Cerebral Venous Thrombosis following Oral Contraceptive Pill Use for Menorrhagia: Management Dilemma

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ABSTRACT

Women on oral hormonal therapy for menorrhagia are at risk of cerebral venous thrombosis (CVT). This condition is characterized by intravascular clotting in the venous system of brain. In this case which is being presented for its rarity, the patient developed CVT following use of low dose estrogen progestrone combination pill; hence, treatment was stopped. Withdrawal of oral contraceptive pill (OCP) was associated with profuse vaginal bleed. Emergency hysterecmy was risky as patient was unstable. Levonorgestrel intrauterine system (LNG-IUS) proved to be a safe effective innovative option in this situation.

Keywords: Oral contraceptive pills, Cerebral venous thrombosis, Menorrhagia, Levonorgestrel intrauterine system.


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CASE REPORT

A 48 years old multiparous lady presented in emergency with headache, vomiting not relieved with medication. She was diagnosed to have fibroid uterus with menorrhagia 2 years back and advised low dose oral contraceptive pill (OCP) for the same. On examination, patient was conscious oriented, with no neurological deficit, systemic examination was normal, on pelvic examination, cervix healthy uterus bulky fornices free. Neuroimaging showed right-sided transverse sinus thrombosis with hemorrhagic venous infarct in the right posterior temporal region. Coagulation profile, liver and kidney function tests were normal. Pelvic scan showed 4 × 3 cm fibroid in anterior wall of uterus. She was started on anticoagulant therapy and necessary antiedema measures. Due to sudden withdrawal of OCP and intake of oral anticoagulants, she had excessive bleeding. Two units packed cells given for anemia.

Emergency hysterectomy was planned as patient was bleeding profusely and hormonal treatment could not be given as it would aggravate thrombosis. Neurophysician advised to delay any major surgical procedure for at least 6 months until brain could recover from infarction. In view of persistent menorrhagia, cerebral venous thrombosis (CVT) associated risk of performing emergency hysterectomy and inability to use hormonal pills to control bleeding, it was decided to utilize the option of levonorgestrel intrauterine system (LNG-IUS). Emergency dilatation curettage and insertion of LNG-IUS was done under short general anesthesia. Warfarin was stopped and low molecular weight heparin dalteparin sodium 5000 international units subcutaneous once a day was started prior to the procedure and continued for 48 hours postoperatively. Warfarin was restarted on day three and patient discharged. Histopathological examination of endometrial curettings revealed benign endometriul polyp. On follow-up after 3 months, patient was comfortable and symptom free.

DISCUSSION

Oral contraceptive pills are related with increased risk of development of CVT. This scenario may be complicated when patient presents with excessive bleeding following withdrawal of hormonal therapy.

Even after full investigations in 20 to 30%, the cause remains uncertain. Puerperium remains an important cause of CVT in developing countries. Among drugs associated with occurrence of CVT, OCPs are the most common. In a prospective study of 61 patients with confirmed CVT in Namazi Hospital, Iran, the most frequent risk factor was OCP use (62.2%). Increased levels of coagulation factors 7, 8, 10, fibrinogen and prothrombin has been found in women using OCP, these findings are more pronounced in women on OCP containing gestodene and desogestrel (third generation progesterone).

Many coagulation disorders have been associated with CVT. These disorders may be primary like protein C,
protein S deficiency, antithrombin III deficiency and protein C resistance (APC-R) or acquired like antiphospholipid antibody syndrome. Protein C resistance due to factor V Leiden deficiency has recently been established as an important risk factor of CVT in patients taking OCP. Inherited thrombophilia, including APC-R should be looked for in all patients with CVT taking OCP. Functional APC-R is a highly prevalent coagulopathy, but the reasons for this coagulopathy are diverse; abnormal and borderline APC-R results should be supplemented by DNA analysis for the presence of factor V Leiden.

In cerebrovascular accidents, thrombolytic and anticoagulant therapy can aggravate the uterine bleeding. Severe menorrhagia leads to hypovolemia, thereby predisposing to a state of cerebral hypoperfusion. A LNG-IUS can be used in a patient with OCP related CVT and severe vaginal bleeding. Levonorgestrel containing intrauterine system contains 52 mg of levonorgestrel hormone and releases 20 µg hormone per day. Use of LNG-IUS is associated with significant reduction in number of days of bleeding and menstrual blood loss. This effect is based on marked local action of LNG-IUS on the endometrium. Reduction of excess blood loss is as early as first menstrual cycle after insertion and at 1 year reduction is more than 90%. In fibroids decrease in menorrhagia may be more due to atrophy of endometrium than due to decrease in size of fibroid itself. The patient acceptance and satisfaction is high. The main side effect is intermenstrual bleeding, especially for first 3 months after insertion. If the patients are counseled before insertion continuation rates for LNG-IUS are high. It has the potential to replace hysterectomy as treatment of choice in certain patients. Royal College of Obstetricians and Gynaecologists (RCOG), London, UK, guidelines recommend the use of LNG-IUS as first line option to treat menorrhagia after assessment of uterine cavity and endometrial biopsy. Evidence suggests that the absorption of levonorgestrel is too low to cause any thromboembolism. It is effective in reducing the duration and amount of menstrual bleeding in women with menorrhagia on oral anticoagulants. It is a major advance as compared to the previous alternative of hysterectomy which is associated with increased thrombosis.

REFERENCES


