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Prevalence of Bleeding Disorder in Patients Reporting To Department Of Oral & Maxillofacial Surgery

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Abstract: *To determine prevalence of bleeding disorder in patients reporting to department of oral & maxillofacial surgery. A study was conducted to compare the case history, blood report and post –operative bleeding complications and a prospective double blind study was done on 600 patients. ASA Grade I patients underwent some selected haematological examinations like Complete Blood Count, Bleeding Time, and Clotting Time. To rule out is haematological investigations are needed before any minor oral surgical procedures or can be substitiuted by a clinical case history and examination?*

Keywords: *blood report, case history, minor oral surgery and post – operative complications .*

I.Introduction

Preoperative evaluation is an essential component of any surgery because it has the risk of acute blood loss and blood borne infections, which always evoke alarm to dental surgeon and patient. To ensure a safe and predictable treatment outcome before any surgery complete history, clinical examinations along with diagnostic tests are essential steps. Sometime a simple tooth extraction can cause disaster to the dentist & patient by means of uncontrolled bleeding. Fear of bleeding always remains the same in the mind of a dentist while performing a tooth extraction. To overcome this problem most of the dentists rely on case history completely but sometime case history does not reveal mild bleeding. If dentist have full knowledge about patient health so, dentist must be able to handle the intra – operative and post – operative complications. Preoperative evaluation of patient and decisions regarding choosing appropriate and specific pre surgical laboratory tests can be a daunting task and literature also did not reveal proper guidelines for the preoperative evaluation parameters of these patients. So, we decided to conduct a study to determine prevalence of bleeding disorder in patients reporting to department of oral & maxillofacial surgery.

II.Materials , Methods & Methodology

A prospective double blind study was done on 600 patients who seek minor oral surgical procedures in approximately 21 months ,patients were selected who met the inclusion criteria & gave written consent. Preoperative blood sample were taken and all blood samples were sent for Complete Blood Count (CBC), Bleeding Time (BT), and Clotting Time (CT) examination. Minor oral surgeries were done under local anaesthesia. Operating surgeon was blind and was unaware of patients case history and blood reports and actual amount of blood loss and patient was also consider as blind because he / she unaware about blood report. Evaluation was done by comparing blood report, case history with post-op bleeding complications.
Case history – relevant (history of trauma & hospitalization) / not relevant
Blood report – relevant / not relevant
Post-operative complications – present/ absent

2.1. Inclusion Criteria

1) Age -16 yrs & above.
2) Both sexes.
3) All minor surgeries.
4) ASA Grade I patients.

2.2. Exclusion Criteria

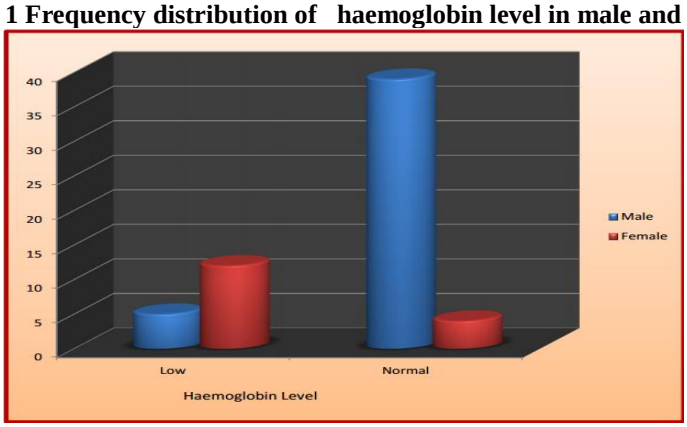
1) Refusal to give informed consent.
2) Refusal to give blood sample.
3) Immunocompromised patients.
4) Patients with known history of bleeding disorders.
5) Patients who are on anti-platelet & anticoagulants.
6) Pregnant women

III.**Result**

The data was collected and was evaluated in a computer controlled programme SPSS and using Chi-Square Test, Frequency distribution, Independent - t test, Karl pearson coefficient.

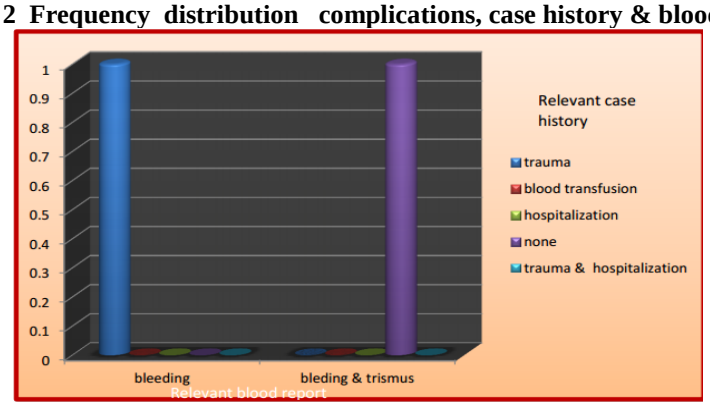
Graph 1 shows that the frequency distribution of haemoglobin level in male and female and on applying Chi-Square Tests we found that there is high significance between hemoglobin and gender as p =0.00 ($p<0.05$) which shows low haemoglobin level in females when compared with males.

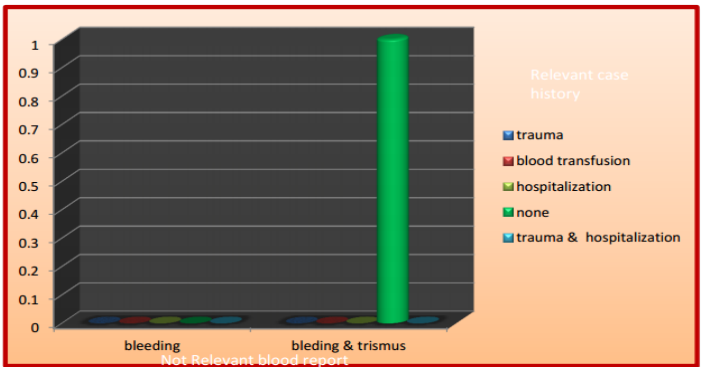
Graph 1 Frequency distribution of haemoglobin level in male and female



Graph 2 shows that the frequency distribution of post – op bleeding complications, case history & blood report and on applying Chi-Square Tests we found that there is a significant difference between post – operative bleeding complication, relevant case history & relevant blood report as P = 0.004 ($p<0.05$) which shows if patient give relevant case history & blood report also shows some abnormalities so, there must be chances of development of post – op bleeding complication.

Graph 2 Frequency distribution complications, case history & blood report





Graph 3 shows distribution of mean and S.D. of bleeding time on the basis of gender is 2.25± 0.488 and 2.38±0.500 respectively. Distribution of mean and S.D. of bleeding time on the basis of gender is highly significant in females but on applying INDEPENDENT - T TEST p= 0.38 which indicates that there is no significance between bleeding time and gender($p>0.05$).

Graph 3 Distribution of mean and s.d. of bleeding time on the basis of gender

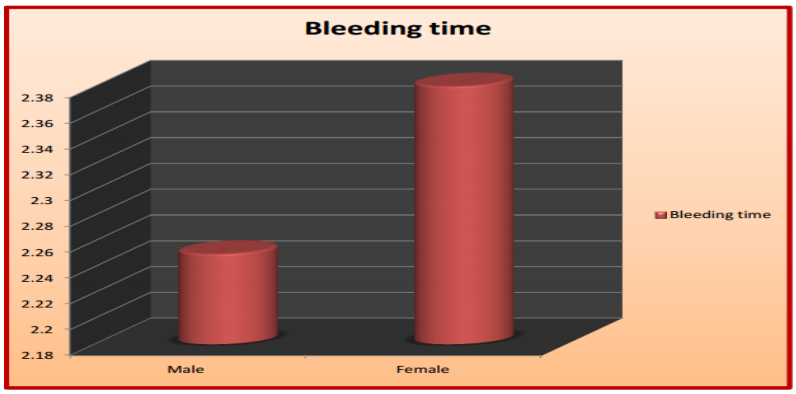


Table 1 shows correlation between bleeding time and age & on applying Karl pearson cofficient of correlation the value of r = -0.148 which indicate that there is negative correlation between bleeding time and age, with increase in age bleeding time will decrease.

Table 1: Karl pearson cofficient of correlation between bleeding time and age

		AGE	BLEEDING TIME
AGE	Pearson Correlation	1	-.148
	Sig. (2-tailed)		0.26
	Number of patients	60**0**	60**0**

IV.**Discussion**

American Society of Anesthesiologists (ASA) define Routine preoperative tests as "the tests those are done in the absence of any specific clinical indication or purpose and typically include a panel of blood tests, urine tests, chest radiography, and an electrocardiogram (ECG)". An alternative to routine preoperative testing is a case history and physical examination with selective testing based on the clinician's findings.

In 2003, National Institute of Clinical Excellence (NICE) published guideline under the title "The Use of Routine Preoperative Tests for Elective Surgery" in which they concluded that Full Blood Count can be carried out in more major surgeries and Bleeding Time in cases where patients are taking warfarin or on dialysis & if patient have a family history of abnormal bleeding or evidence of liver disease or vascular disease. They emphasize the importance of case history before surgery. Benilde Cosmi et al in 2009 support the National Institute of Clinical Excellence (NICE) guidelines and found that for a good practice a detailed personal and family history of abnormal bleeding and physical examination are mandatory before any surgical or invasive procedures and multiple or complex extractions or those that are complicated by infections should be considered equivalent to interventions of minor surgery but laboratory tests are not appropriate in case of simple extractions while the bleeding history should be elicited. Keeping this thought in mind, In our study we compare case history with blood report and post –operative bleeding complications respectively, result shows that relevant case history has no correlation with blood report and an abnormal blood report does not show any correlation with post – operative bleeding complications but when comparing these three with each other we found that there is a significant difference between post – operative bleeding complications, relevant case history & blood report which indicate if a patient has a previous history of bleeding it is not compulsory that he/ she must have any abnormalities in their blood but if with the relevant case history blood report also shows some abnormalities, there may be the chances of development of bleeding post –operative complications in ASA (American Society of Anesthesiologists) grade I patients who underwent minor oral surgical procedures .

In the last 25 years, a lot of research has been carried out on this topic to find out the answers of some questions like when, where, what all tests has to be performed preoperatively in minor oral surgical procedures? To prevent the patient and the surgeon from the peri- and post- operative bleeding complications but till now no complete satisfactory guidelines are available to help the surgeon in this direction to prevent both patient and surgeon. A study of the maxillofacial literature also did not reveal proper guidelines on the preoperative evaluation parameters of these patients.

When we talk about bleeding complications, Bleeding Time is the most frequently used test for platelet function with Clotting Time (CT), Activated Partial Thromboplastin Time (aPTT) with Platelet Count.

Jorgensen VA, Dyerberg J, P lessen AS in their study concluded that bleeding time appears to be shorter with age. In our study by applying Karl pearson cofficient of correlation which shows negative correlation between these which indicate as age increases there is decrease in Bleeding Time.

Bain B and Forster T concluded that women have longer bleeding time than men. In our study of 60 patients 16 were females & we also found that Bleeding Time is longer in females 2.38 when compared with males 2.25.

In 2009 P Kinra, V Tewari, AVM, TS Raghu Raman also support the Day james H study & concluded that Bleeding Time & Clotting Time as a screening tests are not fully satisfactory to rule out mild forms of bleeding diathesis, careful history taking & examination can rule out bleeding disorders especially when minor surgery is planned but in our study when we compared relevant case history with an abnormal blood report there was no correlation between blood report & relevant case history but when we compared post – operative bleeding complications with case history & blood report we found that there is a highly significant correlation between these which shows that if patient has a bleeding disorder history and an abnormality in platelet, Red Blood Cells count there must be chances of development of post- operative bleeding complications.

In 2001 Aledort M. Louis, Green David and Teitel M. Jerome recorded two cases of unexpected bleeding after dental treatment. Although in our study we had not report any severe bleeding after minor surgical procedures but after comparing post – operative bleeding complications, case history & blood report we found that pre – operative blood examination and a complete case history help the surgeon to find out the risk of post – operative bleeding complication in minor oral surgical procedures.

In 1989, Burns R. Edward and Lawrence Christine concluded that emphasis should be placed on excessive bleeding history as a haemostatic screening preoperatively but in our study we found that there is no correlation between relevant case history and not relevant blood report which shows that it is not compulsory that if a patient give any bleeding history related to previous incidence he / she have any bleeding disorder. Our study support the Aledort M Louis case report in which they concluded that patient who never have a history of excessive bleeding may bleed more and their blood report also shows normal results.

Day james H and Rao koneti in 1986 after a literature review found that a careful history and physical examination plays an important role in determining whether a patient has a defect in platelet function & if the platelet count is normal, BT is the most important test as it reflects role of platelet in haemostasis (in vivo) but with a prolonged Bleeding Timeand a normal platelet count, platelet aggregation and secretion tests are usually indicated.

In 1985, Kaplan and colleagues in a retrospective review demonstrated that out of 2000 patients, 60% patients had laboratory tests ordered for no apparent reason and only 0.22% of the abnormal results influenced preoperative management. In our study when we compare relevant blood report with post – operative bleeding complications there was no significance between these which shows that negative blood report does not help to predict the post – operatively bleeding complications always.

V.**Summary & Conclusion**

The aim of every dentist is to provide a painless and complication free treatment to their patients with comfort. We carried out a study on 600 patients who reported to us for the minor oral surgical procedures like surgical extractions, soft tissue biopsies, dento-alveolar fractures, removal of IMF and arch bars, apicectomies etc. ASA Grade I patients underwent some selected haematological examinations like Complete Blood Count, Bleeding Time, and Clotting Time. To rule out is haematological investigations are needed before any minor oral surgical procedures or can be substitiuted by a clinical case history and examination??

Our study suggested that prevalence of bleeding disorder patients reporting to oral surgery is relatively low as patients suffering from bleeding disorders already got information in early days of life, where as proper case history can also reduce the chances of pre-operative investigations.

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