

Diffuse Stromal Deciduosis Mimicking Malignant Carcinomatosis During Cesarean Section

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Background	Stromal deciduosis (SD) is a rare, benign condition characterized by the growth of intra-peritoneal nodularity thought to arise from progesterone-induced metaplasia of pluripotential cells of mesenchymal origin. While it most commonly affects the uterus, fallopian tubes, and ovaries, it can appear diffusely on other serosal or peritoneal surfaces, mimicking malignant carcinomatosis. Less than 20 cases of diffuse SD have been described in the literature.
Summary	This case report presents a unique case of a 32-year-old woman who unexpectedly exhibited diffuse peritoneal nodularity during cesarean section. Initial concerns of carcinomatosis led to intraoperative biopsy, which revealed SD. This rare condition successfully mimicked malignant disease, emphasizing the importance of recognizing this differential diagnosis.
Conclusion	Stromal deciduosis is a benign process that mimics malignant carcinomatosis. This case highlights the need for pathologic confirmation when encountering unexpected peritoneal nodules, even in young women. Conservative management is appropriate once the diagnosis is established.
Key Words	stromal deciduosis; malignant carcinomatosis; cesarean section; pregnancy

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Case Description

Stromal decidualosis (SD) is a rarely described entity. First reported in surgical literature in 1964 by Kwan et al., SD is characterized by the presence of gray-white nodules or plaques typically affecting the peritoneal surfaces of the uterus, fallopian tubes, and ovaries.^{1,2} However, this condition can also manifest diffusely throughout the abdominal cavity on the serosa of viscera and on the peritoneal surfaces, with the omentum, bladder, and appendix most commonly affected.⁴ While the exact etiology remains unknown, evidence suggests that it originates from progesterone-induced metaplasia of pluripotent cells of mesenchymal origin.³

A 32-year-old G1P0 female with no significant prior medical history underwent a cesarean section for arrest of active labor. Cesarean delivery was performed without difficulty through a standard Pfannenstiel incision, but the surgical team encountered multiple, small, white nodules on the serosal surfaces of the ileum, appendix, cecum, and ovaries, raising concerns for potential carcinomatosis (Figure 1). Given the unusual presentation, a general surgery consultation was requested.

Figure 1. Intraoperative View of Stromal Deciduosis. Published with Permission



Intraoperative photo showing SD on the small bowel.

Intraoperative exploration through the previously made Pfannenstiel incision revealed no palpable masses of any of the abdominal viscera. A larger serosal nodule was selected for biopsy and underwent sharp excision. The resulting serosal defect was imbricated using absorbable sutures. The patient was closed and she was discharged from the hospital on postoperative day 3.

Final pathology was consistent with SD, with histologic features demonstrating large polygonal cells with abundant eosinophilic cytoplasm, bland nuclei, and visible nucleoli. No further interventions were recommended. She was followed by the surgical team for her three-day hospital stay after the index procedure. The patient remains healthy with no subsequent sequela, seen in outpatient follow-up approximately one year postoperatively.

Discussion

Stromal decidualosis is a rare, benign entity characterized by the development of ectopic decidual tissue on peritoneal surfaces. Fewer than 20 cases of diffuse SD have been described in the medical literature to date. Typically asymptomatic, SD is most commonly found incidentally during other surgical procedures. Although rare, some cases have presented with symptoms manifesting as acute appendicitis during pregnancy.⁶ A recent retrospective review suggests a higher prevalence of SD in pregnant women, with estimates as high as 10%.⁵ While the exact etiology of SD is unknown, the implants from SD resolve spontaneously, typically within six months postpartum,⁵ and there is no established link to any malignancy.¹⁰

Given the diffuse, nodular pattern, SD can be mistaken for malignant carcinomatosis, requiring surgical biopsy for pathological diagnosis.⁴ Unfortunately, some cases have been reported where aggressive surgical interventions, such as bilateral salpingo-oophorectomy with omental and peritoneal biopsies for presumed metastatic ovarian cancer were performed, only to reveal SD on final pathology.⁷

The primary risks that have been described in the literature related to SD have manifested in pregnancy, though most patients are asymptomatic. These complications include abdominal pain, acute appendicitis leukocytosis, and, even more rarely, spontaneous intraperitoneal hemorrhage.

Given the risk of misdiagnosis and potential for surgical morbidity due to clinical mimicry of malignant carcinomatosis, surgeons should maintain a high index of suspicion for SD and ensure the diagnosis of carcinomatosis.

sis before pursuing aggressive surgical interventions. The case presented here demonstrates a safe and conservative approach to managing SD. A minimally invasive biopsy was performed to establish the diagnosis, followed by close clinical follow-up without additional imaging or invasive procedures, given its benign nature and lack of malignant potential.¹⁰

Conclusion

Stromal decidualosis is a benign condition that can closely mimic the appearance of malignant carcinomatosis. This case report illustrates a patient with diffuse SD incidentally discovered during cesarean section. This presentation highlights the importance of considering this diagnosis in cases of unexplained peritoneal nodularity and opting for conservative management with biopsy prior to more aggressive surgical interventions.

Lessons Learned

Diffuse SD is a pregnancy-associated benign condition with no increased risk of malignant transformation. Its ability to mimic malignant disease underscores the need for careful evaluation and biopsy of any suspicious peritoneal nodules. Conservative management is appropriate once the diagnosis is confirmed.

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