Episodes of severe menorrhagia at menarche in a girl with von Willebrand disease

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Abstract

We describe a case of a 14-year-old girl with von Willebrand disease (vWD) and episodes of severe menorrhagia at menarche, necessitating hospitalization and requiring blood transfusions and administration of purified von Willebrand factor. Further episodes of menorrhagia were successfully prevented with the use of oral contraceptives and uterine bleeding at menses was regulated with the combination of nasal desmopressin and tranexamic acid per os.

Keywords: von Willebrand disease, menorrhagia, menarche, contraceptive therapy, case report.

Introduction

Von Willebrand disease (vWD) is a common inherited bleeding disorder which is found in approximately 1% of the general population [1]. There is a prevalence of vWD of between 5% and 20% in women with abnormal uterine bleeding [2]. However, 60-95% of women with vWD experience menorrhagia [2]. Severe menorrhagia, necessitating hospitalization, usually occurs during the first few years after menarche in women with vWD. Management of menorrhagia includes hormonal treatment, desmopressin and antifibrinolytic agents. Despite the high frequency and the severity of this complication, no consensus on optimal management of menorrhagia in vWD currently exists.

Case report

A 14-year-old girl, previously diagnosed with vWD, was transferred to our department from her local hospital because of severe menorrhagia at menarche. vWD was diagnosed at the age of 2 after an episode of heavy gingival bleeding (von Willebrand Factor (vWF) – 14%, vonWillebrand factor:Ristocetin Cofactor (vWF:RCo) – 9.8%). In addition, she had had petechiae and ecchymoses during infancy. Both parents were found to have vWD following the diagnosis in our patient (mother: vWF – 64%, vWF:RCo – 40%; father: vWF – 5.1%, vWF:RCo – 5%). Her father experienced recurrent episodes of epistaxis and one episode of gastrorrhagia. Her mother presented with easy bruising and petechiae on mild pressure, however she had experienced normal menses, three uneventful pregnancies and uncomplicated childbirths. One cousin had previously been diagnosed with...
Menorrhagia may be most severe during the first few years after menarche, both in adolescents with vWD and in unaffected individuals. This is related to immaturity of the hypothalamic-pituitary-ovarian axis and should be considered as a normal phenomenon. However, in adolescents with vWD, uterine bleeding at menarche can become severe. Transfusion of packed red blood cells may be required to correct haemoglobin levels and administration of purified vWF should be considered for haemostatic purposes. Menorrhagia at home can be managed with the use of desmopressin and antifibrinolytic agents, alone or in combination. Desmopressin increases vWF and FVIII levels both in patients with vWD and in unaffected individuals. It has been widely used in vWD and menorrhagia with good results [11]. Antifibrinolytic agents (tranexamic acid) inhibit the local fibrinolytic effect, whereas drugs interfering with prostaglandin synthesis (non-steroidal anti-inflammatory agents) block platelet inhibitory effect. Studies have shown that tranexamic acid is more effective in regulating menorrhagia compared to both mefenamic acid [12] and progesterone [13].

In order to prevent heavy bleeding in our patient during her next period, an alternating combination of conjugated oestrogens and dydrogesterone were given. However, this treatment was not successful and heavy menstrual bleeding, re-occurred. At this point, oral contraceptives were prescribed with good results. Contraceptive pills suppress ovulation and  

Discussion

VWD is an autosomally inherited condition. Despite this, a high frequency of symptomatic vWD is reported in women due to the hemostatic challenge of menses and childbirth. Menorrhagia is reported by 60-95% of women with vWD [3, 4], whilst vWD is diagnosed in women with menorrhagia with a prevalence that extent from 5 to 20% in different studies [5, 6]. Although management of abnormal uterine bleeding has traditionally been the domain of gynaecologists, only 4% of them consider vWD in the differential diagnosis of menorrhagia [7], whilst the prevalence of haematologists identifying menorrhagia as an indication for testing for vWD reaches 91% [8]. Several studies indicate a cycling variation of vWF concentrations during menstrual cycles. This is mainly attributable to the fluctuating levels of oestrogens [9]. The latter was emphasized in a study showing that women undergoing in vitro fertilization had increased levels of vWF following supraphysiological levels of estradiol after ovarian stimulation [10]. Due to fluctuating vWF levels during the menstrual cycle, women of reproductive age, suspected of having vWD, should be tested during menses or in the first few days after a period. Our patient had already been diagnosed with vWD. However, vWF was repeated a few days after her period and confirmed the diagnosis of vWD (vWF – 13.2% and vWF:RCo – 9.6%).

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In order to prevent heavy bleeding in our patient during her next period, an alternating combination of conjugated oestrogens and dydrogesterone were given. However, this treatment was not successful and heavy menstrual bleeding, re-occurred. At this point, oral contraceptives were prescribed with good results. Contraceptive pills suppress ovulation and
consequently inhibit endometrial proliferation. By suppressing ovulation, oral contraceptives can also prevent recurrent haemoperitoneum in women with bleeding disorders [14]. Additionally, oestrogens, contained in oral contraceptives, enhance haemostasis as they increase the levels of vWF and FVIII [15]. However, in our patient, the natural maturation of hormonal axis have been a factor contributing to the regulation of her menses. This was supported by the fact that 3 months after the initial administration, oral contraceptives were discontinued and our patient is still experiencing normal menses.

References