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**Pathology**

# Peritoneal Ectopic Decidual Reaction Detected in Tubal Ligation Specimen: Histopathological Insights

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**Abstract** **Case Report**

Ectopic decidua is the presence of decidual tissue outside the uterus. Pregnancy related peritoneal ectopic decidual reaction develops due to the effect of progesterone. Decidual reaction is a benign condition and can regress spontaneously in the postpartum period. Peritoneal nodules grossly mimic metastatic disease and granulomas. It is important to diagnose these lesions as they do not require therapeutic intervention. Histopathological examination of biopsies sampled during cesarean sections, tubal ligation etc. is necessary for the accurate diagnosis of this condition. We report a case of peritoneal ectopic decidual reaction and discuss its histopathological features and differential diagnosis.

**Keywords:** Ectopic Decidua, Deciduosis, Fallopian Tube, Peritoneal Nodules.



## INTRODUCTION

Ectopic decidua or deciduosis is a condition first defined by Walker in 1887 and refers to decidual cell groups outside the endometrium [1]. This benign lesion is commonly encountered in pregnant women and mostly regress spontaneously during postpartum period [2]. It is commonly seen in the ovaries, cervix, uterine serosa and the lamina propria of the fallopian tubes; however, peritoneum is rarely involved [1]. Ectopic decidua has been detected in biopsies taken during caesarean sections, elective tubal ligations, appendicectomy and in tubal pregnancies [3]. It is important to diagnose ectopic decidua as it can mimic peritoneal carcinomatosis or tubercles grossly and deciduoid mesothelioma microscopically [4].

## CASE

A 41-year-old female, G2P1L1, admitted with pregnancy induced hypertension underwent caesarean section with tubal ligation at 38 weeks of gestation. Intraoperatively hyperemic nodules and patches over anterior surface of uterus, left fallopian tube and omentum were noted along with dense adhesions. Bilateral fallopian tubes were sent for histopathological examination. Healthy baby was delivered and postpartum period was uneventful. Patient did not have history of endometriosis.

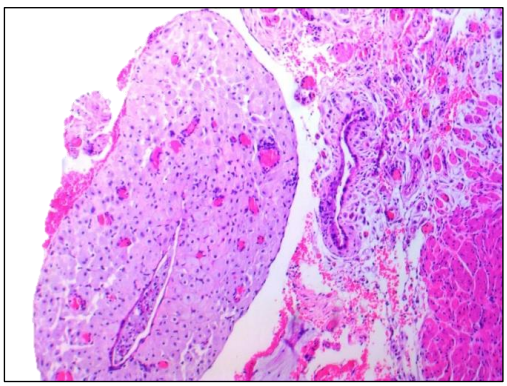

**Figure 1: Nests of polygonal eosinophilic decidual cells in the sub mesothelial area of fallopian tube. (H&E, 100x)**

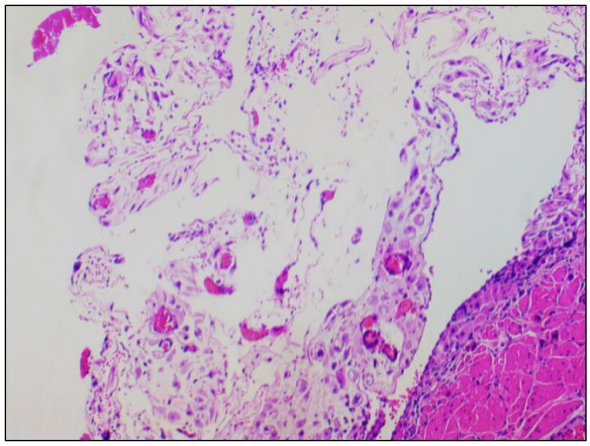

**Figure 2: Decidual cells with stromal myxoid changes. (H&E, 100x)**

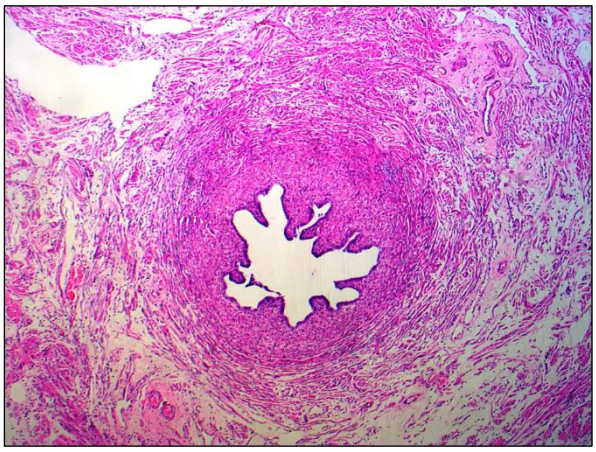

**Figure 3: Lumen of the fallopian tube. Note the absence of decidual cells below the plicae. (H&E, 40x)**

On histopathology sections, the segments of right and left fallopian tubes showed lumen on cut section. Left fallopian tube showed a 0.5mm hyperemic nodule over serosal surface. Microscopy of the left fallopian tube showed sub mesothelial decidual cells in nodules and plaques (Figure 1,2). These cells were large with abundant granular cytoplasm, nucleus showed open chromatin and inconspicuous nucleoli. There was no nuclear pleomorphism, hyperchromasia, or mitotic activity. There was no inflammation or granuloma. Lumen of both fallopian tubes did not show decidualization (Figure 3). Case was diagnosed as ectopic decidua.

## DISCUSSION

Ectopic decidual reaction is a physiological phenomenon which occurs due to the effect of progesterone hormone in pregnant women. It can occur in non-pregnant women due to release of progesterone or progesterone like substance from corpus luteum or adrenal cortex [2]. It is an incidental finding which is asymptomatic in most of the cases. Few patients may present with the symptoms of abdominal pain, hemorrhage or irritable bowel syndrome [2].

The pathogenesis of ectopic decidual reactions is unclear [1]. Zaystev *et al*., [5], have suggested two theories for the origin of ectopic decidua. One theory suggests specialized sensitivity of the superficial coelomic stroma to progesterone which is physiological and reverses after the hormonal influence disappears. Second theory claims that decidual cells are diffusely distributed in the peritoneum. Distinction of ectopic decidual reaction from decidualized endometriosis is important as endometriotic foci can resemble ectopic decidua during pregnancy [1]. Previous history of endometriosis can be available in such cases. Microscopically, decidualized endometriosis in pregnancy will show presence of additional findings such as areas of hemorrhage, Arias Stella reaction, fibrosis and atrophic endometrial glands apart from decidual cells [2]. Our case neither had history of endometriosis nor such histological features.

Ectopic deciduosis has been classified into focal deciduosis and diffuse deciduosis [4]. Florid lesions appear as multiple, grey white, focally hemorrhagic nodules or plaques on peritoneal surfaces and can be confused with metastatic tumour and tuberculosis.

Microscopically, clusters of decidual cells are seen in ectopic decidual reaction similar to those seen in endometrium under the influence of progesterone. The cells are large and show round nuclei with prominent

nucleoli and abundant eosinophilic cytoplasm. Focal hemorrhagic necrosis and varying degrees of nuclear pleomorphism and hyperchromasia of the decidual cells can lead to misdiagnosis of deciduoid malignant mesothelioma. Other differential diagnoses include metastatic signet ring cell carcinoma and metastatic melanoma [4]. However, the bland appearance, lack of mitotic activity and history progesterone influence should lead to correct diagnosis of ectopic decidua. Immunohistochemically, the decidual cells show cytoplasmic positive staining for Vimentin and nuclear positive staining for PR [2]. Deciduosis is known to regresses within the 4-6 weeks on removal of progesterone effect. It requires no therapeutic intervention and disappears in the postpartum period [1].

This case report emphasizes the importance and awareness of ectopic decidual reaction in pregnant females. Intraoperative biopsy with histopathological examination can easily differentiate ectopic decidua from tubercles or metastatic tumor deposits.

## CONCLUSION

Pregnancy related ectopic decidual reaction is a benign lesion and resolves without any treatment in the postpartum period and should therefore be kept in mind for the differential diagnosis for the cases presenting with nodules and adhesions on the peritoneum. Histopathological diagnosis with proper clinical details is the key to accurate diagnosis of this condition.

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