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REVIEW ON ECTOPIC PREGNANCY

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ABSTRACT

Ectopic pregnancy, often known as EP, is a serious medical issue that affects women who are of childbearing age. EP stands for extrauterine pregnancy, which describes pregnancies that take place outside of the uterine cavity and accounts for 1.2–1.4 percent of all recorded pregnancies. All of the risk factors that have been found are related to the mother, including endometriosis, pelvic inflammatory disease, Chlamydia trachomatis infection, smoking, tubal surgery, and cycles of induced conception. As a result of these advancements, the environment has become favourable for conducting clinical tests utilising methotrexate as a non-surgical treatment for EP. The following tests are used to diagnose endometriosis: serum human chorionic gonadotropin, urinary hCGRP/i-hCG, measurement of progesterone, transvaginal ultrasound scan, computed tomography, measurement of vascular endothelial growth factor, CK, disintegrin and metalloprotease-12, and hysterosalpingography. The treatment options available for EP include surgical treatment, which can be performed via laparotomy or laparoscopy; medicinal treatment, which can typically be administered either systemically or via a local route; or expectant treatment. The evaluation of the data led to the conclusion that a drop in surgical treatment was observed, but there was not an actual decrease in the occurrence of EP. As a result, additional novel avenues need to be explored in order to investigate early detection of the EP.

Keyword: Methotrexate, beta-hCG, Ectopic, Hemoperitoneum.

INTRODUCTION:

The term "ectopic pregnancy" (EP), also known as "extra uterine pregnancy," is derived from the Greek word "ektopos," which means "out of place." Ectopic pregnancy refers to the implantation of a blastocyst outside the endometrium of the uterine cavity, with more than 95.5% of these implantations occurring in the fallopian tube. In these cases, the foetus or embryo either does not develop or stops growing. Ovarian (3.2 percent) and abdominal (1.3 percent) sites are also among the most common places where implantation takes place. This is a major cause of morbidity and mortality with associated risks of tubal rupture and intra abdominal haemorrhage in women, and it can lead to substantial future reproductive morbidity, including subsequent ectopic pregnancy and infertility [1, 2]. This is a major cause of morbidity and mortality with associated risks of tubal rupture and intra abdominal haemorrhage in women. As a result, it is a medical emergency that calls for treatment right now.

The incidence of ovarian ectopic pregnancy (OEP), which is one of the rarest forms, is believed to be between 0.15 and 3 percent of all cases of OEP that are detected. It has been stated that preoperative diagnosis continues to be difficult, and that it is impossible to make an early diagnosis of the condition; yet, early diagnosis is important in order to avoid more serious problems and emergency invasive treatments [3]. Due to the fact that there was a significant amount of bleeding, MTX-based medical treatment was not a viable choice. Laparotomy is the procedure of choice for the vast majority of surgeons when dealing with hemoperitoneum. Researchers have only documented a small number of successful laparoscopic therapy instances in female patients diagnosed with hemoperitoneum.

RISK FACTORS:

Risk factors for ectopic pregnancies are numerous and well-documented. Ectopic pregnancies are most commonly caused by pelvic inflammatory disease. Ectopic pregnancies are 10–25 percent more likely in women who have had a previous ectopic pregnancy. Patients who have tubal ligation or surgery run the risk of an ectopic pregnancy by 35–50%. Ectopic pregnancies have increased fourfold since the advent of ovulation inducement and in vitro fertilisation. The 35- to 44-year-old age group has the highest prevalence of ectopic pregnancies due to the presence of intrauterine devices. An other etiological element that has been suggested is that of smoking [4, 5].

CLINICAL PRESENTATION:

Amenorrhea and abdominal or pelvic discomfort are the most common clinical presentations. About half of all patients experience vaginal bleeding at some point during their treatment.

TYPES:

1. **Interstitial ectopic pregnancy:**

   Interstitial ectopic pregnancies account for 2–5% of all ectopic pregnancies and are associated with increased morbidity and mortality due to their later appearance, typically in the late first or early second trimester. The myometrium envelops a section of the gestational sac, allowing it to swell without pain for an extended length of time. This causes the pregnancy to expand dramatically, heightening the risk of rupture, which may result in major haemorrhage [6].

2. **Fallopian tube pregnancy:**

   The ampullary portion of the fallopian tube is the location of 75–80 percent of ectopic pregnancies, the isthmic portion of the fallopian tube is the location of 10–15 percent of ectopic pregnancies, and the fimbrial end of the fallopian tube is the location of approximately 5 percent of ectopic pregnancies. There is a possibility of identifying hematosalpinx and an associated tubal mass. There is a possibility that any of the findings outlined earlier are present [7, 8].

3. **Ovarian ectopic pregnancies:**

   Ovarian ectopic pregnancies are uncommon, accounting for only 0.5-1 percent of all ectopic pregnancies. An ovarian ectopic pregnancy can occur at the fallopian tube's fimbricated end. They continue to grow after attaching to an abdominal structure, drawing on its extensive blood supply. They typically attach to the uterine surface, broad ligaments, or ovaries, but they can also attach to the liver, spleen, or intestines. If an abdominal pregnancy can develop an adequate source of nutrients, it may occasionally reach term before being diagnosed. As soon as the diagnosis is made, surgical removal is recommended. Because the blood supply is often extensive and may come from multiple sources, an abdominal pregnancy has very high mortality and morbidity rates for both the mother and the foetus. Lithopedion formation with foetal calcification can be seen on ultrasound in cases of foetal death [9].

4. **Cervical ectopic pregnancies:**

   Cervical ectopic pregnancies are rare and comprise 0.15 percent of all ectopic pregnancies. On ultrasonography, these conditions are diagnosed based on the intracervical placement of the sac, in addition to the absence of a fundus and the presence of an os. At the site of trophoblastic invasion, trophoblastic flow can be seen within the cervix of the pregnant woman. It has been documented that the sac has the appearance of an hourglass. Although trophoblastic flow may be observed during a miscarriage, it is important to distinguish these cases from those that include an imminent or partial abortion. In recent years, hysterectomy has been replaced as an option for treating cervical pregnancies by methotrexate, which can now be administered either systemically or locally. In the past, the only treatment option available was hysterectomy. Another option is to inject potassium chloride directly into the affected area.

5. **Abdominal ectopic pregnancies:**

Abdominal ectopic pregnancies happen in 1 out of every 10,000 pregnancies. They usually happen when the fallopian tube ruptures or when an abortion is done through the fibrous end of the tube. After attaching to an abdominal structure, they keep growing because they get blood from that structure, which may be a lot. They usually attach to the surface of the uterus, large ligaments, or the ovaries, but they can also attach to the liver, spleen, or intestines. Sometimes, a pregnancy in the abdomen can reach full term before it is found, if it can find a good source of food. As soon as the problem is found, surgery is needed to get rid of it [10]. There are very high rates of death and illness for both the mother and the foetus during an abdominal pregnancy because the blood supply is often large and can come from more than one source. On ultrasound, lithopedion formation and calcification of the foetus can show that a foetus has died.

DIFFERENTIAL DIAGNOSIS:

Normal early IUP, corpus luteal cysts, coexistent adnexal pathology, pedunculated fibroids, neighbouring bowel loops, tubo-ovarian abscesses, and tubal cysts are all possibilities in the differential diagnosis.

As a single serum measurement of the b-hCG concentration may not identify the location of the gestational sac, measuring the ratio of urinary hCGRP to i-hCG may be beneficial in the diagnosis of EP. The demonstration of a normal doubling of serum levels over a period of 48 hours is supportive of a diagnosis of foetal viability; however, it does not eliminate the possibility of EP [11, 12]. Failure levels on increasing the level of b-hCG concentration to reach 50 percent confirm non-viability and signal early pregnancy loss (EP).

THERAPEUTIC MANAGEMENT:

The medical therapy of EP is significantly more cost-effective than surgical treatment. Systemic and local methotrexate (MTX), local potassium chloride, hyperosmolar glucose, prostaglandins, danazol, etoposide, and mifepristone are some of the medications that have been tried and tested for the treatment of ectopic pregnancies (RU486). Treatments using MTX are the primary focus of contemporary therapies [13, 14]. If we had a better understanding of the disease's pathophysiology, we would have a greater ability to forecast and prevent the disease in women, which would eliminate the danger. In cases of EP detected during the second and third trimesters, MTX was initially administered in the 1960s in order to facilitate the safe surgical removal of the placenta from its abdominal implantation sites.

Patients who are being treated with MTX should be properly monitored because, as was previously said, the medication can induce significant abdominal pain and has side effects as well. The concentration of b-hCG in the serum needs to be tested every week. If the concentration of b-hCG in the patient's serum has not decreased by at least 25 percent during the first week after receiving MTX, a second dosage should be administered. However, this is only necessary for 15–20 percent of patients. Multidose (MTX 1.0 mg/kg i.m daily; days 0, 2,

4, and 6 alternated with folinic acid 0.1 mg/kg orally on days 1, 3, 5, and 7) and single dose (MTX 0.4 to 1.0 mg/kg or 50 mg/m2 i.m without folinic acid) are the two most common types of dosing schedules for MTX. Both of these dosing schedules are available [15].

CONCLUSION:

The use of ultrasound continues to be the most accurate and reliable method for diagnosing and evaluating ectopic pregnancies. This assists in the localization of the ectopic pregnancy and evaluates the related problems, such as rupture and hemoperitoneum. The determination of whether surgery is necessary or whether nonsurgical treatment could be an option requires anatomic localisation to be performed using ultrasonography.

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