Ectopic Pregnancy: A Major Occurring Problem

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ABSTRACT

Ectopic pregnancy occurs when the fetus implants outside the uterus or to an abnormal portion of the uterus. It is the result of flaw in the reproductive physiology that allows the fetus to implant outside the endometrial cavity. This leads to the death of the fetus. Ectopic pregnancy is the main cause of maternal death in early pregnancy. Nearly 0.25-2.0% of pregnancies are ectopic. 0.91% of pregnant women were reported with ectopic pregnancy in a study done at tertiary care hospital in South India. Medication: If the fallopian tube has not ruptured medication alone can help the situation. Methotrexate, a folic acid antagonist which inhibits DNA synthesis and cell replication is used. The mechanism of action is to kill cytotrophoblast cell that dividing rapidly at the fallopian tube which then the body spontaneously reabsorbs. Laparoscopy is done for pregnant women with extensive bleeding, or poor visualization of the pelvis. Women with the history of ectopic pregnancy should have an early diagnosis. Women with any infections or pelvic inflammatory diseases should get regular checkups. Laparoscopy is the gold standard surgical treatment for ectopic pregnancy in those women with ruptured fallopian tube.

Keywords: Methotrexate, laparoscopy, cytotrophoblast, fetus, implant.

INTRODUCTION

Ectopic pregnancy occurs when the fetus implants outside the uterus or to an abnormal portion of the uterus1. It is the result of flaw in the reproductive physiology that allows the fetus to implant outside the endometrial cavity. This leads to the death of the fetus. Without timely diagnosis and treatment, it can become a life-threatening situation2.

Ectopic pregnancy is the main cause of maternal death in early pregnancy. Nearly 0.25-2.0% of pregnancies are ectopic. 0.91% of pregnant women were reported with ectopic pregnancy in a study done at tertiary care hospital in South India3. Women who have ectopic pregnancy are at risk for another such pregnancy and also for future infertility4.

Uterus is the only place where the embryo can grow into fetus. Most ectopic pregnancies occur in fallopian tube, rarely in the ovary or in the cervix5. So based on the place where the fetus was implanted different types of ectopic pregnancies can occur. Two types of ectopic pregnancies: Tubal pregnancy, non-tubal pregnancy, Heterotopic pregnancy6. The infrequency of the implantation sites makes the study of treatment difficult. Advances in the ultrasound technology have provided the capability to visualize the ectopic pregnancy at its earlier stages7.

Ectopic pregnancy is the major clinical problem all over the world. United states has nearly 75,000 cases per year8. Around 1-2% of pregnancies are ectopic and this is the reason for 3-4% of pregnancy related deaths, because the symptoms of the ectopic pregnancy will develop in the late weeks of the pregnancy9.

Signs and Symptoms

Early signs include10:

- Vaginal bleeding
- Pelvic pain
- Stomach upset
- Dizziness
- Weakness
- Pain on one side of the body
- Abdominal cramps

Ectopic pregnancy can result in fallopian tube to rupture. This cause emergency symptoms which include:

- Heavy vaginal bleeding
- Fainting
- Shoulder pain
- Hypotension
It occurs when the egg has implanted in the fallopian tube. This is the most common type and majority of the ectopic pregnancies are tubal pregnancies.

Non-tubal ectopic pregnancy: When the egg implant in the part other than fallopian tube cause non tubal ectopic pregnancy. Only 2% of ectopic pregnancies are non-tubal pregnancies. Egg implants in the ovary, cervix, intra-abdominal region.

Heterotopic pregnancy: This is the rare case, where one fertilized egg implants inside the uterus and other implants outside the structure. The ectopic pregnancy often discovered before the intra-uterine pregnancy mainly due to pain.

Based on the site of implantation i.e., inside or out side the tube ectopic pregnancy can be further divided into 6:

1. Interstitial ectopic pregnancy: It occurs when implantation of fetus take place in the interstitial segment of the fallopian tube.
2. Cervical ectopic pregnancy: It occurs when the fetus implants in the endocervical canal.
3. Cesarean scar ectopic pregnancy: It occurs when the fetus implants in the anterior lower uterine segment at the site of the cesarean scar. Early diagnosis of this pregnancy is essential because of the risk for the uterine rupture and uncontrollable hemorrhage.
4. Intramural ectopic pregnancy: In this case the gestational sac is located in the uterus wall and is completely surrounded by the myometrium and separates from the endometrial cavity.
5. Ovarian ectopic pregnancy: It results when a fertilized ovum retains in the ovary itself. An echogenic wall is another sign with an ovarian ectopic pregnancy.
6. Abdominal ectopic pregnancy: It occurs when the fetus implants in the peritoneal cavity. Implantation occur anywhere in the abdomen; it can be on the peritoneal surface or in the abdominal viscera.

Diagnosis

1. Physical examination
2. Laboratory investigations: beta HCG levels

Serum b-hCG levels can be useful in determining if the current pregnancy is likely to be in an ectopic location. In a normal pregnant woman, the b-hCG levels rise for the first 4 weeks, then followed by slower rise until 10 weeks.
Decreasing b-hcg levels suggest a failing pregnancy but this do not indicate its location 16.

The normal b-hcg levels in serum is 5 IU/L and in urine is 20-50 IU/L.

3. Use of progesterone measurement

Progesterone levels are stable and independent of gestational age in the first trimester.

Pregnant women with progesterone levels above 22ng/ml will have a high likelihood of intrauterine pregnancy. And those with levels of 5 ng/ml or less will likely to have an ectopic pregnancy 17.

4. Ultrasound

- A transvaginal ultrasound will show the exact location of the fetus. For this test a wand like is used. This device id placed into the vagina which passes the sound waves and creates on image uterus, ovaries, and fallopian tube.

- Abdominal ultrasound is also used in which an ultrasound wand is rolled over the belly 18.

Treatment

Medication: If the fallopian tube has not ruptured medication alone can help the situation. Methotrexate, a folic acid antagonist which inhibits DNA synthesis and cell replication is used. The mechanism of action is to kill cytotrophoblast cell that dividing rapidly at the fallopian tube which then the body spontaneously reabsorbs 19.

To use methotrexate the b-hcg levels should be monitored. Success rates of methotrexate decreases as the initial b-hcg concentration increases. Although there is no absolute b-hcg levels at which treatment is contraindicated.

So, it is recommended that pregnant women with initial b-hcg levels greater than 2000 IU/ml be undergo surgery rather than medical treatment 20.

Surgery: Laparoscopy is done for pregnant women with extensive bleeding, or poor visualization of the pelvis.

Two laparoscopic techniques are available for treating ectopic pregnancies.

- Salpingectomy: The fallopian tube containing ectopic pregnancy is removed

- Salpingotomy: After the removal of ectopic pregnancy the affected fallopian tube is preserved 16.

CONCLUSION

✓ Women with the history of ectopic pregnancy should have an early diagnosis.
✓ Women with any infections or pelvic inflammatory diseases should get regular checkups.
✓ Laparoscopy is the gold standard surgical treatment for ectopic pregnancy in those women with ruptured fallopian tube.

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