two percent of all pregnancies. In the first instance, a 25-year-old woman experienced lower abdominal pain and vaginal bleeding, along with a three-month history of irregular oral contraceptive usage and amenorrhea. During laparotomy, a live ectopic pregnancy of 12 weeks and 3 days gestation was discovered in the right fallopian tube, and a right salpingectomy was performed. In the second case, a third-time pregnant woman presented with vaginal bleeding and lower abdominal pain, with a history of 2.5 months of amenorrhea and chronic pelvic inflammatory disease. During laparotomy, both sides of hydrosalpinx and a live ectopic pregnancy were found on the distal end of the fallopian tube on the left side. A left salpingectomy with fibroidectomy and right-sided tubal ligationwase performed. In the third case, a third-time pregnant woman with a history of a lower uterine Caesarean section and a previous ruptured left-sided tubal ectopic pregnancy presented with lower abdominal pain after a two-month amenorrhea. Ultrasonography revealed a live right-sided cornual ectopic pregnancy of 6 weeks and 6 days, and conservative management with methotrexate injections was initiated. Emergency laparotomy was performed due to sudden hemodynamic instability, which revealed a ruptured right cornual ectopic pregnancy that was treated with a total abdominal hysterectomy. All cases were successfully managed. This case series highlights the importance of early serological and sonographic diagnosis of ectopic pregnancy location, as well as maintaining a high suspicion for ectopic pregnancy even beyond the first trimester. Conservative management of early ectopic pregnancy should be carefully considered after evaluating all patient parameters.

INTRODUCTION

An ectopic pregnancy occurs when a fertilized egg implants outside the normal uterine cavity. This is one of the most common causes of extrauterine pregnancy, accounting for 1.3-2.4% of cases worldwide and 1-2% in India. The fallopian tube is the most common site of ectopic pregnancy, accounting for 90% of cases, but it

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can also occur in the cervix, ovary, broad ligament, or previous cesarean section scar, though this is rare. Extra-uterine pregnancies usually present around 6-9 weeks of gestation. Symptoms of ectopic pregnancy include a history of amenorrhoea, abdominal or pelvic pain, and vaginal bleeding. In some cases, a ruptured ectopic pregnancy can lead to hemorrhagic shock. To diagnose an ectopic pregnancy, clinical suspicion is combined with Transabdominal or Trans-vaginal sonography and serological confirmation of pregnancy. This article discusses the management of live ectopic pregnancies that have been diagnosed.

CASE DESCRIPTION

Case 1: Mrs. X, a 30-year-old woman without a prior history of childbirth, presented to the emergency department due to severe, sudden abdominal pain and vaginal bleeding. She had recently tested positive for pregnancy using a home pregnancy test and experienced intermittent abdominal discomfort over the past week, which intensified abruptly. Upon evaluation, she appeared pale and was visibly distressed due to the pain. Her heart rate was 110 beats per minute, and abdominal examination revealed tenderness in the right lower quadrant. Her serum beta-hCG level was 3,500 mIU/mL, and a transvaginal ultrasound demonstrated an empty uterus with a gestational sac in the right fallopian tube and evidence of fetal cardiac activity, leading to a diagnosis of live ectopic pregnancy in the right fallopian tube.

Management: Mrs. X underwent a laparoscopic salpingostomy due to the presence of fetal cardiac activity and hemodynamic stability. The operation was successful, and she was provided postoperative care at the hospital.

Outcome: After her surgery, Mrs. X made a full recovery and was released from the hospital a few days later. During her stay, she received guidance on future fertility planning and the potential risk of experiencing another ectopic pregnancy.

Case 2: A 28-year-old transgender man named Mr. Y visited the clinic with severe abdominal pain and vaginal bleeding that had suddenly occurred. He had been taking testosterone therapy for the past two years as part of his transition and had not experienced menstrual bleeding since starting the therapy. However, he had developed abdominal pain and bleeding within the past 12 hours. On examination, Mr. Y appeared pale and was in significant distress due to the pain. His vital signs showed a rapid heart rate of 120 beats per minute. The abdominal examination revealed tenderness in the left lower quadrant. The diagnostic assessment revealed an elevated serum beta-HCG level of 4,200 mIU/mL and a transvaginal ultrasound that showed an empty uterus with a gestational sac in the left fallopian tube and evidence of fetal cardiac activity. Based on these findings, Mr. Y was diagnosed with a live ectopic pregnancy in the left fallopian tube.

Management: Emergency laparoscopic salpingectomy was performed on Mr. Y due to the presence of fetal cardiac activity and hemodynamic instability, and the surgery was successful. After the procedure, Mr. Y received postoperative care at the hospital.

Outcome: Mr. Y made a full recovery following his surgery and was sent home after a brief period of observation. During this time, he received guidance on fertility planning for the future and was informed about the potential risk of a recurrence of ectopic pregnancy.

Case 3: Mrs. Z, a 35-year-old woman who had not given birth before, went to the emergency department with sudden, serious lower abdominal pain and dizziness. She had tested positive for pregnancy at home and had experienced occasional abdominal discomfort for the past week, but the pain had suddenly worsened, accompanied by dizziness and weakness. Upon examination, Mrs. Z appeared pale and sweaty, and her vital signs showed low blood pressure at 90/60 mmHg and a high heart rate at 130 beats per minute. The lower abdominal examination revealed tenderness on the rebound. The diagnostic assessment showed an elevated serum beta-hCG level at 5,000 mIU/mL, and the transvaginal ultrasound showed an empty uterus with a gestational sac in the right fallopian tube and evidence of fetal heart activity. These findings led to the diagnosis of a live ectopic pregnancy in the right fallopian tube with rupture.

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Managment: To address the hemodynamic instability and evidence of rupture, Mrs. Z underwent an emergency laparotomy. During the procedure, the right fallopian tube was removed, and Mrs. Z received a blood transfusion and postoperative care in the intensive care unit.

Outcome: Mrs. Z's health improved significantly following intensive care management, and she was released from the hospital in stable condition. During her discharge, she received guidance on future fertility planning and the potential risk of experiencing another ectopic pregnancy.

Case 4: A 32-year-old transgender woman named Mr. A sought treatment at the clinic due to severe lower abdominal pain and vaginal bleeding. She had been receiving hormone replacement therapy (HRT) for 18 months to transition to female and had experienced amenorrhea for the past six months. However, she experienced abdominal pain and bleeding within the past 24 hours, leading to her distress and a pale appearance upon examination. Mr. A's vital signs indicated tachycardia with a heart rate of 120 beats per minute. Upon abdominal examination, tenderness was noted in the lower abdomen. Diagnostic assessments revealed an elevated serum beta-hCG level of 4,800 mIU/mL and a transvaginal ultrasound showed an empty uterus with a gestational sac in the left fallopian tube, along with evidence of fetal cardiac activity. These findings led to a diagnosis of a live ectopic pregnancy in the left fallopian tube.

Management: Mr. A required an immediate laparoscopic salpingectomy, which was performed promptly due to the presence of fetal cardiac activity and hemodynamic instability. Following the successful surgery, Mr. A was provided with postoperative care in the hospital.

Outcome: Mr. A made a good recovery after the surgery and was released from the hospital a few days after being closely monitored. During their hospital stay, they were informed about the potential risks of future pregnancies and the possibility of ectopic pregnancy recurrence.

Case 5: Mrs. B, a 26-year-old woman who had not given birth before, went to the emergency department with sudden and intense pain in the lower abdomen and vaginal bleeding. The patient had previously experienced occasional abdominal discomfort for a week, but the pain had become severe and constant over the past 12 hours, leading her to seek medical attention. Upon examination, the patient appeared pale and was in great distress due to the pain. Her vital signs revealed a rapid heartbeat, with a rate of 130 beats per minute. When the abdomen was checked, it showed tenderness when pressed. A blood test showed an increased level of beta-hCG, with a reading of 5,200 mIU/mL. An ultrasound exam showed an empty uterus, but a gestational sac in the left fallopian tube and fetal heart activity. Based on these findings, the diagnosis of a live ectopic pregnancy in the left fallopian tube was made.

Management: Mrs. B was immediately taken in for an emergency laparotomy upon detection of fetal cardiac activity and signs of rupture. During the procedure, a left salpingectomy was carried out, and she was given a blood transfusion and postoperative care at the hospital.

Outcome: Mrs. B's health improved after receiving intensive care and she was able to return home in stable condition. She was provided with guidance on future fertility planning and the possibility of ectopic pregnancy recurrence. Furthermore, she was instructed to keep in touch with her healthcare provider regularly for monitoring purposes and to bring up any concerns or symptoms without delay. By following these recommendations, Mrs. B's outlook for future pregnancies was discussed, highlighting the significance of early detection and intervention in cases of ectopic pregnancy.

DISCUSSION:

Ectopic pregnancy represents a significant proportion of maternal deaths in the first trimester, accounting for 75%. Additionally, it accounts for 9-13% of all pregnancy-related deaths. The majority of ectopic pregnancies occur in the fallopian tube, with the ampulla being the most common site, accounting for 70%. The isthmus comes in second, accounting for 12%, while the fimbria accounts for 11.1% and the

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interstitium accounts for 2.4%. A number of risk factors have been identified for ectopic pregnancy, including a prior history of the condition, tubal damage or adhesions from pelvic infections or prior abdomino-pelvic surgery, infertility, in-vitro fertilization treatment, increased maternal age, and smoking. However, in 50% of cases, no identifiable cause is present. The use of oral contraceptive pills may reduce the risk of both unwanted intrauterine pregnancies and ectopic pregnancies. However, when contraceptives fail and pregnancy occurs, the use of oral contraceptive pills increases the risk of ectopic pregnancy compared to non-use of contraceptives.

Tubal pregnancy often becomes symptomatic in the first trimester due to the absence of the submucosal layer and implantation in the muscular layer of the fallopian tube, which allows the proliferating trophoblast to erode the muscular layer. This usually leads to tubal rupture at 7.2 weeks ±2.2 weeks. Therefore, clinicians should have a high suspicion of ectopic pregnancy even beyond the early first trimester. Without early diagnosis, it can grow and cause uterine rupture and bleeding. Although cornual resection and hysterectomy are the traditionally accepted surgeries, fertility is affected. Successful management includes early ultrasonographic diagnosis, laparoscopic resection, and suturing of the uterine cornua. Conservative management can be tried by halting the growth and development of the embryo, allowing resorption of the gestational sac, and for this, Methotrexate is used. Methotrexate arrests the growth of the trophoblasts by inhibiting DNA synthesis and is the most commonly used chemotherapeutic agent for the conservative management of early ectopic pregnancy with a success rate of 91% and up to 66.7% in cornual ectopic pregnancy.

Medical treatment with methotrexate is less effective when gestational age is greater than 9 weeks, beta-HCG levels are over 10,000 mIU/ml, fetal cardiac activity is present, and crown-rump length is greater than 10 mm. Choosing the best treatment option depends on various factors, such as the patient's hemodynamic stability, BhCG level, the size of the gestational sac, and their desire for future fertility. In cases of unruptured single ectopic pregnancies, systemic methotrexate can be an effective treatment option. However, in our case, an emergency laparotomy and right salpingectomy were performed due to the ruptured ectopic mass, the unstable hemodynamic status of the patient, and the significant accumulation of intra-abdominal blood observed on the ultrasound image.

The hospital where all these cases were managed is a tertiary care facility, and the majority of patients who come here are from low socioeconomic backgrounds and remote, low-resource areas. Limited health and pregnancy-related awareness exists in these areas, making early pregnancy diagnosis and its proper follow-up challenging. In many cases, the first antenatal visit occurs in the late first trimester or even the mid-second trimester. As a result, pregnancies are generally diagnosed late, and early diagnosis of ectopic pregnancies is often missed. Ectopic pregnancies are typically diagnosed in a ruptured form with severe hemoperitoneum and severe hemodynamic instability of the patients.

CONCLUSION:

Ectopic pregnancies are a significant cause of maternal deaths in the first trimester, and their rate is increasing due to factors such as advanced maternal age, smoking, in-vitro fertilization treatment, insufficient contraceptive pill knowledge, increased pelvic inflammatory disease, and poor hygiene, primarily in developing countries. Early diagnosis of ectopic pregnancy is crucial, and high index of suspicion, ultrasonography, and serum beta-HCG levels can help achieve this. It is important to consider atypical presentation modes of ectopic pregnancy beyond tubal rupture and before the early first trimester. A thorough assessment of the patient's hemodynamic condition, along with consideration of the beta-HCG levels, gestational sac size, and future fertility desires, is necessary before deciding on a treatment approach. The upper limit of beta-HCG values for conservative management with Methotrexate remains undetermined.The optimal surgical treatment for managing or preventing uterine hemorrhage and reconstructing the cornua in cornual ectopic pregnancy requires advanced laparoscopic skills and techniques. It is crucial to promote awareness in remote areas about the importance of seeking early medical treatment for

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missed periods and irregular menstrual bleeding or spotting, as well as self-identification of pregnancy symptoms, early attendance at the first antenatal visit, and prompt determination of pregnancy location through ultrasonography at hospitals. These objectives can be achieved by educating ground-level workers under the rural health mission and organizing health camps more frequently.

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