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Short Communication

Platelet-Rich Fibrin (PRF): Can It Be a Potential Indicator for Some Blood Disorders?

Akeel Mosea*

Consultant oral surgeon, Colchester Dental Specialist Centre (Bupa Platinum) 841 The Crescent. Colchester business park, Colchester CO4 9YQ, United Kingdom.

***Corresponding Author**: Akeel Mosea, Consultant oral surgeon, Colchester Dental Specialist Centre (Bupa Platinum) 841 The Crescent. Colchester business park, Colchester CO4 9YQ, United Kingdom.*

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The utilization of Platelet-Rich Fibrin (PRF) is becoming increasingly prevalent in oral surgery and implantology. Blood is often described as the body's health mirror, and it may present a unique opportunity for the dental professional to detect potential blood disorders through the examination of PRF while in the tube. Though this approach is simple, up to our knowledge, it is novel, and yet to be explored.

PRF is created by centrifuging blood to segregate its components based on density.

Red Blood Cells (RBCs), being the heaviest, settle at the bottom, while Platelets, being the lightest, rise to the top. White Blood Cells (WBCs) are located somewhere in the middle layer. The PRF, a yellowish layer at the top, contains platelets, WBCs, some stem cells, and growth factors, all embedded in a fibrin network (1, 2). PRF can be used in various forms—liquid or solid—for enhanced wound healing, regeneration of tissues, facial rejuvenation and many other applications (2).

Normal haematocrit levels are between 40%-54% in men and 36%-48% in women (3). For instance, Figure 1 illustrates a solid PRF from a healthy 32-year-old male, while Figure 2 shows an abnormal PRF from a 75-year-old male who needed PRF for a routine oral surgery procedure. The latter`s PRF revealed a reduced RBC count (the red part was less than 30% of tube content volume), and a pale, larger PRF with suboptimal mechanical properties.

Figure 1. *Solid PRF taken from a healthy 32-year-old male patient.*

Figure 2. *Abnormal solid PRF taken from a 75-year-old male patient.*

That patient, upon further questioning, reported fatigue, shortness of breath during exertion, and poor appetite. A full blood count subsequently revealed anaemia, and further testing confirmed multiple myeloma.

As the use of PRF becomes more widespread among dentists, there is an opportunity to assess blood health by visually inspecting PRF before extraction.

The clinician must be mindful that variations in PRF size can also be physiological, with larger PRFs observed in females and older individuals (4) Conversely, delays in blood draw or centrifugation can result in smaller PRFs (4). Clinical symptoms should be evaluated in conjunction with PRF size, and a full blood count is advisable if abnormalities are suspected. Given the novelty of this approach, further research and development is warranted.

Conflict of Interest

None declared.

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