

**Decidual Cast: A Rare Case of Abnormal Decidualisation**

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**Citation this Article:** Dr. Radha Waichal, Dr Sadhana Mahore, Dr. Sabiha Maimoon, “Decidual Cast: A Rare Case Of Abnormal Decidualisation”, IJMSIR- November - 2020, Vol – 5, Issue - 6, P. No. 95 – 98.

**Type of Publication:** Case Report

**Conflicts of Interest:** Nil

**Abstract**

Decidualization of the human endometrium, which involves a dramatic morphological and functional differentiation of human endometria stromal cells (ESCs), is essential for the establishment of a successful pregnancy

The lining of the pregnant uterus is called the decidua. The normal lining of the uterus, with the effect of progesterone, can become decidualized .(1)

A decidual cast occurs when the lining of the endometrium is sloughed off in one piece, forming a cast of uterine cavity.

It is commonly associated with ectopic pregnancies & incomplete abortion . It also may be associated with non-pregnant state with use of progesterone, depot medroxyprogesterone acetate(DMPA), rarely with oral contraceptive pills.(2)

The theory of hyper-progesteronism has been hypothesized and cases have been observed of decidual casts in the patients on prolong progesterone pills.

Other theories proposed include an overall increase in the secretion of progesterone and estrogen,causing subsequent thickening of the endometrium and resulting in complete desegregation with expulsion of tissue.(3)

There is also excessive development of the spiral arteries, with subsequent vasodilatation followed by vasoconstriction and then shedding of this overdeveloped endometrium (3)

**Case report**

41 year old female presented with complaint of bleeding PV and cramping pain since 5 days.

Her menstrual cycles were regular. She was married at the age of 15 yrs and had two children. She was advised progesterin only OC pills as contraceptive for 1 year .However she continued taking progesterin pills for 15 years on her own

On examination she was having 16 weeks size uterus. The urinary pregnancy test was negative .Her B-HCG levels was 20 mIU/ mL and her ultrasonography

revealed uterus of 16 weeks of size with thickened endometrial walls & normal ovaries

She developed bleeding and cramping pain for which she was admitted .She then subsequently passed fleshy mass per vaginum which was sent for histopathology examination.

#### **Gross finding**

A triangular soft to firm blind sac like structure which was greyish white colour showing areas of congestion and discoloration.(figure 1) . It was total measuring 12x11x2.5 cm.

**Microscopy:** H&E examination showed a partial necrotic endometrium showing sheets of loosely packed round to polygonal cells with round to oval vesicular nuclei with or without prominent nucleoli and moderate to abundant eosinophilic cytoplasm. Scattered and focal loose aggregates of neutrophilic infiltrate was also seen. (figure 2,3&4)Compressed

**Diagnosis:** The final diagnosis was given as decidual cast with mild acute inflammation

#### **Discussion**

Decidual cast is described as spontaneous sloughing of decidualised endometrium as an entire piece while retaining the shape of endometrial cavity.

Clinically the expulsion of a decidual cast can mimic a miscarriage.

Decidual cast have also been seen in non-pregnant women as a side effect with the use of human menopausal gonadotrophin (HMG), human chorionic gonadotrophin (HCG) and progestogens(4)

It occurs commonly in age of 20 to 40 years. It may or may not be associated with dysmenorrhoea .There are only 25-30 cases reported on decidual cast.(2)

Thus every women should be informed regarding side effects of long term hormone therapy including decidual cast discharge

#### **Conclusion**

Decidual cast is a rare case resulting due to hyperprogesteronism causing thickening and decidualization of endometrium .

Decidual casts and membranous dysmenorrhoea although rare should be considered in non-pregnant women on HCG, HMG, progestogens or even combined oral contraceptive pills presenting with severe cramping abdominal pain and bleeding with passage of tissue.

These casts can be misleading in undiagnosed ectopic pregnancies then it might be mistaken for intrauterine gestational sac on the ultrasound scan, so it is vital to follow up such cases with serial beta HCG levels

Progestin only OC pills or any hormonal pills should not be taken against medical advice

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#### Legends Figure



Figure 1: Gross - Sac like structure expelled from uterus

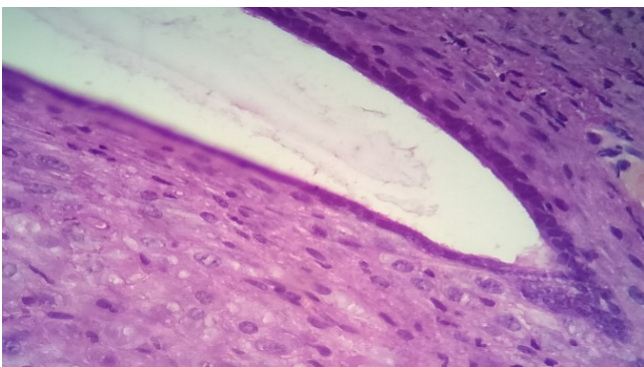


Figure 2: H&E section 10x view - Sac showing sheets of decidual cells with compressed endometrial gland

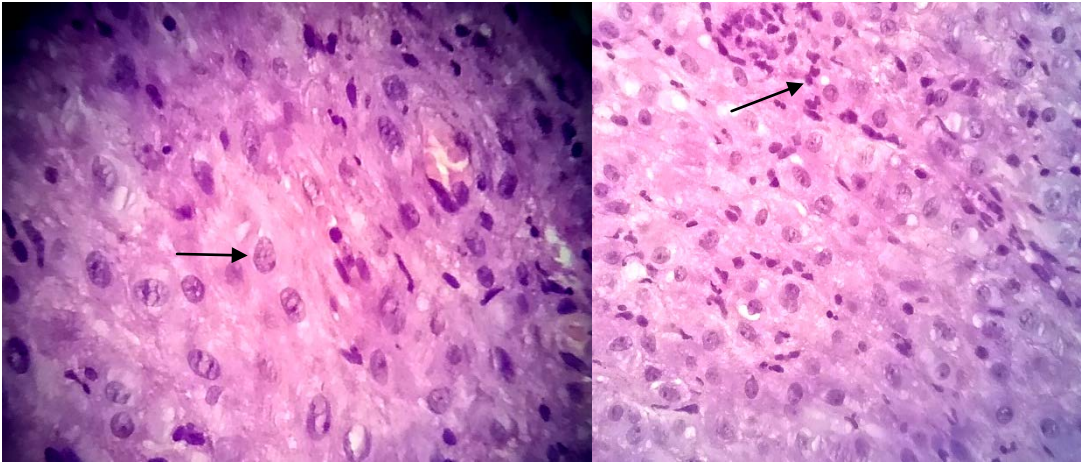


Figure 3&4: H&E section 40x view- Sheets of decidual cells with scattered and focal aggregates of neutrophilic infiltrate