Opinion Article

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Ectopic pregnancy that can carry a high rate of morbidity and mortality

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Introduction

Ectopic pregnancy is a well-known pregnancy complication that, if not diagnosed and treated promptly, can result in a high risk of morbidity and fatality. Because ectopics can show with pain, vaginal bleeding, or more ambiguous problems like nausea and vomiting, it's critical that doctors keep a high index of suspicion for them in their pregnant patients. To allow for a healthy intrauterine pregnancy, fertilisation and embryo implantation require a complex interplay of chemical, hormonal, and anatomical interactions and circumstances. Much of this system is beyond the scope of this article, but the ovaries, fallopian tubes, uterus, egg, and sperm are the most important anatomical components to our discussion. The female reproductive organs, the ovaries, are positioned on both lateral sides of the uterus in the lower pelvic region. One of the duties of the ovaries is to release an egg each month for possible fertilisation. The female egg is transported from the ovaries to the uterus by the fallopian tubes, which are tubular structures. When sperm is delivered, it fertilises the egg, resulting in the formation of an embryo. The embryo will subsequently implant in the uterus' endometrial tissue. When foetal tissue implants outside of the uterus or attaches to an aberrant or scarred part of the uterus, it is called an ectopic pregnancy. The implantation of an embryo outside of the uterine cavity, most usually in the fallopian tube, is known as ectopic pregnancy. Within the fallopian tubes, smooth muscle contraction and ciliary beat aid in the transit of an egg and embryo. Tubal dysfunction is caused by damage to the fallopian tubes, which is usually caused by inflammation and can result in the retention of an egg or embryo. Inflammation can be caused by a variety of local sources, including toxic, viral, immunologic, and hormonal factors. Following tubal injury, pro-inflammatory cytokines are upregulated, which promotes embryo implantation, invasion, and angiogenesis within the fallopian tube. Infection with Chlamydia trachomatis causes tubal epithelial cells to produce interleukin 1, which is a crucial indication for embryo implantation in the endometrium. Interleukin 1 is also involved in downstream neutrophil recruitment, which contributes to tubal damage in the fallopian tubes. Smoking and illness have a deleterious impact on the frequency of Cilia beats. Hormonal fluctuations have also been shown to affect the frequency of cilia beats during the menstrual cycle. Ectopic implantation can happen everywhere in the body, including the cervix, uterine cornea, myometrium, ovaries, and abdominal cavity. Tubal ligation or other post-surgical changes to the fallopian tubes put women at risk for ectopic pregnancies because the fallopian tube's native function is disrupted. A patient can also have a heterotopic pregnancy, which is an ectopic pregnancy with a contemporaneous intrauterine pregnancy. Ectopic pregnancy is expected to occur 1 to 2% of the time in the general population, and 2 to 5% of the time in patients who have used assisted reproductive technology . Only about ten percent of all ectopic pregnancies have implantation outside of the fallopian tube. Ectopic pregnancies caused by a caesarean scar account for 4% of all ectopic pregnancies and 1 in 500 among women who have had at least one previous c-section. Interstitial ectopic pregnancies account for up to 4% of all ectopic implantation sites and are associated with higher morbidity and mortality rates than other ectopic implantation sites. The high rate of bleeding in interstitial ectopic pregnancies is to blame for the higher morbidity and death. In 1% of ectopic pregnancies, those implanted in the myometrium, intraamural ectopic pregnancies were recorded. Ectopic pregnancies that implant in the abdominal cavity make about 1.3 percent of all ectopic implantation locations, with the pouches anterior and posterior to the uterus, as well as the serosa of the adnexa and uterus, being the most prevalent. Implantation sites have also been reported in the omental, retroperitoneal, splenic, and hepatic regions. Advanced maternal age, smoking, a history of ectopic pregnancy, tubal injury or surgery, prior pelvic infections, DES exposure, IUD use, and assisted reproductive technologies are all risk factors for ectopic pregnancies. The chance of ectopic pregnancy increases with age, as the function of the fallopian tubes declines with age, causing oocyte transfer to be delayed. Women who have had previous ectopic pregnancies are at 10 times the risk of the general population. In vitro fertilisation (IVF) patients are more likely to have an ectopic pregnancy when they have a contemporaneous intrauterine pregnancy, termed as heterotypic pregnancy. The risk is believed to be one in every one hundred women who undergo in vitro fertilisation. In women seeking in vitro fertilisation, the probability of conceiving a heterotopic pregnancy has been estimated to be as high as 1 in 100. The

ampullary region of the fallopian tube is the most prevalent place for ectopic pregnancy adhesion. Ectopic pregnancies are said to form in the ampulla, infundibular, and isthmic regions of the fallopian tubes in 95 percent of cases. There is a migration of blastocyst into the myometrium in caesarean scar pregnancies due to a scarring problem from a previous c-section. The type of caesarean scar pregnancy is determined by the depth of implantation, with type 1 implantation near to the uterine wall and type 2 implantation closer to the urinary bladder. The majority of women who report with an ectopic pregnancy complain of pelvic pain; however, not all ectopic pregnancies cause pain. Pelvic pain/discomfort, abdominal pain/discomfort, nausea/vomiting, syncope, lightheadedness, vaginal bleeding, and other symptoms in women of reproductive age should be investigated for the possibility of pregnancy. Providers must determine when the patient's last menstrual period was and whether they have monthly menstrual cycles. If patients are sexually active and have missed their previous period or have irregular uterine bleeding, they may be pregnant and require further testing with a pregnancy test. Providers should look for any known ectopic pregnancy risk factors in their patient's history, such as a previous confirmed ectopic pregnancy or known fallopian tube injury (history).