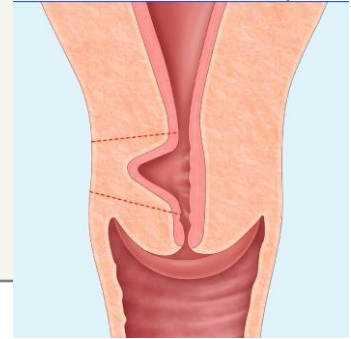


# Cesarean Scar Defect



## At a glance

- Women who have delivered by C-section can have uterine scarring that causes infertility, pain, and abnormal bleeding.
- This results when the uterine incision does not heal properly and forms a pouch in the lower part of the uterine lining that fills with fluid and alters normal menstrual bleeding.
- Laparoscopic surgery can correct the problem, restoring fertility, reducing pain and abnormal bleeding.

## What is Cesarean scar defect?

The Centers for Disease Control and Prevention's (CDC) latest figures report 32.2% of all U.S. births are by Cesarean section (C-section). As a result, the rate is rising for Cesarean scar defect – the presence of a “niche” at the site of a Cesarean delivery scar – with the reported prevalence between 24% and 70% in a random population of women with at least one Cesarean delivery.

The issue arises when the defect becomes a pouch, or isthmocele in the lower uterine segment and accumulates fluid or blood. When old menstrual blood becomes trapped in the isthmocele and uterine cavity, it sets up an inflammatory response in the uterus, impairing embryo implantation.

The presence of a Cesarean scar “niche” is associated with future potential fertility problems including an increased likelihood of needing a C-section in a subsequent pregnancy, ectopic pregnancy in the scar, miscarriage, potential rupture of the uterus in a future pregnancy, and secondary infertility. Secondary infertility is the inability to become pregnancy again after already having delivered one child.

## Symptoms

- Pelvic pain
- Abnormal bleeding
- Vaginal discharge
- Painful periods
- Infertility

Women having a difficult time becoming pregnancy following a C-section should seek medical consultation to evaluate the possibility of uterine scarring as the cause. Accumulated blood in the niche can degrade cervical mucus and sperm function, as well as inhibit sperm transport.

## Diagnosis

Women suspected of having a Cesarean scar defect should undergo diagnosis testing. The optimal time to perform tests is after a woman's menstrual cycle as blood has likely collected in the niche, highlighting it on imaging.

Transvaginal ultrasonography involves an ultrasound probe inserted through the vagina to examine the uterus. Usually the uterine scar defect can be easily seen with the transvaginal ultrasound.

A saline infusion sonohysterography or hysterosonography may also be used and is more accurate in defining the degree or severity of the defect. The physician injects a saline solution into the uterus in conjunction with the vaginal ultrasound. The saline fills the uterine cavity and the Cesarean scar defect, providing a delineation of its depth and width.

Magnetic resonance imaging (MRI), 3-D ultrasonography, and hysteroscopy (a tube with a camera inserted in the uterus through the vagina) are additional imaging modalities that can aid in diagnosis.

## Treatment

Management is dictated by the patient's symptoms and future fertility plans. For patients who want a non-invasive approach, hormonal therapy can be tried, but is generally not as effective as surgical treatments.

To promote fertility and decrease symptoms, the defect must be repaired.

Laparoscopic excision is recommended for women who desire future fertility. It is a minimally invasive surgery to remove the Cesarean scar defect through the use of video laparoscopy, a thin tube with a lighted camera that provides a magnified view. The Cesarean scar tissue is removed leaving behind healthy tissue margins, and uterine muscle is sewn back together. With the new incision and repair, the defect is markedly reduced or closed.

A major benefit of video laparoscopic excision is about 75% of patients become pregnant following niche repair. Excision also restores the integrity of the affected uterine muscle tissue, thereby reducing the chance of uterine rupture during a subsequent pregnancy. It is recommended to wait at least 3 months before attempting conception.

General benefits of video laparoscopic surgery with or without robotic assistance include less scarring, bleeding, and pain as well as shorter surgery time, faster recovery, and less risk of complications. A hysteroscopic treatment has been reported to have a 92% to 100% success rate for resolving symptoms of pain and bleeding in some reports but if involves endometrial ablation it should only be considered if future pregnancy is not desired. Hysteroscopic resection of the niche involves placing an instrument with a camera through the cervix where the defect is visualized from the endocervical canal. Using an energy source, the defect and endometrial tissue within are resected and drained. Postoperatively, the patient is followed for symptom resolution, and evaluated for defect resolution with transvaginal ultrasonography. Risks of these surgeries are low but like any surgery include blood loss, infection, damage to surrounding tissue, etc.