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Ectopic decidua of the greater omentum: a case report

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ABSTRACT

Ectopic decidua is defined as extrauterine deposits of decidual stromal cells. It occurs in 85-100% of pregnancies. Focal sites can be present in various locations, yet a peritoneal location is rare. A 24- year- old woman underwent a cesarean section in 39th week of her first pregnancy, during which adhesions of the omentum to the fundus, entire left side of the uterus, and a part of the right front abdominal wall were found. An operative specimen was taken for a pathohistological analysis under the assumption of being fibrous adhesive tissue. The analysis revealed ectopic decidual tissue composed of large, polygonal cells with eosinophilic cytoplasm, and large nuclei with conspicuous nucleoli infiltrated with mature fatty cells and lymphocytes. Strong staining for vimentin was observed in the decidual cell cytoplasm and for a progesterone- receptor in the cell nuclei, medium staining was detected for S-100, and negative staining for CK 5/6, HMB-45, desmin, smooth muscle actin, estrogen and androgen- receptors. We present this case in order to educate clinicians and pathologists about the phenomenon of ectopic deciduosis. Although it can exist as asymptomatic condition, we point out the importance of considering this condition since it can result in serious pathology, like intraperitoneal hemorrhage and labour obstruction, if remains unrecognized. Another pitfall is possible confusion of this entity with other conditions. A resemblance to adhesions of the omentum and malignant neoplastic lesions, like squamous cell and metastatic carcinoma, metastatic melanoma, malignant decidual mesothelioma, metastatic mucin -producing adenocarcinoma, can be deceiving. These obstacles may present a pitfall to clinicians and pathologists, with a negative impact on patient treatment and outcome.

Keywords: Ectopic; decidua; greater omentum

INTRODUCTION

Ectopic decidua has been described as a physiological phenomenon of pregnancy which is a result of subserous stromal metaplasia due to progesterone activity (1). However, the absence of pregnancy does not exclude the presence of decidual tissue in unusual locations (2). Focal sites may be found submesothelially over the abdominal cavity, in the lamina propria of the uterine tubes, cervix, and uterus. Other observations have been made in the ovary, omentum, appendix, lungs, skin, pleura, and lymph nodes (2-4). Still, peritoneal localization is rare (5,6). We present a case of ectopic decidua in the greater omentum to point out the importance of recognizing this condition, since unrecognized ectopic decidua can result in serious consequences for the patient.

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CASE REPORT

A 24-year- old nulliparous woman was admitted to the gynecological department in 39th week of gestation. According to the presence of uterine anomalies (uterus bicollis et bicornis), vaginal abnormalities (septum vaginae), breech presentation of the fetus, and oligohydramnios this pregnancy was treated as pathological and therefore regularly monitored. The medical history showed no abnormalities in the patient's menstrual cycle (28/5). She was hospitalized at the age of 19 because of acute pain in the left lower quadrant of the abdomen, and underwent a surgical procedure which showed the pain was caused by a hemorrhagic ovarian cyst. Consequently, resection of her left ovary was performed. During present hospitalization, considering breech fetal presentation, oligohydramnios, terminal pregnancy, and threatening fetal asphyxia, the patient underwent a cesarean section 14 days after the hospital admission. During the procedure, the adhesions of the omentum to the fundus and to the entire left side of the uterus, as well as to a part of the right front abdominal wall, were observed. The tissue was sent for pathohistological examination under the assumption of being fibrous adhesions formed after the ovarian resection. The cesarean section was successfully performed. The liveborn male infant, who was 3650 g in weight, 49 cm in length, with Apgar score 6/8, was admitted to the neonatal care unit. The patient and baby did well postoperatively and were discharged home 8 days postpartum.

The operative specimen consisted of small pieces of the greater omentum tissue, measuring 25 x 18 x 1 cm. The tissue was yellowish, soft, with smoothly granulated surface. The tissue samples were cut und underwent routine hematoxylin & eosin and immunohistochemical staining. Immunohistochemistry was performed using following antibodies: Smooth muscle actin (monoclonal, DAKO), androgen- receptor (monoclonal, DAKO), cytokeratine 5/6 (monoclonal, DAKO), desmin (monoclonal, DAKO), estrogen- receptor alpha (monoclonal-DAKO), HMB45 (monoclonal, DAKO), progesterone- receptor (monoclonal, DAKO), S- 100 protein (polyclonal, DAKO), and vimentin (monoclonal, DAKO). The histological analysis of the received tissue revealed ectopic decidual deposits infiltrated with mature fatty cells and inflammatory cells, mostly lymphocytes. The deposits comprised of separated, but also aggregated, large, polygonal cells with eosinophilic cytoplasm and large, round to oval nuclei with a single conspicuous nucleolus. Hyperemic blood vessels were also observed. (Figure 1A). Immunohistochemically, strong staining for the vimentin was observed in the decidual cell cytoplasm (Figure 1B). There was also medium staining for the S-100 (Figure 1C), but negative staining for the CK 5/6, HMB- 45, desmin, and smooth muscle actin. The decidual cell nuclei showed strong immunohistochemical staining for the progesterone- receptor (Figure 1D), but negative staining for the estrogen and androgen- receptors. Decidual cells are supposed to show vimentin and progesteron- receptor positivity with possible focal positivity for desmin and smooth muscle actin, while the positive reaction for CK 5/6 supports deciduoid mesothelioma (5). Positivity for S-100 and HMB- 45 favors the diagnosis of metastatic melanoma (5).

DISCUSSION

Ectopic decidua is considered to be a pregnancy- related physiological phenomenon (7). It usually occurs in pregnant females, yet its development has been occasionally noted in non-pregnant women (2). It is defined as decidual deposits outside

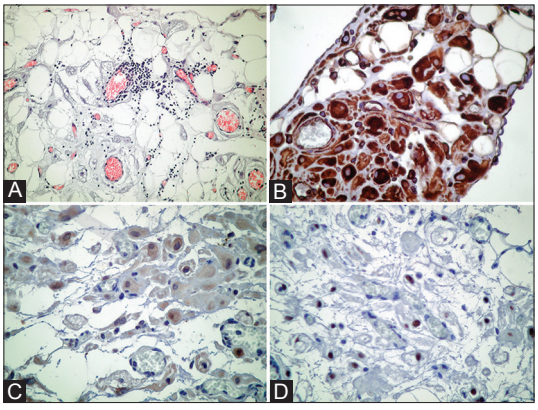

FIGURE 1. (A) Decidual deposits infiltrated with mature fatty cells, inflammatory cells, and hyperemic blood vessels, hemalaun & eosin, 40x. (B) Immunohistochemical staining for vimentin in decidual cell cytoplasm, vimentin, 40x. (C) Immunohistochemical staining for S-100, S-100, 40x. (D) Immunohistochemical staining for progesterone, progesterone, 40x.

the endometrium or as extrauterine formation of decidual stromal cells. The initial description of this subject was given by Walker in 1864., during examination of 2 abdominal pregnancies (8). The occurrence of ectopic deciduosis has been observed in many areas of the body. A peritoneal localization is less frequent and usually an asymptomatic incidental finding, observed during a cesarean section or when performing pelvic surgery (1,9). Due to its rare appearance, we were not able to find specific data on a peritoneal ectopic decidua incidence. In addition to being asymptomatic, deciduosis can be presented through various pathologic conditions such as pseudo- acute appendicitis, hemoperitoneum, cutaneous swelling, pulmonary pathology, anemia, ileus, and an abnormal appearance of the cervix (9,10). In our case, the peritoneal deciduosis was difficult to discover because it was asymptomatic, but it should had been considered as differential diagnosis since it could had lead to negative outcome for the patient and baby (5,9,11). After histological diagnosis, most lesions do not require therapeutic intervention and spontaneously involute within the first 4-6 weeks post partum. However, in some cases, incomplete involution of ectopic decidual changes results in late bleeding (10).

The etiology of ectopic decidua remains unclear. One of the possible modes of the pathogenesis is the entrapment or failure of coelomic remnants migration during the embryonic development. This leads to estrogen- and progesteron- induced subcoelomic mesenchymal pluripotent cell metaplasia during pregnancy. This metaplasia is usually temporary and reverts back to normal once the hormonal influence disappears. The other possible mechanism is lymphatic spread or "benign metastasis". The location of decidual deposits within the subcapsular or paratrabecular sinuses, and their presence within lymphatic space, supports the credibility of this theory (8). Besides these, another way of the pathogenesis is a decidual change of the endometriotic sites in pregnant women (8,10). This is supported by the similarity in the distribution of endometriosis and ectopic decidua, although most cases report a stromal decidual change without the histologic evidence of the presence of glands. The absence of glands is considered to be the consequence of stromal overproliferation, repression of glands, and final prevalence of decidual cells (7). Also, progesterone, which is used to suppress endometriosis, appears to induce the ectopic decidual reaction (10). In the absence of pregnancy, the decidual reaction has been attributed to the stimulation of appropriate cells by progesterone or progesterone- like substances secreted from the adrenal cortex, corpus luteum, or exogenous progesterone (9,12). Extra uterine deciduosis is histologically benign condition, but its importance lies in possible confusion with other clinical entities, during macroscopic examination (2). It can resemble adhesions of the omentum and malignant neoplastic lesions such as squamous cell carcinoma (2,13), metastatic carcinoma, metastatic melanoma, malignant decidual mesothelioma (2,11), metastatic mucin -producing adenocarcinoma, epithelioid leiomyosarcoma, and placental site trophoblastic tumor (2,14). Ectopic decidua of the omentum can macroscopically present as grey- white nodules or plaques which can resemble a malignant tumor. Decidual cells appear as large cells with bland nuclei and abundant cytoplasm (15). Microscopic findings of hemorrhagic necrosis, nuclear pleomorphism, and hyperchromasia of decidual cells may be confused for a malignant tumor such as malignant deciduoid mesothelioma (5). Immunohistochemical diffuse positivity for cytokeratin MNF 116, HBME-1, and calretinin favors this malignancy (15). Malignant melanoma can also be confused with ectopic decidua, yet negative immunohistochemical reactions on HMB45, S-100, and Melan- A, and positive reactions for mCEA and CD10, exclude the melanoma (14). Epithelioid mesothelioma is a malignant tumor prone to metastasis, composed of cells characterized by greater amount of eosinophilic cytoplasm, nuclear polymorphism, and positivity for SMA, desmin, and HHF-35 (14). A placental site trophoblastic tumor is malignancy composed of trophoblastic cells usually found 34 weeks after gestation, characterized by large cells with eosinophilic cytoplasm with uniform nuclei and positivity for inhibin and, human placental lactogen, and negativity for human chorionic gonadotropin (14). Characteristic findings of squamous cell carcinoma, such as dyskeratotic cells, keratin pearls, mitoses, and a desmoplastic reaction with immunohistochemical positivity for CAM 5.2 or AE1/AE3,

distinguish it from deciduosis (1). It is important to remember that peritoneal deciduosis is supported by lack of mitosis in decidual cells as well as immunohistochemical vimentin and, progesteron positivity, and keratin, calretinin, and HMBE-1 negativity (16).

CONCLUSION

Although peritoneal deciduosis represents a rare entity, it is important to consider this condition, especially in pregnant women, in order to prevent possible serious consequences. In addition, it is very important to distinguish it from other conditions, such as malignant neoplasms, since making the correct diagnosis has a strong influence on choosing optimal treatment and therefore influence the end result.

CONFLICT OF INTEREST

The authors declare no conflict of interest.

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