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Rising Incidence of Cesarean Scar Pregnancy: Early Diagnosis and Contemporary Management Strategies - A Narrative Review

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Abstract: ***Cesarean scar pregnancy (CSP) is a rare but potentially life-threatening form of ectopic pregnancy in which the gestational sac implants within the scar of a previous cesarean section. With rising cesarean delivery rates worldwide, the incidence of CSP is also increasing. Early diagnosis is crucial to reduce maternal morbidity, preserve fertility, and avoid severe complications such as uterine rupture and massive hemorrhage. This review summarizes the current understanding of epidemiology, risk factors, diagnosis, and management of CSP according to contemporary international standards.***
Keywords: ***Cesarean scar pregnancy, ectopic pregnancy, transvaginal ultrasound, methotrexate, uterine artery embolization, fertility preservation***

I. INTRODUCTION

Cesarean scar pregnancy is one of the rarest forms of ectopic pregnancy, accounting for approximately 6% of ectopic pregnancies in women with previous cesarean sections. Implantation occurs within the myometrial defect of a prior cesarean scar. The increasing global cesarean rate has contributed to a parallel rise in CSP cases. Delayed diagnosis can lead to catastrophic complications including severe hemorrhage, uterine rupture, disseminated intravascular coagulation, and hysterectomy. Therefore, awareness among obstetricians and radiologists is essential.

II. MATERIALS AND METHODS

A narrative review was conducted using recent obstetrics and gynecology literature, guidelines, and standard textbooks. Relevant information regarding epidemiology, diagnosis, ultrasound findings, and management approaches was compiled and organized into a clinically useful format suitable for practicing obstetricians and gynecologists.

III. DISCUSSION

Risk factors for cesarean scar pregnancy include multiple previous cesarean sections, prior uterine surgeries, in vitro fertilization, manual removal of placenta, and short interpregnancy intervals. Transvaginal ultrasound remains the gold standard for diagnosis. Key ultrasound findings include an empty uterine cavity and cervical canal, gestational sac located in the anterior lower uterine segment at the site of the cesarean scar, thin or absent myometrium between the bladder and gestational sac, and increased peritrophoblastic vascularity on Doppler imaging.

Management depends on gestational age, fetal cardiac activity, serum beta-hCG level, hemodynamic stability, and future fertility desires. Medical management with systemic or local methotrexate may be effective in selected early cases. Surgical options include suction evacuation under ultrasound guidance, hysteroscopic resection, laparoscopic scar excision, and laparotomy in complicated cases. Uterine artery embolization may be used as an adjunct to reduce hemorrhage risk. Recent evidence suggests that combined approaches such as local methotrexate followed by suction evacuation or uterine artery embolization with surgical management offer higher success rates and lower complication rates than single-modality treatment. Early diagnosis is associated with better fertility preservation and reduced maternal morbidity.

IV. CONCLUSION

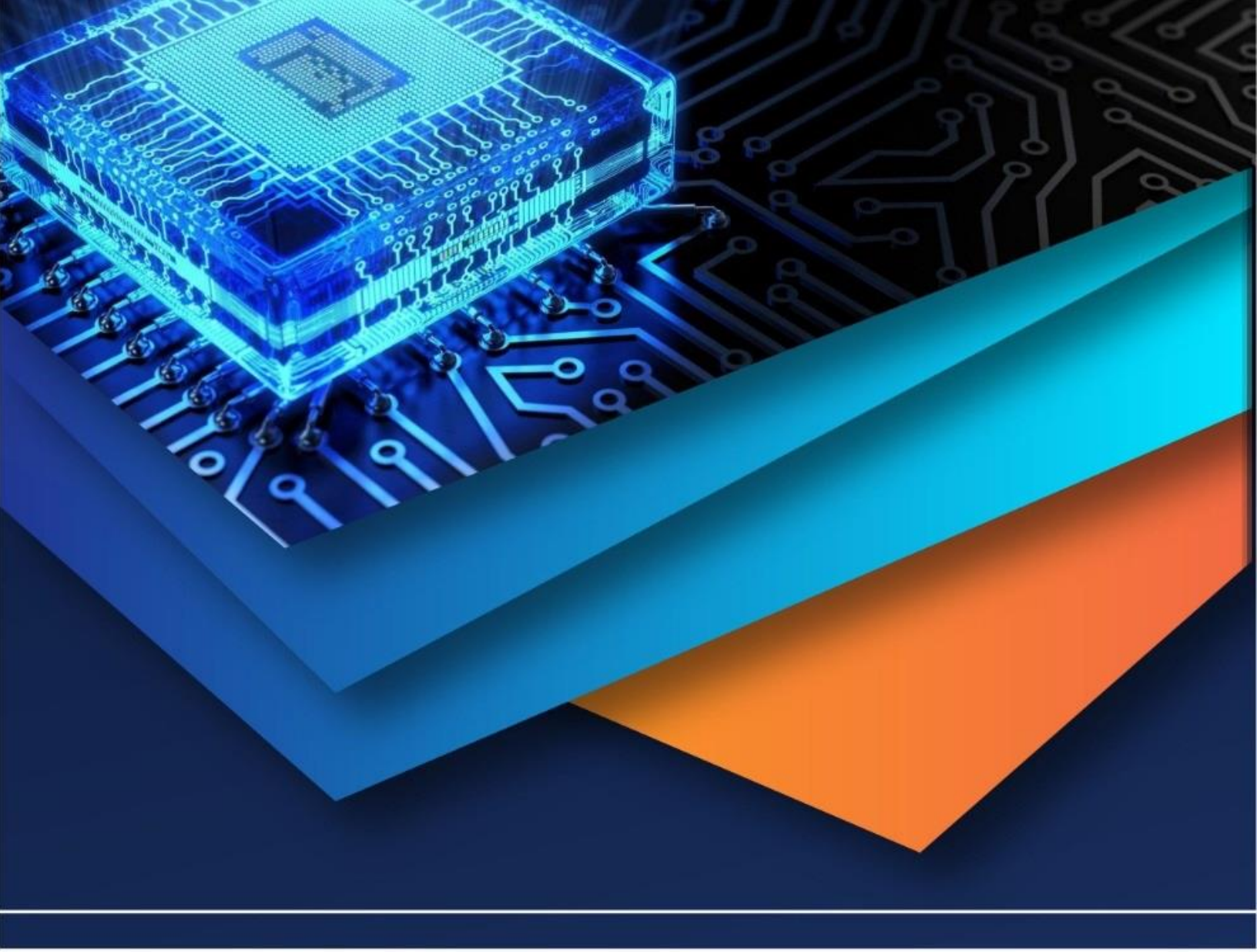
Cesarean scar pregnancy is an emerging clinical challenge due to rising cesarean section rates worldwide. Early recognition with transvaginal ultrasound is essential. Individualized management based on patient stability, reproductive wishes, and available expertise is necessary. A multidisciplinary approach involving obstetricians, radiologists, and interventional specialists can improve outcomes and reduce morbidity.

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