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Review Article

Various approaches in the treatment of patients with bleeding disorders: A review

Shikha Thakur[1]*, Gursharan Kaur[1]

[1] *Dept. of Orthodontics, Sri Sukhmani Dental College and Hospital, Dera Bassi, Punjab, India*

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ABSTRACT

Bleeding disorders found to be inherited or they can also be acquired in nature and presents at different level of severity in nature. All the clinicians who are oral care providers to the society must be aware of management of the dental patients who are having bleeding disorders. patients who are having bleeding disorders, posses a big challenge for the clinician. on the other side, if the oral care provider have a sufficient knowledge about the bleeding disorders and their management, they can be treated safely as well as smoothly in the dental practice. specially, those patients who are on anticoagulant therapy, represents large groups of disorders related to the bleeding.

1. Introduction

In an individual bleeding disorders can result from inherited defect genetically, or bleeding disorders can also be acquired type, due to the usage of some medication which are prescribed to the patient for example, anticoagulants. Or due to some medical related conditions like, dys functioning of the liver, chronic disease related to the kidney and various diseases related to autoimmunity. During any injury to the blood vessels, the process of hemostasis totally relies on interaction between the walls of the vascular vessels, and the platelets which gets activated, along with various clotting factors which are present in the blood. Any defect that occurs at any of the above said stages, results in the bleeding disorders. The level of the severity of the bleeding disorders are affected by vascular wall defect, defects related to platelets, along with the deficiency of the various clotting factors that are present in the blood. Thus according to all the above said causes, patient can have mild, moderate and severe episodes of bleeding.[1–3]

So a dentist must be aware of the impact of the various bleeding disorders, on the management of their patient. Any patient before undergoing treatment should be checked thoroughly through routine blood tests, especially when any extensive dental oral surgical procedure needed to be done on the patient. Before starting every patient, he or she should be questioned, if he or she have any unusual bleeding episode previously, during the time of surgery or after surgery, or was there any spontaneous episodes of bleeding. Patient should also be asked for, was there any history of significant bleeding after dental extraction. Patient should also be asked for history of bleeding disorders in family, as various bleeding disorders runs in family, for example hemophilia, von willebrand disease. A complete history of taking any specific medication should also be asked for, as various drugs has a tendency to prolong the bleeding time. Also, some of the medications results in interference in normal hemostasis of the individual and results in prolonged bleeding time of the individual. Excessive consumption of alcohol also results in prolonged bleeding time, as alcohol consumption results in damage to the liver, which ultimately results in altered production of factors which are helpful in

* *Corresponding author.*
E-mail address: drshikhathakur@gmail.com (S. Thakur).

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coagulation.[1,4,5]

Patients those who are inherited with various bleeding disorders are marked by a defect in the vascular wall. For example such as, marfan syndrome, hereditary hemorrhagic telangiectasia, and ehlers danlos syndrome rarely shows bleeding episodes after normal dental extraction. In the management of the above said it includes, consultation with the hematologist, minimal invasive dental treatment to be followed over the patient, avoid using of analgesics such as aspirin, and non steroidal anti-inflammatory drugs.[6–8]

Any patient who is suffering from platelet dys function defect results in qualitative dys functioning and these types of patients should be treated only after consulting the hematologist, and there could be a need of platelet transfusion that too prior to any invasive dental procedure. patient suffering from platelet dys functioning should undergo specific blood tests like blood investigation for, bleeding time of the individual, platelet aggregation test and should also go peripheral blood smear.[6,7,9–11]

Any patients who are suffering from inherited clotting disorders for example hemophilia A and von willebrand disorder, is not an easy going and straight forward patient and it requires for sure consultation with the hematologist to undergo any major or even any minor oral surgical procedure. So patients with hemophilia A, present with a deficiency of factor viii. And hemophilia A is found to be an inherited disorder. Hemophilia A, is inherited as an autosomal X – linked recessive trait. This disease has a tendency to affects the male population more as compared to the female population Hemophilia A can be characterized as mild moderate and severe depending upon the level or concentration of factor VIII in the plasma. laboratory diagnosis to be done before going for any dental procedure includes activated partial thromboplastin time bleeding time of the individual and level of factor VIII coagulant in blood plasma Desmopressin is used to increase the transient level o factor VIII in an individual, Desmopressin is found to be effective in the treatment of mild hemophilia A. Different options for the replacement of factor VIII are fresh frozen plasma cryoprecipitates. Aminocaproic acid and tranexamic acid are the most commonly used agents in preventing post operative bleeding from the surgical wounds.[6–8,10–12]

Hemophilia B is found due to deficiency of factor IX in the blood plasma. It can be treated with the replacement therapy with factor IX concentrate, and it can also be treated with concentrates of prothrombin complex IX.[9,10]

Von willebrand disease is also found to be one of the most common hereditary bleeding disorder The normal incidence of von willebrand disease is found to be 1 in every 10000 persons. It occurs due to the deficiency in von willebrand factor. It is not a sex linked disorder. And it is classified as Type I, Type II, Type III mild, moderate and severe. mild severity of von willebrand disease can be treated with the usage of desmopressin, but the severe disease disease required the replacement with the factor VIII concentrate von willebrand factor also acts as carrier for the factor VIII and results in increases its half life It is diagnosed by increased bleeding time increased activated partial thromboplastin time along with low levels of von willebrand antigen treatment options are quite similar as the treatment of the hemophilia Desmopressin is found to be the treatment of choice in mild to moderate form of von willevrand disease the severe form of von willebrand disease can only be treated with replacement therapy with von willebrand factor concentrates.[6–8,10–14]

2. Guidelines for Dental Management of Patient with Hemophilia and Von Willebrand Disease

Some of the dental treatment can be provided without the usage of local anesthesia for scaling application of pit and fissure sealants supragingival scaling making of dental impression And in case if administration of local anesthesia is required in hemophilic patient there are 80% chances of development of hematoma in case of inferior alveolar nerve block to prevent this patient should be administered factor VIII concentrate pre operative medication need to be discussed prior with the patient physician Buccal infiltration to the mandibular 1^{st} molar should be done with injection of 4 % articaine hydrochloride rather than 2% lidocaine hydrochloride Mental nerve block injection is found to be safe and does not require any hematological coverage.[4,5,13,14]

Before dental extraction patient with moderate to severe disease requires replacement with either factor concentrate or with recombinant factor VIII. Replacement therapy can be administered by the health care providers only it is recommended that after the administration of factor concentration oral dental procedure should be carried out in with in 30 to 60 minutes Hematologist suggested that the level of factor VIII concentrate should be in the range of 50 to 75 % for minor oral and periodontal surgical procedures and for the maxillofacial surgery level of factor VIII should be in the range between 75 % to 100 % Administration of trenexemic acid in the concentration of 1gm for 3 times a day for 7 – 10 days helps in adding stability to the blood clot.[1–3,15,16]

Supra gingival scaling with the use of local hemostatic agent is found to be safe for the treatment of mild form of hemophilia A and von willebrand disease Any procedure which requires raising the flap and requires deep root surface debridement requires factor VIII concentrates level in between 50 to 75 %.[1–3,5,15]

In terms of prosthodontics treatment modalities supra gingival finish line rather than sub gingival finish line should be preferred in case of patient having hemophilia A or having von willebrand disease to avoid even minimal trauma to the soft tissue on the other hand full as well as partial removal prosthesis is found to be safer Endodontic

procedures like restorations applications of pit and fissure sealants are found to be safer in patients having hemophilia A or von willebrand disease during the application of rubber dams or matrix bands or interdental wedges care should be taken to avoid trauma to the soft tissue Root canal treatment is found to be safe and bleeding from the pulp might helps in making the pain for the prolonged time period and this can be eliminated with irrigating the canal with 4% sodium hypochlorite solution along with administration of calcium hydroxide. [17,18]

It is found that orthodontic treatment is safer in patient having bleeding disorders. But in case if there is any requirement for the tooth extraction consultation with the physician is required. [1–3,15–18]

3. Discussion

Patients those are suffering from mild bleeding disorders can be treated with primary oral care that too after consultation with the physician and the hematologist and patient having moderate to severe bleeding disorder should be treated in hospital setting usage of drugs like aspirin and non steroidal anti-inflammatory should be avoided in patient having bleeding disorders.

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5. Conflict of Interest

None.

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Author biography

Shikha Thakur, Dental Surgeon

Gursharan Kaur, Tutor

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