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Case Report

Recurrent hematometra in a young woman taking depot medroxyprogesterone: a case report

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ABSTRACT

Hematometra is defined as the pathologic collection of blood within uterine cavity typically resulting from lower genital tract obstruction. Depot medroxyprogesterone acetate (DMPA) is an injectable progestin contraceptive possibly linked to spontaneous hematometra. This case report describes a young female receiving DMPA who presented with recurrent hematometra. A 31year old, non-pregnant woman, presented with continuous lower abdominal pain and severe dysmenorrhoea with history of receiving two doses of DMPA three months apart. She had undergone cervical dilatation with hematometra drainage twice before she presented to us. MRI abdomen and pelvis revealed adenomyotic bulky uterus with hematometra. Diagnostic hystero-laparoscopy was performed. Cervical stenosis was noted. Mechanical cervical dilatation with hematometra evacuation was done. She was advised to discontinue DMPA and take Dienogest post-operatively for 3 months. This case illustrates a rare presentation of recurrent hematometra which may possibly be linked to DMPA use. Long term DMPA use results in hypoestrogenic state, which can cause significant atrophy of endometrial and endocervical lining and this atrophy might lead to stenosis of cervical os leading to hematometra. Mechanical dilatation of cervix and evacuation of hematometra is considered as gold standard, but may be insufficient. In the patients receiving DMPA, a high index of suspicion for hematometra should be maintained. This case report contributes to emerging evidence of potential association between DMPA usage and occurrence of hematometra. It is observed that these cases can be effectively managed by contraceptive modification.

Keywords: Recurrent hematometra, DMPA, Cervical stenosis

INTRODUCTION

Hematometra is defined as the pathologic collection of blood within uterine cavity typically resulting from lower genital tract obstruction. Commonly identified aetiologies include congenital anomalies such as imperforate hymen and transverse vaginal septum, or acquired structural stenosis following cervical surgeries, radiation therapy or malignancy.^{1,2} Spontaneous hematometra is a rare occurrence especially in the absence of these anatomical or iatrogenic precursors.³

DMPA is an injectable progestin contraceptive. It is known to induce significant endometrial changes including endometrial atrophy and amenorrhea, which are

favourable in patients with dysmenorrhea or heavy menstrual bleeding.⁴ However emerging literature suggests a potential association between DMPA use and development of spontaneous hematometra.⁵ This case report describes a young female receiving DMPA who presented with recurrent hematometra. By detailing this case alongside a review of relevant literature we aim to highlight the necessity of including hematometra as a possible complication of DMPA use in patients presenting with cyclical or acute pelvic pain.

CASE REPORT

A 31year old, non-pregnant female, para 2 living 1 with previous 2 LSCS, presented to the gynaecology outpatient

clinic at Sri Sathya Sai Institute of Higher Medical Sciences, Whitefield, Bengaluru in November 2025. She complained of lower abdominal pain since six months and severe dysmenorrhoea since one year. She had a history of intra-cesarean insertion of Cu-T 380A 4 years ago for contraception. She started experiencing heavy menstrual bleeding and dysmenorrhoea for which she underwent outpatient copper-T removal 1 year ago in a private hospital. She was advised depot medroxyprogesterone 150mg for her symptoms and contraception. After receiving two doses of the same three months apart, she developed severe lower abdominal pain, for which she was evaluated in a private hospital. Ultrasound abdomen and TVS revealed normal sized uterus with endometrial collection. On examination, cervical stenosis was noted. Under ultrasound guidance serial cervical dilatation and evacuation of hematometra was done. Endometrial pipelling was done. Endometrial tissue was sent for TB-PCR, which was found to be negative for MTB. An inflated balloon was inserted at the level of internal os for 24 hours to prevent re-stenosis. After 10 days of the procedure, she developed severe abdominal pain and was evaluated again in a different hospital. TVS revealed a diffusely enlarged uterus (60×49×72 mm) with mild adenomyosis. Fluid collection in endometrial cavity noted 16×3×13 mm, bilateral adnexal vessels appeared prominent and congested. On outpatient basis, dilatation and evacuation of hematometra was done. She was advised to take dienogest 2 mg once daily for 3 months. Two months after which she visited our hospital with above mentioned complaints. General examination was unremarkable. Abdominal examination revealed mild tenderness in the lower abdomen. Per speculum examination revealed normal appearing cervix and vagina. On bimanual examination uterus found to be corresponding to 10 weeks gravid uterus size. All the laboratory investigations were found to be within normal limits. MRI abdomen and pelvis revealed bulky uterus with features of adenomyosis and haemorrhagic contents in endometrial cavity (Figure 1).

A consensus was reached to proceed with diagnostic hystero-laparoscopy. Intra-operatively, cervix was gradually dilated. Endometrial blood was seen coming out of cervix. On hysteroscopy, uterine cavity was unremarkable with atrophic endometrium. No residual endometrial collection was noted (Figure 2-4).

On laparoscopy, few superficial endometriotic spots were noted over the left round ligament and utero-vesical fold of peritoneum. Uterus appeared mildly bulky. Bilateral ovaries were found to be normal (Figure 5 and 6).

Densely adherent bladder to lower part of anterior uterine wall was separated. Excision of superficial endometriosis was done. Cystoscopy was performed to look for bladder endometriosis. No endometriotic lesions noted in urinary bladder. She was advised to continue tab dienogest post-operatively for 3 months. Patient was symptomatically better at 6 month follow up.



Figure 1: MRI Pelvis sagittal view showing adenomyotic uterus with hematometra.



Figure 2: Vaginoscopy showing hematometra draining through cervix.



Figure 3: Hysteroscopy showing cervical stenosis.

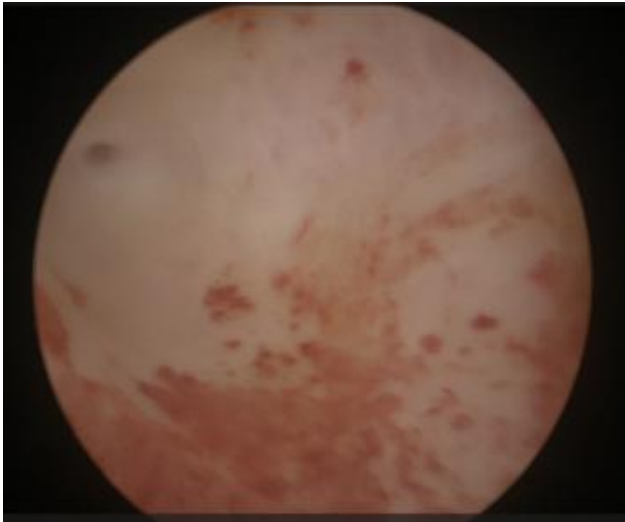


Figure 4: Hysteroscopy showing atrophic endometrium.

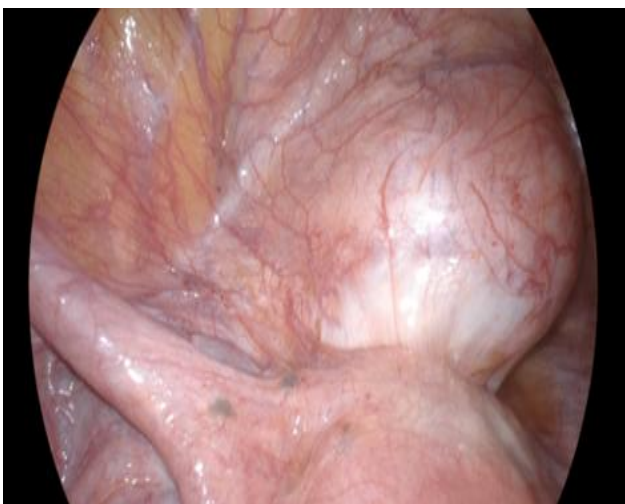


Figure 5: Laproscopy showing superficial endometriotic deposits over left round ligament.

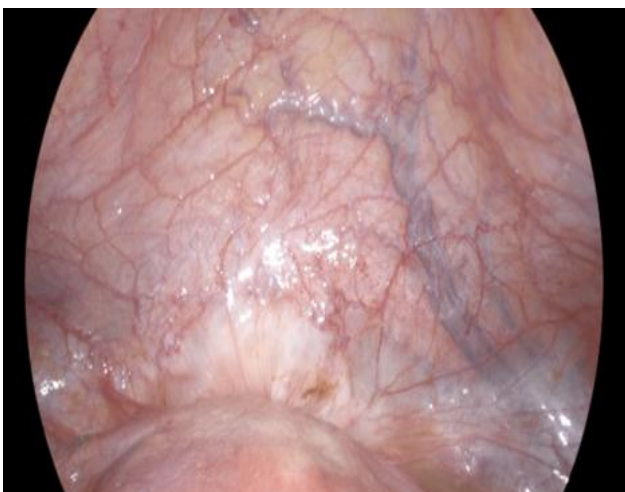


Figure 6: Laproscopy showing superficial endometriotic deposits over utero-vesical fold.

DISCUSSION

The diagnosis of hematometra in women of childbearing age without any history of cervical surgery or congenital anomalies presents a diagnostic challenge. This case illustrates a rare presentation of recurrent hematometra which may possibly be linked to DMPA use.

The mechanism by which DMPA causes hematometra likely involves suppression of hypothalamic-pituitary ovarian axis. Long term DMPA use results in hypoestrogenic state, which can cause significant atrophy of endometrial and endocervical lining. Thorne et al posited that this atrophy might lead to stenosis of cervical os leading to hematometra.⁵

House et al demonstrated that progesterone inhibits cervical tissue formation and remodelling in 3D culture system suggesting a direct cellular mechanism for DMPA induced cervical rigidity or stenosis.⁶

Singh et al noted that formation of decidual cast by DMPA use can physically obstruct the cervical canal leading to hematometra.⁷

Acute abdominal pain is the most common presentation as reported in most of the articles. No significant risk factors were stated in the cases reported by Chou et al and Nkengafac et al suggesting a possibility of spontaneous hematometra, although the former reported a rare case of hematometra in an adolescent female presenting with acute abdominal pain who was on DMPA.^{2,8}

Similar to our case, Gupta et al also reported a case with past surgical history of two caesarean section and a myomectomy.⁹ Though not conclusive, many case reports have pointed towards the possible association of DMPA use and hematometra. It is important to rule out organic causes such as cervical polyps, cancers or fibroids before attributing it to DMPA.

Obstructive reproductive tract anomalies and retrograde menstruation are well known risk factors for pelvic endometriosis.¹¹ In this case, we observed superficial endometriotic spots on peritoneum, which could possibly be because of cervical stenosis causing hematometra leading to reflux of menstrual blood into the peritoneal cavity.

When it comes to the management, mechanical dilatation of cervix and evacuation of hematometra is considered as gold standard, but may be insufficient. One of the most recent reports by Elshatby et al documented unexplained recurrent hematometra in a woman on prolonged DMPA. Resolution of symptoms was seen only after DMPA was discontinued.² Archer et al discuss the management of common DMPA side effects, but hematometra remains an outlier that may require discontinuation of the method to prevent recurrence.⁴

CONCLUSION

In the patients receiving DMPA, a high index of suspicion for hematometra should be maintained. Patients may typically present with persistent abdominal pain and menstrual abnormalities in the absence of any structural uterine anomalies. This case report contributes to emerging evidence of potential association between DMPA usage and occurrence of hematometra. Recurrent hematometra can therefore lead to endometriosis. It is observed that these cases can be effectively managed by contraceptive modification. Further research is warranted to establish the correlation between DMPA usage and hematometra. Better understanding of the pathophysiology of this condition will guide us in its optimal management.

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