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Decidual Cast "Diseases of Theories": A Case Series

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Abstract

Introduction: Decidual cast is the shedding of normal lining of the uterus. When it is affected by progesterone, normal lining of the uterus can be decidualized and shed off whole retaining the shape of the uterus giving the impression of the cast.

Case Presentation: Here we present the cases of three non-pregnant women of aged 19 to 35 years with the passage of decidual cast following the use of depot Medroxy Progesterone Acetate and oral contraceptive pills, conformed by histopathology evaluation.

Conclusion: Decidual cast is a rare finding often associated with ectopic pregnancy and abortions. It is also reported in the non-pregnant state which mostly has been attributed to the use of progesterone and oral contraceptive pills.

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Introduction

Decidua is a thick lining of the enodmetrium which forms under the influence of elevated ovarian hormones during the secretory phase of menstrual cycle. Decidual cast is sloughing of an entire enodmetrium in one single piece, retaining the shape of uterine cavity. It is a rare phenomenon often associated with ectopic pregnancy and abortions.[1,] However it has also been reported in the non-pregnant state and has been attributed to the use of progesterone, Depot Medroxy Progesteron Acetate ((DMPA), human menopausal gonadotropin, human chorionic gonadotropin, implants with progesterone delivery system and also rarely with oral contraceptive pills (OCPs).[2,3,4] The theories like the theory of hyper-progesterone and other theories proposed by Greenblatt also tries to justify the occurrence of decidual cast.[1] Membranous dysmenorrhea has also been associated with decidual cast.[1,2] Although many different theories have been proposed there has not been any definitive pathogenesis for this condition yet. Our case series is based on the expulsion of decidual cast in a non-pregnant woman associated with DMPA and Oral contraceptive pills.

Case 1

A 35 years old female, para-1, presented to our OPD with complain of passage of fleshy mass, per vagina, [Fig. 1] which she brought in a container. It was just as the shape of the uterus. Prior to this expulsion, she had complained of per vaginal spotting for four days with mild to moderate level of dysmenorrhea which subsided with the passage of the fleshy mass. The patient had previously undergone laparotomy with right salpingo-oophorectomy five weeks back, for Right endometrioma. Her post-operative days were uneventful, and she was discharged from the hospital on the fourth day. She received an intramuscular injection of DMPA on the seventh post-operative day. She had a regular cycle prior to surgery but missed it for a month and half following the surgery and DMPA. Then, she had spotting for four days with pain abdomen followed by passage of the fleshy mass. She visited our outpatient department (OPD) with the expelled specimen kept in a container the very next morning.

On examination, patient was alert with stable vitals. Rest of the examination was unremarkable. Patient's urine pregnancy test was negative. The sample she brought with her was then sent for histopathology examination (HPE) and findings were consistent with a decidual cast.

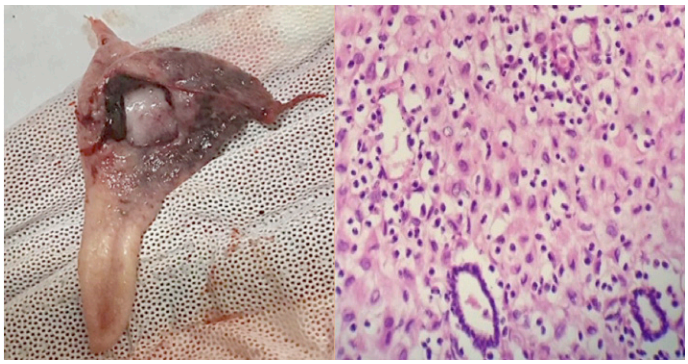

Fig 1: Uterus shaped tissue, immediately after expulsion and Microscopic section showing inactive looking glands lined by simple cuboidal epithelium surrounded by an abundant pre-decidualized stroma.

Case 2

A 19 years unmarried female on second day of her menstruation came to the OPD with complain of passage of fleshy mass per vagina, a few hours back. She also complained of severe dysmenorrhea which subsided after the passage of this mass. She had brought the specimen with her [Fig. 2]. Patient had a history of irregular menstruation and dysmenorrhea for a few years; she also had history of hypothyroidism and was under medication. Patient was prescribed OCP for her irregular menstruation, which she had taken regularly for 21 days and had started menstruating a day before.

On examination the patient's vitals were stable, her ultrasonography had normal findings and urine pregnancy test was negative. Patient was prescribed anti-inflammatory medications and sent home. The specimen she brought was sent for HPE which was consistent with a decidual cast.

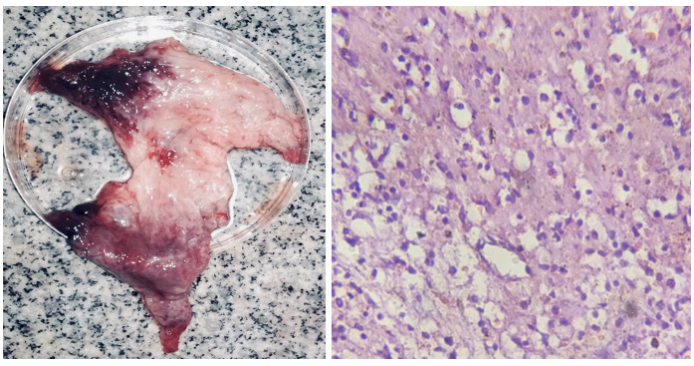

Fig 2: Vaginally expelled tissue and its microscopic section showing extensive decidualization.

Case 3

A 26 years para one lady on third day of her menstruation came to the OPD with complain of passage of fleshy mass per vagina a night before. She previously had the history of menorrhagia for six months and was under OCPs for the last three months. She started having normal cycles after taking OCP and menorrhagia subsided as well.

On examination her vitals were stable and her urine pregnancy test was negative. She was then prescribed anti-inflammatory drugs for few days and sent home. The specimen was sent for HPE which showed features consistent with decidual cast [**Fig. 3**]

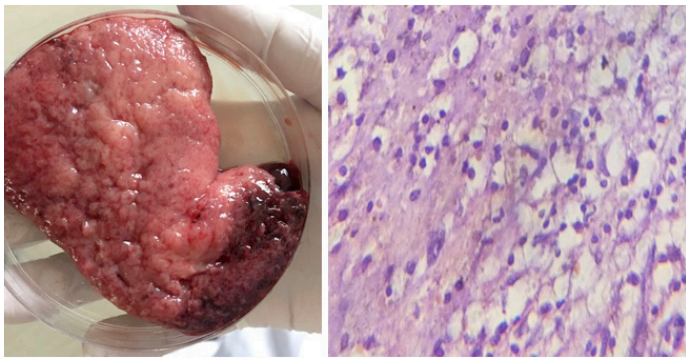

Fig. 3: Gross specimen and microscopic section showing few inactive looking glands lined by simple cuboidal epithelium surrounded by an abundant amount of decidualized stroma with thin walled blood vessels.

Discussion

Expulsion of decidual cast is a rare event and few cases have been reported worldwide.[2,4-7] Although, there is no specific pathogenesis for this condition, different etiology has been put forward.[8,9] Majority of the reported cases is associated with exogenous intake of progesterone agent.[2,5,10] Progesterone plays a primary role in the decidualization of the enodmetrium by acting on endometrial stromal cells through progesterone receptor. Initially, when the level of progesterone increase it causes the negative feedback to occur, decreasing the release of follicular stimulating hormone (FSH) and luteinizing hormone (LH), by the anterior pituitary. Decrease in FSS, inhibits follicular development preventing estrogen level to increase, which in turn prevents the LH surge and then preventing ovulation. Since ovulation is inhibited, serum progesterone level also remains low. Therefore, in theory, it can be assumed that when there is prolonged endometrial proliferation which if followed by the progesterone exposure will lead to more thickening of the endometrium and when the level of progesterone decreases the likelihood of decidual cast formation may be increased. One of the theories purposed by Greenblat et al.[9] explains that an increase in progesterone and estrogen production with incomplete disintegration of endometrium results in endometrial thickening that ultimately contracts to expel its contents. Likewise, there are other theories in which some have suggested infection process, and others have suggested the

etiology is based in prostaglandin production.[1,8,10]

Membranous dysmenorrhea is also caused by decidual cast, which is an intense cramping pain due to the passage of intact endometrial cast through an undilated cervix.[10] Membranous dysmenorrhea is also as rare as decidual cast. In our reports, it is shown that, the occurrence of decidual cast happened in the women who were using hormonal contraceptives containing progesterone. These are similar to other cases reported with the use of DMPA and OCPs.[2,5,10] Therefore, it is also understood that phenomenon of decidual cast should be made aware to the patients who are receiving hormonal contraceptives.

These three cases were reported to our center within the time span of six months, therefore we can also argue if this entity is not as rare as it is proclaimed. The rarity might only be due to the inability of the histological conformation as the patients rarely collect the specimen and only the information is transmitted by them, contributing to underdiagnoses. In our cases this was the one and only episode of passing of tissue for each patient and no other episode of this was report by them again, during the time frame of next 18 months.

Conclusion

This case series clearly shows that decidual cast can even occur in non-pregnant stage. This may often be associated with exogenous progesterone agent and it should be kept in mind as differential diagnosis for the masses expelled per vagina. Patients should also be counseled about this as a side effect of DMPA and OCP. However, if this cast is expelled in gravid state, then ectopic pregnancy and abortions should be ruled out.

Conflict of Interest:

The authors declare no competing interests exist.

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