Decidual Cast Mimics Acute Appendicitis in an Adolescent Girl

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Introduction

In most reported cases, the decidual cast is an iatrogenic pathology related to hormonal reactions during a woman's menstrual cycle. In each menstrual cycle, the endometrium naturally sheds down and passes through the vagina, but rarely the endometrium tissue becomes thickened and retains the shape of the cavity, forming a decidual cast. The cast can be painful to pass during menstruation causing severe pain [1]. Heavy menstrual bleeding is highly encountered in the adolescent age group reaching nearly 18% of teenagers [2]. The differential diagnoses of the decidual cast formation can range from benign conditions like; miscarriages, ectopic pregnancy, uterine polyps, myomas or foreign bodies to more serious pathologies like sarcoma or carcinoma [3-5,15,16].

Case Report

Here we present a 14-year-old girl who reported to the emergency department complaining of severe pelvic pain, mainly on the right side. She has had a history of heavy menstrual bleeding for the last four months, for which her doctor advised her to use combined oral contraception. Physical examination revealed a normal development for her age. Laboratory reports were standard except for the high WBCs count of 21.5 x 103 and the C reactive protein of 38 IU. Ultrasound findings showed normal sized uterus with an endometrial thickness of 38 mm, mainly at the upper part of her uterus.

She was seen by a surgical consultant who suspected acute appendicitis and performed a diagnostic laparoscopy. On laparoscopy, the appendix was normal, and few endometriotic spots were found in the pelvis. However, she had a normal uterus. The next day, the patient had severe spasmodic pain in the lower abdomen and noticed a lump coming through her vagina. Subsequently, she passed an extensive lump measuring 3 x 5 x 6 cm (Figures 1 & 2).

An ultrasound scanning showed an endometrial thickness of 9.9 mm(Normal). The lump was sent for a histopathology examination which revealed necrotic and inflamed decidualized stroma and decidual cast.

Figure 1: Shows the decidual cast measuring 3 X 5 X 6 cms.

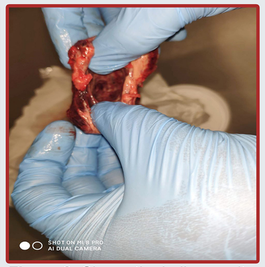

Figure 2: Shows the hollow cavity of the decidual cast of an adolescent girl.

Four months later, the patient was brought for a follow-up hysteroscopy, which showed a normal uterine cavity. Endometrial sampling was done, and histopathological examination revealed normal secretory phase endometrium. Mirena Intrauterine System was inserted for menorrhagia instead of the Yasmin pills (oral combined pills). The patient was followed up again after four months and was completely asymptomatic. Ultrasound scan showed normal endometrium of 8.7 mm. She was then discharged to her GP's care.

Discussion

In most cases, the aetiology of the decidual cast is unknown, and it involves the passage of endometrial tissue with associated pelvic pain [3,6,7]. Decidual cast / membranous dysmenorrhea have been in the literature since the second half of the 20th century [8]. The detachment of the cast occurs spontaneously, followed by its passage through the intact cervix to the vagina [8,9].

As we stated above, there are some theories explaining the occurrence of the decidual cast. Asch and Greenblatt assumed that the decidual cast occurs due to overexposure to hormonal medications (Estrogen & Progesterone). This result is a heterogenous thickened endometrium and cast formation [10,11,17]. Depo-Medroxy Progesterone Acetate (DMPA) directly correlates with decidual cast formation [18]. On the other side, Greenblatt et al., has also believed that an element of infection leads to the formation of the decidual cast [10,12]. It is believed that it is more related to using exogenous progesterone rather than estrogen [13].

Some authors also think that aetiology can be associated with prostaglandin production [14,10]. Rabirneson et al. believed that the membranous dysmenorrhea and decidual cast are due to cell-cell adhesion events mediated by the integrins [14]. The common pathologies in the adolescent age group are fibroepithelial polyps and sarcoma botryoides [15,16]. The ultrasound picture of the decidual cast usually appears as a heterogenous mass mimicking an endometrial polyp [17]. In young girls, it is more common to encounter fibroepithelial polyps and sarcoma botryoides [15,16].

Investigations can include:

Pregnancy test, full blood count, C - reactive protein, ultrasound scan and histology investigation [8,18]. The options for follow-up include either stop using the same contraception method or continuing to use the same one. However, relapses have rarely been reported [8,18]. The complications include severe pain [1,5], infection [1], heavy bleeding resulting in anemia [3,7,9] and blood transfusion [11].

Conclusion

Decidual cast formation has no proved etiological factor. There is no set protocol for investigation or management of it. On the other hand, there are no negative consequences to forming a decidual cast. The patient can continue using the same method of contraception without causing problems. The women need to be informed thoroughly about it.

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