ANALYSIS OF CAUSES OF MENORRHAGIA IN PATIENTS WITH NORMAL PELVIC PATHOLOGY

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HOW TO CITE THIS ARTICLE:

Shiva Kumar H. C, Ramaraju H. E. "Analysis of Menorrhagia in Patients with Normal Pelvic Pathology". Journal of Evolution of Medical and Dental Sciences 2015; Vol. 4, Issue 87, October 29; Page: 15172-15177, DOI: 10.14260/jemds/2015/2156

ABSTRACT: OBJECTIVE: To find the incidence of systemic causes of menorrhagia with special emphasis on careful history taking, clinical examination and inclusion of simple blood tests to diagnose hemostatic disorders. **METHOD:** Thirty two women with menorrhagia of 15-45 years age, without any pelvic cause and treated from 1st January, 2011 to 31st December, 2011 were recruited for this study. After a detailed history and general examination all patients were subjected to blood tests for complete blood count, bleeding time, prothrombin time, activated partial thromboplastin time (aPTT) and serum T3, T4, TSH levels. Special tests were reserved, wherever applicable, to diagnose the cause of menorrhagia. Results were analyzed statistically by 2 x 2 chi square test. **RESULTS:** Hypothyroidism (25%) and inherited coagulopathy (18%) were the two most common nonpelvic causes of menorrhagia. Menorrhagia from menarche ($P<0.001$), bleeding from other sites ($P=0.007$), history of previous operative bleeding ($P<0.001$), and history of postpartum bleeding ($P<0.001$) were statistically significant in patients with underlying hemostatic disorders. **CONCLUSION(S):** A detailed history, clinical examination and simple blood tests can detect systemic causes of menorrhagia.

KEYWORDS: Menorrhagia, Hypothyroidism, Coagulopathy.

INTRODUCTION: Menorrhagia, defined as regular cyclical bleeding, excessive in amount ($>80\text{mL}$) and/or duration (>5 days) is a symptom and not a disease. Specific cause of menorrhagia is identified in less than 50% of affected women.¹ In majority cause lies in the pelvis and can be easily identified. However, the bleeding may be due to undiagnosed coagulation defect,² endocrine disorder or systemic disease.

Menorrhagia may be the only clinical manifestation of an inherited bleeding disorder. Recent studies have shown that inherited bleeding disorder, especially in mild form, is the underlying cause in a large number of women with menorrhagia and the incidence may be as high as 15%.²

Menorrhagia may ultimately lead to surgery,³ therefore patient having menorrhagia without obvious pelvic pathology should be routinely studied to diagnose underlying endocrine and hemostatic disorders.

The present study was undertaken to know the incidence of different nonpelvic causes of menorrhagia and to highlight the importance of history, clinical examination and inclusion of some simple routine blood tests in our day to day practice to diagnose underlying hemostatic disorders in patients with menorrhagia.

METHODS: Two hundred and twenty six patients between the ages of 15 and 45 years attended our outpatient department from 1st January, 2011 to 31st December, 2011 complaining of menorrhagia. After history taking, clinical examination, and investigations including sonography, endometrial histology, those with a pelvic pathology like fibroids, adenomyosis, tuboovarian masses, cervical or

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endometrial malignancy, cervical polyp, tuberculous endometritis, and intrauterine contraceptive device, and those taking anticoagulants, oral contraceptive pills, hormones and nonsteroidal antiinflammatory drugs were excluded from the study (n=194).

The remaining 32 were included in this study. A detailed menstrual history and history of other bleeding symptoms like easy bruising, bleeding from other sites, and postoperative bleeding/postpartum hemorrhage (PPH) was taken. History suggestive of thyroid, renal or liver disease was also taken. Family history of bleeding disorder was recorded. A detailed general physical examination was done to look for pallor, bleeding spots, hepatosplenomegaly, and thyroid enlargement. These patients were subjected to routine tests of complete blood count, platelet count, peripheral smear, bleeding time (BT), prothrombin time (PT), and activated partial thromboplastin time (aPTT) besides estimation of serum T3,T4 and TSH.

Wherever history, clinical examination, and the above routine tests indicated underlying medical disorders, patients were referred to the department of Medicine for further evaluation and diagnosis by special tests like renal function tests, liver function tests, and bone marrow study.

The results obtained in the study were statistically analyzed using the 2x2 chi square test.

RESULTS:

Total number of menorrhagic patients with normal pelvic pathology were 32.

Cause	Number of Cases	Percentage
Hypothyroidism	8	25
Hyperthyroidism	0	0
Idiopathic thrombocytopenic purpura	2	6
Inherited coagulopathy	6	18
Liver disease	1	4
Renal disease	0	0
No definite cause identified	15	47
Table 1: Systemic causes of Menorrhagia		

Hypothyroidism was seen in 8(25%) cases whereas no cases had hyperthyroidism. Of the inherited bleeding disorders, coagulopathy was the most common cause in 6 cases (18%). Idiopathic thrombocytopenic purpura (ITP), renal disease, and liver disease were other causes. However, in 15(47%) cases history, clinical examination, and laboratory tests could not reveal any definite cause for menorrhagia.

Cause	Age (years)		
	15-25	26-35	36-45
Hypothyroidism	1	2	5
Hyperthyroidism	0	0	0
Idiopathic thrombocytopenic purpura	1	1	0
Inherited coagulopathy	4	2	0
Liver disease	0	1	0
Renal disease	0	0	0
Table 2: Age distribution of Systemic causes of Menorrhagia			

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Hypothyroidism was commoner in the older age group (36-45 years) whereas inherited Coagulopathy was commoner in young patients (15-25 years).

Variable	Patients with Hemostatic Disorder (8)	Patients without Hemostatic Disorder (24)
Duration of menorrhagia Since menarche	5(62.5%)	2(8.33%)
Duration of menorrhagia more than 2 years	2(25%)	8(33.33%)
Duration of menorrhagia less than 2 years	1(12.5%)	14(58.33%)
Family history of bleeding disorders	3(37.5%)	2(8.33%)
History of other bleeding symptoms {gum/nose bleeding, Bruising }	5(62.5%)	1(4.16%)
Postoperative bleeding *	2/5(40%)	3/11(27.27%)
Postpartum bleeding *	1/3(33.33%)	2/14(14.28%)
Hemoglobin level		
< 6g/dL	3(37.5%)	4(16.66%)
6-10g/dL	1(12.5%)	11(45.83%)
>10g/dL	4(50%)	9(37.5%)
Table 3 : Comparative study of menstrual history ,family history, history of other bleeding symptoms, postoperative and postpartum bleeding, and hemoglobin level among those with hemostatic disorders (Inherited coagulopathy + ITP) and those with no such underlying disorders		

*Percentage of women who had procedure or an event.

Menorrhagia since menarche was seen in 62.50% of those with such disorders but only in 8.33% of those without such disorder, which is highly significant ($P<0.001$). Menorrhagia of less than 2 years was significantly less ($P=0.026$) in patients with hemostatic disorders. Family history of bleeding disorder were present in those with the hemostatic disorder in 37.5% but only in 8.33% of those without it ($P=0.28$).

History of other bleeding symptoms were present in those with the disorder in 62.5% but only in 4.16 % of those without it ($P=0.007$). 5 out of 8 patients with hemostatic disorder gave previous history of operation, out of whom two (40%) had an episode of excessive postoperative bleeding, whereas similar episode was experienced by 27.27% (3/11) of women without hemostatic disorder ($P<0.001$).

3 of 8 patients with hemostatic disorder had history of delivery of whom 2(66.66%) had an episode of PPH. This was higher ($P<0.001$) than 14.28% (2/14) of those without hemostatic disorder. Severe anemia ($Hb<6$ g/dL) was seen in 37.5% with hemostatic disorder in comparison to 16.66% in those without ($P=0.362$).

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Laboratory values	Significance	No. of patients (n=28) a
T3, T4 - normal, TSH - High	Hypothyroidism	3
T3, T4 - low, TSH - High	Hypothyroidism	5
T3, T4 - high, TSH - Low	Hyperthyroidism	0
Prolonged BT, normal aPTT, thrombocytopenia	ITP	2
Prolonged BT, prolonged aPTT, normal platelet count	Inherited coagulopathy	6
Prolonged PT with altered LFT, thrombocytopenia	Liver disease	1
Thrombocytopenia, slightly prolonged BT,	Renal disease	0
Table 4: Significance of different laboratory tests performed		

DISCUSSION: Hypothyroidism (25%) and inherited coagulopathy (18%) were the two most important systemic causes of menorrhagia in our study. 62.5% of hypothyroid patients were in the age group of 36-45 years. According to Doifode and Fernandez,⁴ menorrhagia is the most common menstrual irregularity in hypothyroid women. T3, T4, TSH estimation should be made mandatory in cases of dysfunctional uterine bleeding to detect apparent and occult hypothyroidism.⁴

In studies by Trasi et al.⁵ Kadir et al.¹ and Gursel et al.² inherited coagulopathy accounted for 19.16%, 17% and 15% of cases of menorrhagia respectively. This is similar to our result of 18%. Menorrhagia since menarche (62.5%) was significantly higher ($P < 0.001$) in patients with hemostatic disorder. Similar results were noted by Ragni et al.⁶ (53.1%) and Kadir et al.¹ (65%) in their studies of menorrhagic women with coagulation disorders.

The bleeding symptoms like nose or gum bleeding and bruising and was significantly higher ($P = 0.007$) in those with hemostatic disorder, consistent with the findings of Kadir et al.¹ Similar to the findings of Kadir et al.¹ our study also revealed that history of post-operative bleeding and of postpartum bleeding were significantly more ($P < 0.001$ each of the two) in those with underlying hemostatic disorder. However, though family history and severe anemia were more common in women with hemostatic disorder it was not statistically significant.

Prolonged BT and aPTT with normal platelet count were stamped as cases of inherited coagulopathy. Tests to diagnose von Willebrand's disease were suggested, this being the most common coagulopathy in menorrhagic patients.⁷ but no patient could afford them. Wherever history, clinical examination, and routine tests indicated medical disorder, patients were referred to department of medicine to carry out special tests which helped us to diagnose different causes as shown in Table 4.

Menorrhagia since menarche, history of bleeding from other sites, postoperative bleeding, and postpartum haemorrhage fulfill the criteria required to be declared as effective diagnostic criteria, even in a comparatively small population of study. No definite cause was found in 47% cases which may be due to some hemostatic imbalance in the endometrium.

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Menorrhagia may be the first and only clinical manifestation of an inherited bleeding disorder.⁸ But coagulopathies are not considered as etiology of menorrhagia by gynecologists and unintentional surgical intervention is done without getting the patients investigated for coagulopathies.⁹

Our study emphasizes the importance of careful history taking since certain factors significantly predict menorrhagia viz., menorrhagia since menarche, presence of other bleeding symptoms like bruising, epistaxis, gum bleeding and history of postoperative bleeding and postpartum hemorrhage.

Clinical suspicion for an underlying bleeding disorder in menorrhagic patients will not only help in its early diagnosis but will also have important implications in management of antepartum and postpartum hemorrhage of future pregnancies.⁹

This study shows that search for systemic diseases including endocrine and hemostatic disorders in menorrhagic patients with no pelvic cause reveals the underlying cause in most cases.

CONCLUSION: A gynecologist's awareness and inclusion of detailed history, clinical examination and simple laboratory tests in day-to-day practice can prevent unnecessary hysterectomies in women with menorrhagia.

REFERENCES:

1. Kadir RA, Economides DL, Sabin CA et al. Frequency of inherited bleeding disorders in women with menorrhagia. *Lancet* 1998; 351:485-9.
2. Gursel T, Biri A, Kaya Z, Sivashoglu S, Albayrak M. The frequency of menorrhagia and bleeding disorders in university students. *Pediatr Hematol Oncol.* 2014 Aug; 31(5):467-74. doi: 10.3109/08880018.2014.886316. Epub 2014 Mar 31.
3. Fender GRK, Prentice A, Nixon RM et al. Management of menorrhagia: an audit of practices in the Anglia menorrhagia education study. *BMJ* 2001; 322:523-4.
4. Doifode CD, Fernandes K. Study of thyroid dysfunction in patients with dysfunctional uterine bleeding. *J Obstet Gynecol India* 2001; 51:93-5.
5. Trasi SA, Pathare AV, Shetty SD et al. The spectrum of bleeding disorders in women with menorrhagia: a report from Western India. *Ann Hematol* 2005; 84:339-42.
6. Ragni MV, Bontempo FA, Hassett AC. von Willebrand disease and bleeding in women. *Haemophilia* 1999; 5:313-7.
7. Kujovich JL, von Willebrand's disease and menorrhagia: prevalence, diagnosis, and management. *American Journal of Hematol.* 2005 Jul; 79(3):220-8.
8. Chi C1, Pollard D, Tuddenham EG, Kadir RA. Menorrhagia in adolescents with inherited bleeding disorders. *J Pediatr Adolesc Gynecol.* 2010 Aug; 23(4):215-22. doi: 10.1016/j.jpag.2009.11.008. Epub 2010 May 14.
9. Sethi P, Sharma A, Manhas K. Blood coagulation profile and fibrinolysis in patients with menorrhagia. *Asian J Obstet Gynaecol Pract* 2001; 5:43-6.

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FINANCIAL OR OTHER

COMPETING INTERESTS: None

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Date of Submission: 05/10/2015.
Date of Peer Review: 06/10/2015.
Date of Acceptance: 17/10/2015.
Date of Publishing: 28/10/2015.