Available online at www.medicinescience.org

CASE REPORT

Medicine Science International Medical Journal

Medicine Science 2020;9(4):1093-6

Ectopic omental deciduosis associated with pregnancy

Elif Akcay, Mumine Gormez, Akgul Arici, Resit Dogan Koseoglu,

Tokat Gaziosmanpasa University, Faculty of Medicine, Department of Medical Pathology, Tokat, Turkey

Received 02 October 2020; Accepted 21 October 2020
Available online 30.10.2020 with doi: 10.5455/medscience.2020.10.205

Abstract

Ectopic decidua (deciduosis) is most commonly localized in the ovary, uterus, cervix, and tuba uterina. It can rarely be observed within the peritoneum in pregnant women during laparotomy. More rarely, it can be localized in the omentum, appendix, liver, and spleen. It is usually incidental. In a 23-year-old female patient, a biopsy was taken from the thickening in a 4x3 cm area on the omentum during cesarean section. Microscopic evaluation revealed decidualized cells the majority of which had large polygonal eosinophilic cytoplasm and a few of which had vacuolated cytoplasm, that formed small nodules in the adipose tissue. Immunohistochemically, the decidualized cells were positive for vimentin, progesterone receptor antibody and negative for S-100, HMB-45, calretinin, pancytokeratin. The case was reported as ectopic omental deciduosis. Although ectopic omental deciduosis is a benign lesion, it may be confused with malignant tumors. Therefore, differential diagnosis should be made carefully.

Keywords: Omental deciduosis, ectopic decidua, pregnancy, progesterone

Introduction

Normal decidua occurs as a result of transformation of endometrial stromal cells during pregnancy. The reason for the transformation is the presence of ovarian and placental hormones, mainly of progesterone [1].

Decidual cell development outside the endometrium is defined as ectopic decidua or deciduosis [2]. Ectopic decidua is a benign lesion characterized by decidualization of submesothelial mesenchymal cells [3,4]. These lesions are thought to develop as a result of metaplasia of submesothelial mesenchymal cells by the effect of progesterone hormone [4].

Ectopic decidua is more common in pregnant women, but may rarely be seen in non-pregnant women and postmenopausal women due to the effects of progesterone or progesterone-like substances released from the corpus luteum or adrenal cortex [1,4]. It may even occur as a result of exogenous progesterone [5].

***Coresponding Author:** Mumine Gormez, Tokat Gaziosmanpasa University, Faculty of Medicine, Department of Medical Pathology, Tokat, Turkey
E-mail: muminegormez@hotmail.com

Ectopic decidua is most commonly encountered in the ovary, cervix, uterine serosa, and fallopian tube [4,6]. Peritoneal localization is rare [4]. More rarely, it can be seen in the omentum and other abdominal organs [6]. It is usually asymptomatic but may rarely cause symptoms. It may cause hemorrhage, abdominal pain or symptoms of irritable bowel syndrome [4,5]. When localized in the renal pelvis, it can lead to hydronephrosis [7]. The patient may present with acute appendicitis clinically [2]. Even life-threatening situations can be seen (mechanical ileus, hemoperitoneum, etc.) [5,6].

Ectopic decidua is most commonly detected incidentally during cesarean section in pregnant women [3]. It can also be detected incidentally during elective tubal ligation or appendectomy [6]. Macroscopically, it can be observed as focal or diffuse, white-yellow-brown nodules on the peritoneal surfaces [3,8]. When it occurs in the peritoneum or omentum, it may mimic carcinomatosis or granulomas [4]. Therefore, it is important to distinguish it from especially malignant conditions that mimic it. Primary or metastatic malignant tumors are included in the differential diagnosis. We aim to emphasize the importance of differentiating ectopic decidua from malignant tumors that mimic it, because it is rarely encountered in the omentum and it can be confused with malignant tumors, although it is a benign lesion. Here, we present a case of omental deciduosis discovered incidentally in a pregnant woman during cesarean section.

Case Report

Clinical presentation

A 23-year-old pregnant woman, G1P0, underwent cesarean section for delivery due to the indication of oligohydramnios and head-pelvis incompatibility at 38 weeks 4 days of gestation. Delivery was achieved without any complications. Live birth occurred. The patient had a history of pregnancy-related hypothyroidism, hereditary angioedema, and appendectomy. During the cesarean section, the uterus, bilateral fallopian tubes, and ovaries were in normal appearance, but the thickening in a 4x3 cm area was noticed on the omentum, a biopsy was taken from it and the specimen was sent to our department for histopathological examination.

Gross and histopathological findings

The biopsy material consisted of one piece of yellow-brown colored adipose tissue, 2.5x2x0.5 cm in size. It showed greyish nodularity varying from 2 to 4 mm nodules. Microscopic evaluation revealed decidualized cells the majority of which had large polygonal eosinophilic cytoplasm and a few of which had vacuolated cytoplasm, that formed small nodules in the adipose tissue. The decidualized cells had prominent cytoplasmic borders and centrally placed nuclei containing small nucleoli. A mild chronic inflammatory cell infiltration was observed in the adipose tissue and decidual cell nodules. There was no atypia or mitosis (Figure 1). In the immunohistochemical analysis performed for definitive and differential diagnosis, cytoplasmic positive staining for vimentin and strong nuclear positive staining for progesterone receptor antibody (PR) (Figure 2A) were detected in decidualized cells. The decidualized cells were negative for S-100, HMB-45 (Figure 2B), calretinin (Figure 3A), and pancytokeratin (pan-CK) (Figure 3B). The case was reported as ectopic omental deciduosis on the basis of findings.

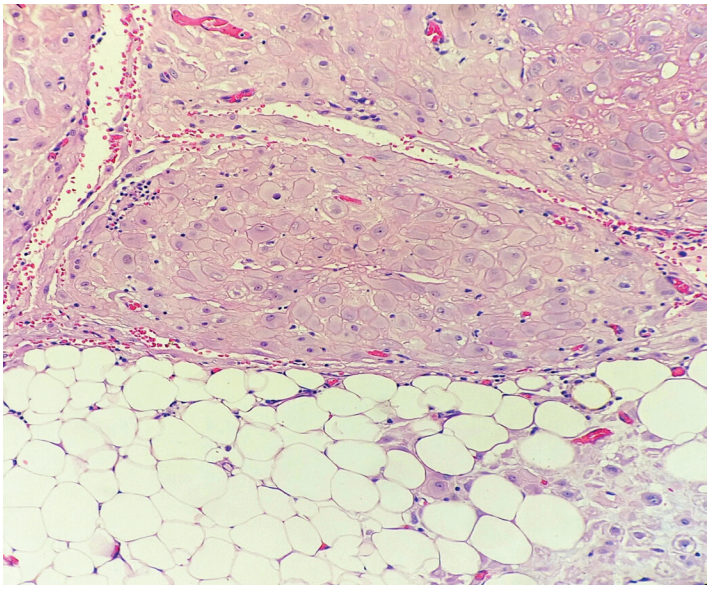

Figure 1. Nodule formed by the decidual cells that have prominent cell borders and large eosinophilic cytoplasm in adipose tissue. No atypia and no mitosis (H&E, x200)

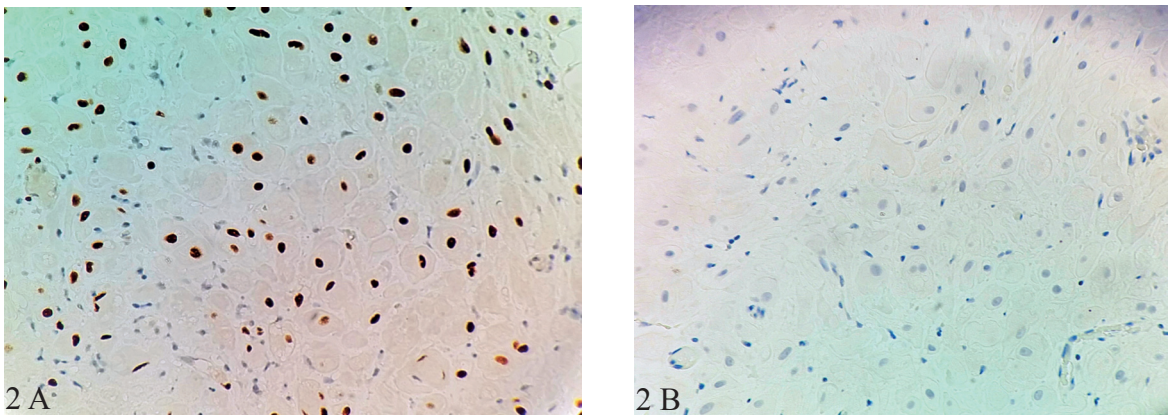

Figure 2. A: PR nuclear positivity in the decidual cells (x400). B: HMB-45 negativity in the decidual cells (x400)

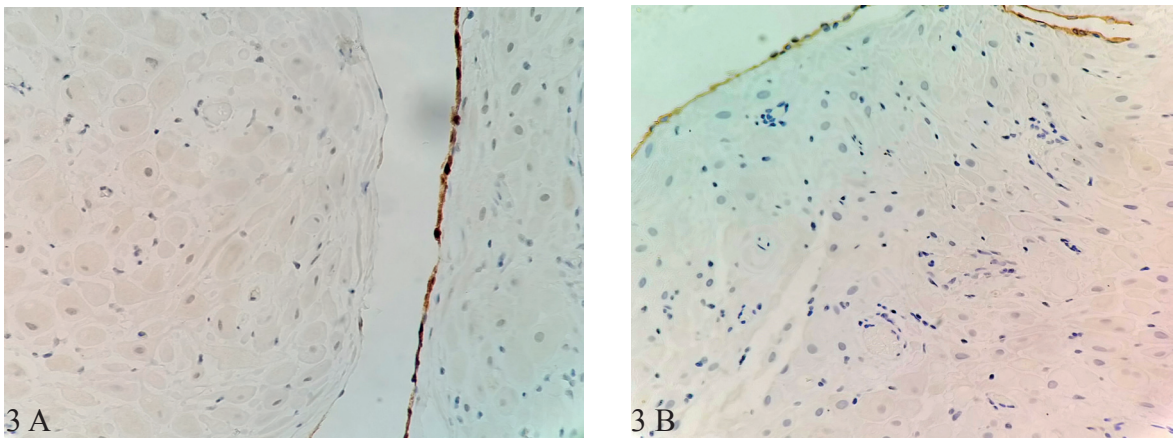

Figure 3. A: Calretinin negativity in the decidual cells (x400). B: Pan-CK negativity in the decidual cells (x400)

Discussion

Ectopic decidua is most commonly localized in the ovary, cervix, uterine serosa, and tuba uterina. It is rarely seen in the peritoneum. Less frequently, it is orginated from the omentum, appendix, diaphragm, liver, spleen, renal pelvis, and paraaortic-pelvic lymph nodes [4,6,9].

Zaytsev et al. [10] reported a case series of 10 pregnant female patients. Peritoneal submesothelial tissue biopsies were obtained from different sites within the abdominal cavity of the patients during the surgical procedure. The presence of decidualization was observed on microscopic examination of the biopsy samples of these patients who did not have a history of endometriosis. They concluded that ectopic decidua associated with serosal surfaces is a reactive, physiological phenomenon and is a clinicopathological process separate from endometriosis. Zaystev et al. [10] proposed two possible theories regarding the mechanism by which ectopic decidua occurs. The first, the most widely accepted theory, is that the superficial coelomic stromal cells undergo metaplasia by the effect of progesterone, the other is that the decidual cells are already distributed in the peritoneum. In short, the mechanism of ectopic decidua development is not yet fully understood.

It is thought that the development of ectopic decidua may also be caused by the decidual transformation of the pre-existing endometriosis focus by the effect of progesterone [11]. This entity has some features that overlap with the ectopic decidua. The presence of clinical symptoms at the beginning of the menstrual cycle, a history of pre-existing endometriosis and the presence of endometriosis in other areas support endometriosis. On microscopic examination, the diffuse distribution in the peritoneum, old and new hemorrhagic areas, stromal edema, the Arias-Stella reaction, fibrosis with atrophy of the endometrial glands and "pseudoxanthoma" cells support decidualized endometriosis seen during pregnancy [6]. Our case had no history of endometriosis or endometriosis symptoms. The microscopic features described above were not observed.

The macroscopic appearance of ectopic decidua on omentum is variable. It can be focal or diffuse. Diffuse lesions can be observed on the peritoneal surface as nodules. When it is diffuse, it can mimic tuberculosis or metastatic tumors [6].

Ectopic decidua can have nodular architecture on microscopic examination [2]. Decidual cells have properties similar to decidualized endometrial stroma. Nodules of large polygonal cells containing abundant eosinophilic cytoplasm with prominent cytoplasmic borders are observed. The cells have centrally placed round nuclei containing small nucleoli. There is no mitosis [6,11]. As a result of degeneration, cytoplasmic vacuolization, physaliphorous-like appearance, signet ring cell-like appearance, lipoblast-like appearance and stromal myxoid changes may develop [2,6]. When nuclear pleomorphism, nuclear hyperchromasia and hemorrhagic necrosis are observed in decidual cells, it may be mistaken for malignant conditions [11]. Our case did not have atypia, mitosis, and features secondary to degeneration.

Immunohistochemically, decidual cells in ectopic decidua are stained positive for PR and vimentin. The cells may be focal positive for SMA and desmin [12]. Although the cells is typically negative for pan-CK, a few of the cells can sometimes be positive (focal positive) for pan-CK [2]. The differential diagnosis includes signet ring cell carcinomatosis, deciduoid malignant mesothelioma, epithelioid leiomyosarcoma, rhabdomyosarcoma, malignant melanoma, placental site trophoblastic tumor, epithelioid trophoblastic tumor and granulomatous diseases [3,4]. In differential diagnosis, S-100 and HMB-45 positivity are in favor of malignant melanoma. Deciduoid mesothelioma is positive for CK5/6 and calretinin [12]. Signet ring cell carcinomatosis is typically positive for broad spectrum cytokeratins. Epithelioid leiomyosarcoma is typically positive for smooth muscle markers such as SMA, desmin, and HHF-35 [3]. Placental site trophoblastic tumor shows positive staining for Mel-CAM (CD146), hPL, and pan-CK. Epithelioid trophoblastic tumor shows positive staining for p63, pan-CK, inhibin [13]. In the differential diagnosis, the absence of clinical signs of malignancy is in favor of ectopic decidua. In our case, staining for pan-CK, calretinin, HMB-45 and S100 was not observed. There were no clinical signs of malignancy.

Ectopic decidua is a self-limited, transient, benign lesion [3,4]. No further treatment is usually required. It is reported that peritoneal deciduosis spontaneously resolves within 4 to 6 weeks after delivery [5].

This study was presented as a case report in 2. International TURAZ Forensic Sciences, Forensic Medicine and Pathology Congress, 1-4 September 2018, Istanbul, Turkey.

Conflict of interests
The authors declare that they have no competing interests.

Patient informed consent
Written consent form was obtained from the patient.

Financial Disclosure
The authors don't need financial support.

References

1. Büttner A, Bässler R, Theele Ch. Pregnancy-associated ectopic decidua (deciduosis) of the greater omentum. An analysis of 60 biopsies with cases of fibrosing deciduosis and leiomyomatosis peritonealis disseminata. Path Res Pract. 1993;189:352-9.

2. Balta A, Lubgane M, Orube I, et al. Deciduosis of the appendix manifesting as acute abdomen in pregnancy. Acta Chirurgica Latviensis. 2014;14:43-5.

3. Adhikari Lj, Shen R. Florid diffuse peritoneal deciduosis mimicking carcinomatosis in a primigravida patient: a case report and review of the literatüre. Int J Clin Exp Pathol. 2013;6:2615-9.

4. Khajuria R, Sharma S, Singh K, et al. Peritoneal deciduosis: a case report. JK Science. 2015;17:102-3.

5. Salehgargari S, Sahebdel B, Zare A, et al. Ectopic decidual reaction mimicking irritable bowel syndrome: a case report. Acta Medica Iranica. 2014;52:88-90.

6. Bolat F, Canpolat T, Tarim E. Pregnancy-related peritoneal ectopic decidua (deciduosis): morphological and clinical evaluation. Turk Patoloji Derg. 2012;28:56-60.

7. Bettinger HF. Ectopic decidua in the renal pelvis. J Path Bact. 1947;59:686-7.

8. Daya D, Cheung ANY, Khunamornpong S, Kim KR, Prat J, Young RH. Tumours of peritoneum (Chapter 2). In: Kurman RJ, Carcangiu ML, Herrington CS, Young RH, eds, WHO Classification of Tumours of Female Reproductive Organs. Lyon: WHO Press. 2014;87-101.

9. Ashraf M, Boyd CB, Beresford WA. Ectopic decidual cell reaction in para-aortic and pelvic lymph nodes in the presence of cervical squamous cell carcinoma during pregnancy. J Surg Oncol. 1984;26:6-8.

10. Zaytsev P, Taxy JB. Pregnancy-associated ectopic decidua. Am J Surg Pathol. 1987;11:526-30.

11. Erzurumluoğlu N, Sargan A, Özekinci S, et al. Florid diffuse peritoneal deciduosis mimicking peritoneal carcinomatosis: a case report. Med Bull Haseki. 2016;54:120-3.

12. Erdem H, Yaşar E. Ektopik desiduozis; nadir yerleşimli. DÜ Sağlık Bil Enst Derg. 2016;6:71-3.

13. Hui P. Gestational trophoblastic tumors: a timely review of diagnostic pathology. Arch Pathol Lab Med. 2019;143:65-74.