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Case Report

Ectopic Pregnancy in caesarean section scar: A case report

Rajarshi Aich MBBS^{*}, Narayan Solanki MBBS,
Ketan Kakadiya MBBS, MD, DNB, Ashank Bansal MBBS, MD, DNB,
Manisha Joshi MBBS, MD, Ajita Nawale MBBS, MD

Department of Radiology, Lokmanya Tilak Municipal Medical College and Lokmanya Tilak Municipal General Hospital (LTMMC & LTMGH), Room no. 703, New RMO Hostel, Sion, Mumbai 400022, India

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ABSTRACT

We report a rare case of ectopic pregnancy occurring in the scar of a previous caesarean section, diagnosed by ultrasonography and confirmed by 3.0-T magnetic resonance imaging of pelvis. We present the clinical details and imaging findings, followed by discussion of the etiology, pathogenesis, and imaging of this condition.

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Introduction

Ectopic pregnancy is one of the leading causes of mortality among women of child-bearing age group. Most of these ectopic gestations are located in the fallopian tube, ampulla being the most common location. However, ectopic pregnancies are also known to occur in the cervix, ovary, previous caesarean scar, and abdomen. Intramural pregnancy with implantation in a previous caesarean section scar is probably the rarest location for ectopic pregnancy [1]. This type of pregnancy is prone for complications like uterine rupture, life-threatening hemorrhage, and hypovolemic shock [2–4].

The true incidence of pregnancy occurring in a uterine scar has not been determined because so few cases have been reported in the literature. However, the incidence of such cases seems to be on the rise [1,5]. This may reflect both the increasing number of caesarean sections being performed and the more widespread use of the transvaginal scan that allows earlier detection of such pregnancies [4].

The diagnosis is usually made on ultrasonography and can be confirmed by magnetic resonance imaging (MRI) or during laparoscopy and/or laparotomy.

We present a case of ectopic pregnancy in caesarean section scar detected in an asymptomatic woman who had come for routine antenatal check up.

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^{*} Corresponding author.

E-mail address: rajarshi.aich.2011@gmail.com (R. Aich).

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Case report

A 30-year-old woman had come for routine antenatal check up after 2 months of amenorrhea and positive urine pregnancy test. She was otherwise asymptomatic. She had history of 2 previous caesarean sections; first one performed 5 years back for intrapartum fetal distress and the second one performed 2 years back due to complete placenta previa.

She was advised routine first trimester sonography.

Transabdominal sonography supplemented by transvaginal sonography revealed empty uterine cavity and empty cervical canal with a gestational sac in anterior myometrium of lower uterine segment (Figs. 1-3). The gestational sac had a fetal pole and yolk sac within, showing fetal cardiac activity (Fig. 4) and having average gestational age of 8 weeks 1 day. Anterior myometrium anterior to the gestational sac was thinned out. On Doppler examination, hyperechoic rim of choriodecidual reaction and umbilical cord shows vascularity.

MRI pelvis was performed in a 3.0-T MRI scanner (Philips Achieva). The study confirmed a gestational sac implanted within the anterior myometrium of the lower uterine segment in the region of the scar of previous cesarean section (Fig. 5). The gestational sac showed a well-formed T1 isointense and T2 hypointense fetal pole within and was surrounded by a well-appreciated decidual reaction (Fig. 6). Anterior myometrium anterior to the gestational sac was thinned out. Posteriorly, the gestational sac was seen extending into the endometrial cavity in the lower uterine segment. The posterior myometrium showed good wall thickness.

Because the patient already had 2 living issues, she went on to have a laparotomy and hysterectomy. She tolerated the procedure well and postprocedure follow-up serial ultrasound examinations of the pelvis showed no complications.

Discussion

There are many theories which explain the occurrence of intramural ectopic pregnancy. The most accepted theory seems to be that the blastocyst invades into the myometrium through a microscopic dehiscence tract, which may be the result of trauma of a previous caesarean section or any other uterine surgery [6] or even after manual removal of the placenta [3]. Another mechanism for intramural implantation may be in vitro fertilization and embryo transfer, even in the absence of any previous uterine surgery [7].

Vial et al. [8] proposed that there were 2 different types of such ectopic pregnancies. In the first type, after implantation of the gestational sac on the uterine scar, there is progression away from the serosal lining, either toward the cervicoisthmic space or toward the uterine cavity. Such a pregnancy may proceed to full term and a viable birth, but with an increased risk of life-threatening massive bleeding from the site of implantation [2]. The second type is a deep implantation into a uterine scar with progression towards the serosal surface. This culminates in rupture and bleeding during the first trimester of pregnancy. Some authors (Ghezzi et al.) [5] believe that the difference between those 2 types of pregnancy is of paramount importance. When there is a continuous



Fig. 1 – Transabdominal sonography showing empty uterine cavity and empty cervical canal with a gestational sac in anterior myometrium of lower uterine segment. The gestational sac shows a fetal pole within. Anterior myometrium anterior to the gestational sac is thinned out.

connection to the uterine cavity, expectant management is justified because pregnancy may continue until a viable birth. In the latter type, if immediate treatment is not undertaken, the risk of late first-trimester uterine rupture and life-threatening bleeding is very high. According to Jurkovic et al. [4] in view of the lack of significant data, each woman should be given all the available information and the opportunity to decide on the management of her pregnancy. However, in a study done on 8 women diagnosed with caesarean scar ectopic pregnancy, of which 1 underwent expectant management, Maymon et al. [9] believed that the prognosis for an uneventful term pregnancy is still very poor.

Typically, the diagnosis is made based on ultrasound evaluation of the uterus and confirmed by MRI or during laparoscopy and/or laparotomy. Sonography combined with Doppler flow imaging has been advocated as a very reliable tool for detecting these cases, without the need for a pelvic MRI for confirmation [4,9,10].

Proposed ultrasound diagnostic criteria for diagnosis of an intramural ectopic gestation, with a differential diagnosis

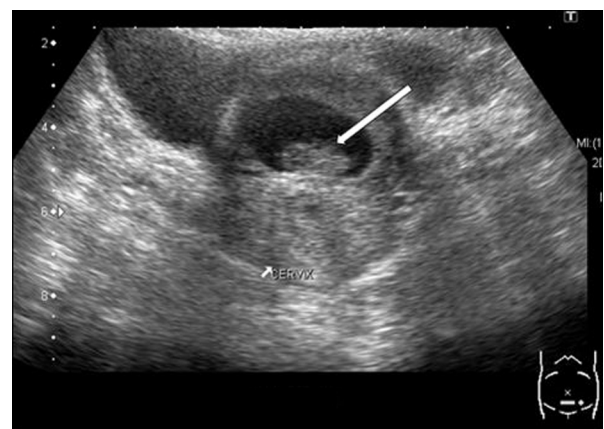


Fig. 2 – Transabdominal sonography showing gestational sac in anterior myometrium of lower uterine segment, which shows a fetal pole (thick white arrow) within.

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