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Case Report

Polycythemia vera: Gingival and periodontal manifestations and management – A case report

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ABSTRACT

Background: Polycythemia vera is a rare case confronted in dentistry with scarcely available case reports. Hence a scrupulous knowledge of it is inevitable. It is a myeloproliferative disorder characterized by excessive proliferation of erythroid elements, granulocytic and megakaryocytic cells. Here, the blood viscosity increases leading to menace of thrombosis. The medications often used include cytoreductive agents like hydroxyurea 500mg to reduce the leukemogenic risk and Ecospirin 75mg to lessen the thrombotic risk in artery.

Case Presentation: A 44-year-old male patient reported with a history of pain over the upper right back tooth region since two weeks. The pain was sudden in onset sharp intermittent non radiating aggravates on taking cold fluids and relieves by itself. He also complained of food lodgement around the same site. He is a known case of absolute polycythemia in the last 8 months, undergoing treatment with Ecospirin 75mg and frequently subjected to phlebotomy.

Conclusion: A synchronized endeavour by hemato-oncologist and dentist is required for dental treatments, peculiarly invasive therapies, in such patients. Further, an awareness of the medication used for the treatment is unavoidable.

1. Introduction

Polycythemia vera is a myeloproliferative disorder characterized by excessive proliferation of erythroid elements, granulocytic and megakaryocytic cells. Here RBC count rises upto 6 – 12 million/ mm^3 and hemoglobin concentration can shoot to 18- 24 g/ dL. Thereby, the blood viscosity increases leading to menace of thrombosis. Polycythemia can be either absolute erythrocytosis or relative erythrocytosis. In absolute erythrocytosis there is true increase in RBC with significant oral changes whereas, in relative polycythemia RBC count remains normal with reduced plasma volume attributed to loss of tissue and intravascular fluids, hemoglobin concentration more than 25% and no appreciable oral changes.[1]

This is a case study of a male patient reported with a chief complaint of pain over the upper right back tooth region since two weeks. He provided a medical history of polycythemia since 8 months with antiplatelet treatment for the same.

2. Case Report

A 44-year-old male patient reported with a history of pain over the upper right back tooth region since two weeks. The pain was sudden in onset sharp intermittent non radiating aggravates on taking cold fluids and relieves by itself. He also complained of food lodgement around the same site. He is a known case of absolute polycythemia since 8 months, undergoing treatment with Ecospirin 75mg

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and frequently subjected to phlebotomy. On Intraoral examination supragingival calculus was noted between 16 and 17 and in relation to other teeth (Figure 1). Linear erythema over the marginal gingiva noted on 11,12,13,41,42,43 and 31 with plaque accumulation. (Figure 2) Bleeding on probing was Grade 1 in relation to 11, Grade 2 with respect to 21 41 42 43, Grade 3 in regard to 12. Cervical caries was found on 47, root stump on 27. In addition, root canal treated 25,16 ,24 with fractured restoration, prosthetic crown on 26 and missing tooth in relation to 15 were noticed. Intraoral radiograph of 16 showed fractured restoration with horizontal bone loss on the distal area, 47 with secondary caries involving pulp, 24 displayed under obturated canal with a lesion on periapex.

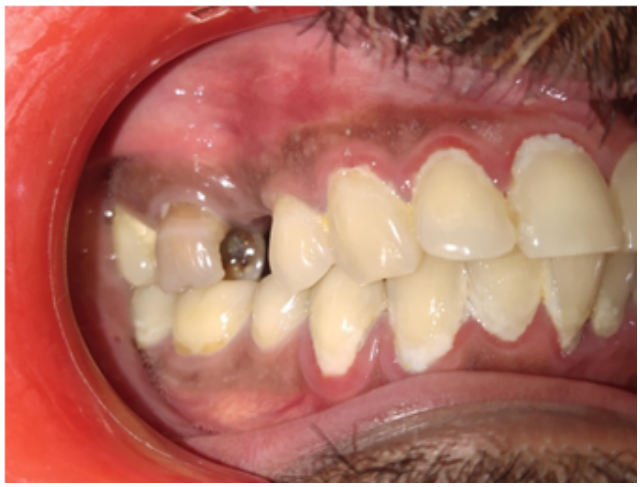

Fig. 1: Showing supraginival calculus in relation to 16-17

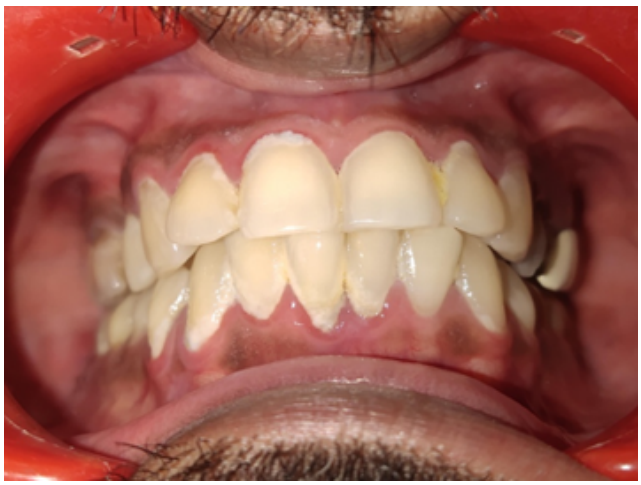

Fig. 2: Showing linear erythema over marginal gingiva inrelation to 11,12,13,31,42,43 region

The treatment plan advised to patient were full mouth oral prophylaxis with extraction of root stump 27 and fractured 25, restoration of 16, root canal treatment of 47, re- RCT of 24 and rehabilitation of missing teeth. The patient was referred to hemato-oncologist for evaluation of medical fitness and suggested entire blood investigations. Patient reported back to the department after stoppage of Ecospirin under physician's consent for 5 days and with blood investigations which showed normal values except increased RBC (6.6 million /mm^3). According to the formulated treatment plan, supragingival scaling was done following oral cavity disinfection with Betadine mouthwash. Patient was prescribed antibiotics (Cap. Mox 500mg) tid and betadine mouthwash bd for 3 days to prevent anticipated infections.

3. Discussion and Conclusion

Polycythemia vera is a rare case confronted in dentistry with scarcely available case reports. The risk factors associated with PCV comprises age more than 60 yrs and men. It affects 1 to 2 persons per 100,000 with a prevalence of 22 persons per 100,000.[1] Unlike to normal age predilection, the subject in our study is in the middle age. Primary polycythemia vera occurs due to mutation of JAK 2 (Janus Kinase 2) gene. The oral manifestations of patients with polycythemia vera encompasses pale mucosa or purplish red discoloration of tongue and oral mucosa, relative keratosis, different forms of candidosis, mucosal ulcers, gingival bleeding and various degrees of gingival enlargements.[2,3] Other more commonly observed signs and symptoms are hematocrit more than 52%, hemoglobin level more than 18g/dL, plethora, pruritis after bathing, splenomegaly, weight loss, sweating, transient neurologic complaints which includes headache tinnitus dizziness blurred vision paresthesia, and atypical chest pain. Bruising or epistaxis, Budd-Chiari syndrome, erythromelalgia, gout, hemorrhagic events, hepatomegaly, ischemic digits, thrombotic events are less commonly seen. Nonspecific complications include stroke, heart attack, DVT, pulmonary embolism.[1]

The treatments undertaken by those patients are of prime importance as far as dentistry is engrossed. Thence a scrupulous knowledge on the same is inevitable. The medications often used include cytoreductive agents like hydroxyurea 500mg to reduce the leukemogenic risk and Ecospirin 75mg to lessen the thrombotic risk in artery. In addition, patient can be under H2 receptor antagonists to relieve gastrointestinal symptoms of ulcerations and Cetirizine for existing allergic symptoms.[1] Hydroxyurea is known to cause ulcers as it has an antiangiogenic effect on blood vessels, erythema, depapillation of tongue and rarely oral pigmentation.[4] A synchronized endeavour by hemato-oncologist and dentist is required for dental treatments, peculiarly invasive therapies. A hematocrit value between 42% to 52%, normal blood volume, platelet count under 600,000 and a hemoglobin concentration below 16g/dL is prescribed before any therapies.[5] Polycythemia ought to be

well controlled before any invasive procedures as reports disclose incidence of bleeding or thrombotic problems in 75% of uncontrolled PV patients wherein 33 % succumbed due to the complications.[6]

Unlike hemophilia or any other coagulation deficiencies, nerve block anesthesia is preferred to multiple periodontal injections due to less concern of causing hematomas or hemarthroses and increased number of puncture wounds.[7] However, certain studies disaccord with aforementioned endorsing the use of LA with vasoconstrictor and mandatory use of aspirating syringe if nerve block is indicated.[8] Moreover, in accordance with the accessible case reports atraumatic dental treatments can be performed uneventfully in patients with controlled polycythemia. As opinioned by Badner M et al., for dental procedures forecasting bleeding like periodontal scaling usage of local hemostatic agents are recommended with care of one quadrant at a time.[3] After procedures in particular dental extractions, employment of well placed sutures, surgicel or gelfoam for hemostasis are satisfactory.[9] Furthermore, prophylactic use of antifibrinolytic agents like Tab tranexamic acid 500mg qid 1 day before extraction procedure to prevent hemorrhagic event has been recorded in a case report.[1] Delayed onset of bleeding after 5 to 10 days of paradoxically uneventful surgery should be expected necessitating postoperative assessment for at least 10 days.[3]

4. Source of Funding

None.

5. Conflict of Interest

None.

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