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implants

international magazine of oral implantology

research
L-PRF in intraoral applications

case report
Computer-assisted implant rehabilitation of tumour patients

events
1st Future Congress in Dental Implantology

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Dr Rolf Vollmer

First Vice President and Treasurer of DGZI

How will we get better?— Visions in Implantology

Dear colleagues,

Under the premise of constant progress, the DGZI strives to stay on the pulse of current affairs for the years to come. To maintain our strong position, we intend to adapt educational structures to the most modern options and conditions. This includes curricula and training of dental technicians and congress organisation.

According to the principle "Visions in Implantology", the DGZI's 1st Future Congress for Dental Implantology will raise new questions, as well as try to provide answers and point out new directions through the interaction of participants, speakers and the industry. This new content claim is also reflected in an entirely new organisational concept. These modifications aim at future orientation, organisational modernity, content attractiveness and at a new mode of presenting perspectives combining viewpoints of science, practice and industry. In this way we intend to achieve a new level of interaction with practicing colleagues.

The 1st Future Congress for Dental Implantology will especially be dedicated to the question of what implantology might look like in five or maybe ten years. Ultimately, apart from addressing scientific and technological aspects, it will also focus on strategic questions with regard to the future implantological practice. The DGZI will thus prove once more its importance and appeal also regarding the 50th anniversary of its foundation in 2020. Renowned national and international speakers, friends from international specialist societies, industry partners and of course the participants from Europe, Asia and the Arab countries will create and experience an exceptional, innovative educational event.

Save the date
1st Future Congress for Dental Implantology
28–29 September 2018 in Düsseldorf, Germany

On behalf of our board of directors we would cordially like to invite you, already today, to the DGZI's 1st Future Congress for Dental Implantology (48th international annual congress) on the 28 and 29 September 2018 at the Hilton Hotel Düsseldorf in Germany. Save the date, get excited and let yourself be surprised.

Yours,

Dr Rolf Vollmer

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L-PRF in different intraoral applications

Part I: Preparation of L-PRF

Prof. Nelson R. Pinto[1], Dr Andy Temmerman[2], Ana B. Castro[2], Simone Cortellini[2], Prof. Dr Wim Teughels[2] & Prof. Dr Marc Quirynen[2]

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Favourable wound healing has always been a major quest in dental surgery. It is a concern in healthy as well as compromised patients. In an effort to improve and accelerate healing of both hard- and soft-tissues, substitutes including growth factors and biomaterials have been traditionally employed. Membranes were also introduced to separate tissues.

Recent research clearly indicates that L-PRF (leukocyte- and platelet-rich fibrin, a second generation of platelet concentrates) significantly enhances wound healing in both soft- and hard-tissues. Evidence now supports the assertion that this has the potential to replace the above mentioned substitutes in many situations.

Clinical procedures benefit from recent advancements with platelet concentrate protocols including, but not limited to: soft tissue healing, plastic periodontal surgery, gingiva enlargement, MRONJ, regeneration of infra-bony defects, ridge preservation, sinus augmentation, immediate implant placement and implant osseointegration itself.

An added benefit is that these platelet concentrate protocols offer significantly lower cost treatment solutions to our patients, due to the fact of their ease of use and inexpensive preparation.

Major indications for the use of L-PRF are

- Implant coating
- Wound healing
- Ridge preservation
- Immediate implant
- Floating implant
- Soft tissue R
- MRONJ
- Sinus R
- Infra-bony R

Major indications

Our basic knowledge of the biologic mechanisms of both soft- and hard-tissue healing has increased exponen-

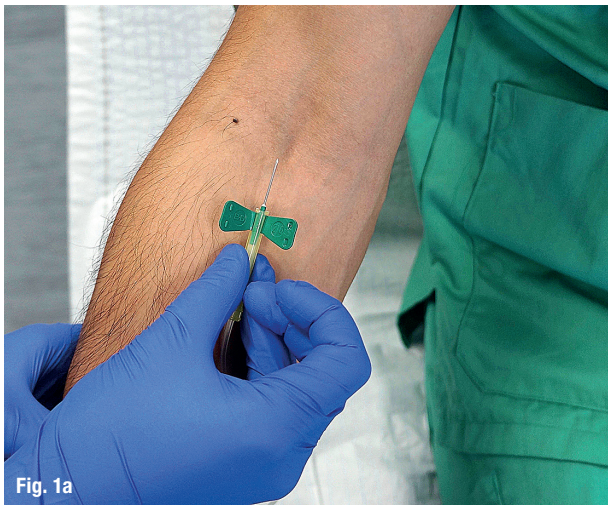
Fig. 1a

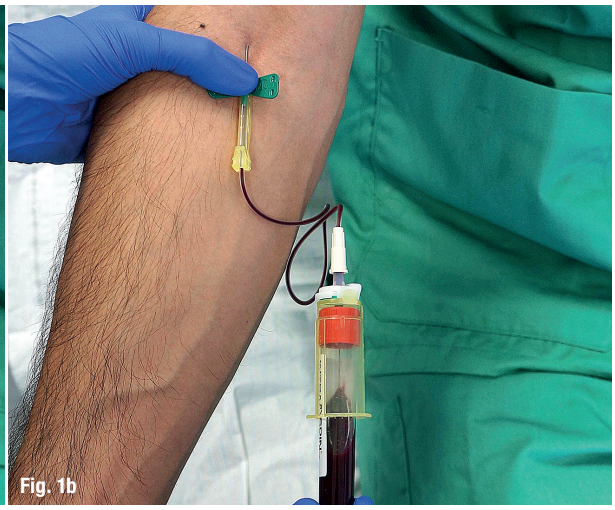
Fig. 1b

Figs. 1a & b: Venipuncture and blood collection using 21 G butterfly needle and 9 ml red cap tubes.

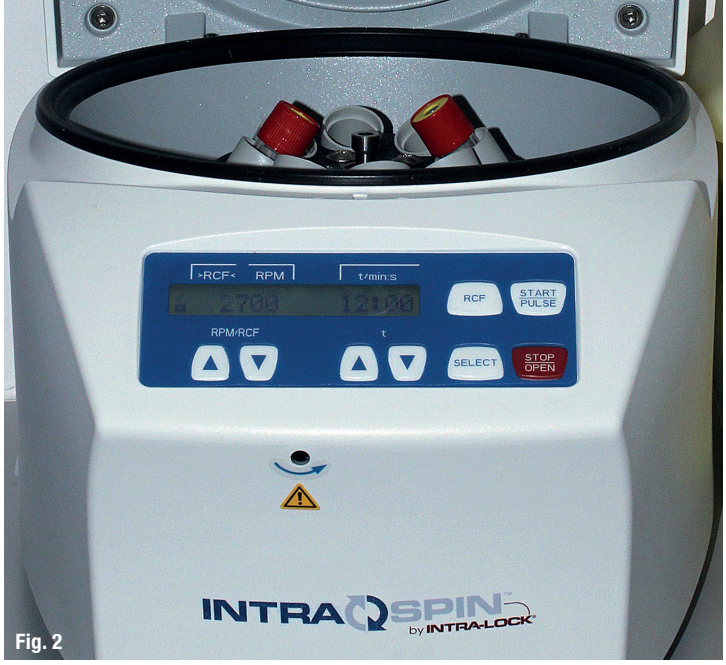

Fig. 2

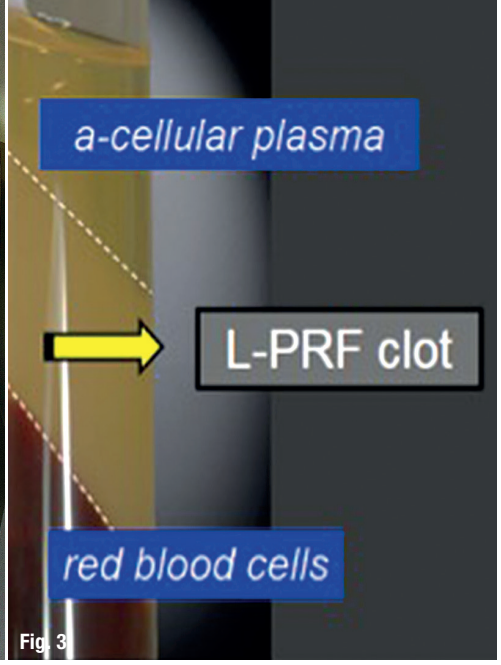

Fig. 3

Fig. 2: Centrifugation at 408 g RCF, (2,700 rpm) with IntraSpin™ centrifuge. **Fig. 3:** L-PRF clot in tube; clear separation: red blood corpuscles (RBCs) at the bottom, PPP (platelet-poor plasma) on the top, and L-PRF fibrin clot in the middle.

tially in recent years. Advancements in autologous platelet concentrate protocols, profoundly impact the way we treat patients today.

Thanks to these advancements we can now introduce a new level of treatment options to our daily practice, from periodontal procedures to regeneration of bone defects and even implant osseointegration itself.

Step by step approach for the preparation of L-PRF

Protocol for preparation of L-PRF clots

- Venipuncture: With a 21 G butterfly needle collect up to eight 9 ml red cap tubes of blood (Figs. 1a & b).
- After the first two tubes of blood are collected, immediately place them into the IntraSpin™ centrifuge,

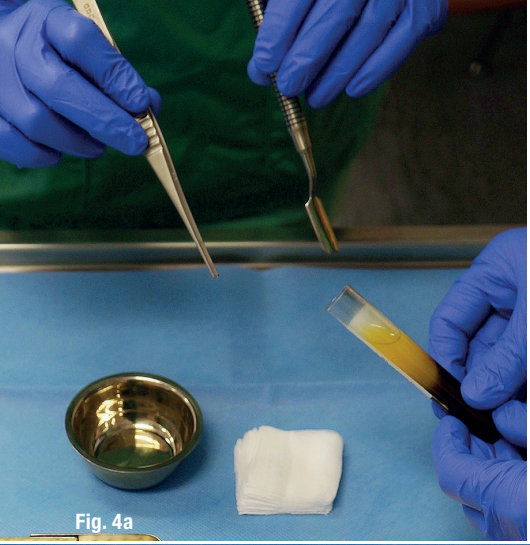
Fig. 4a

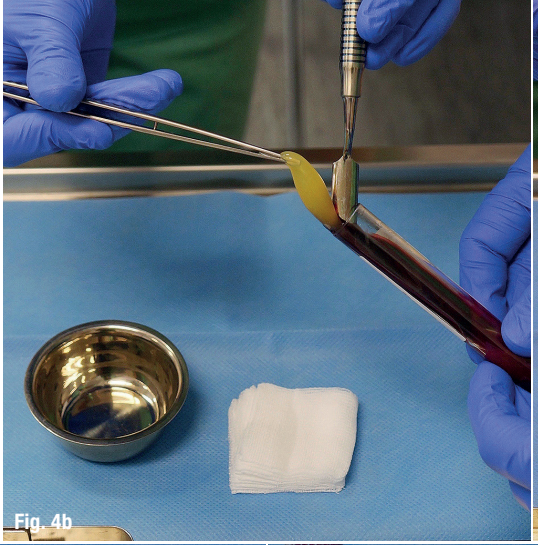
Fig. 4b

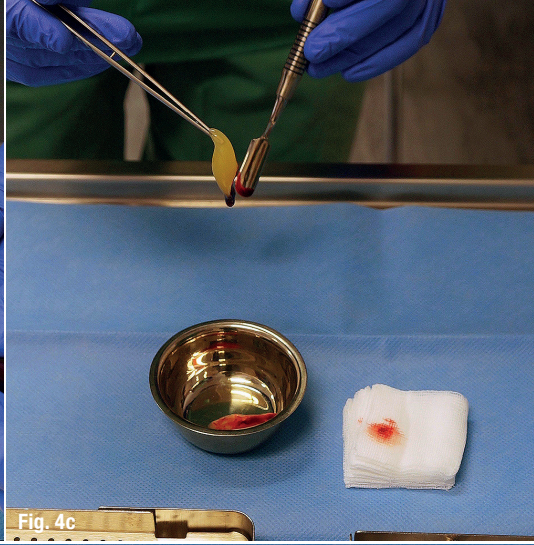
Fig. 4c

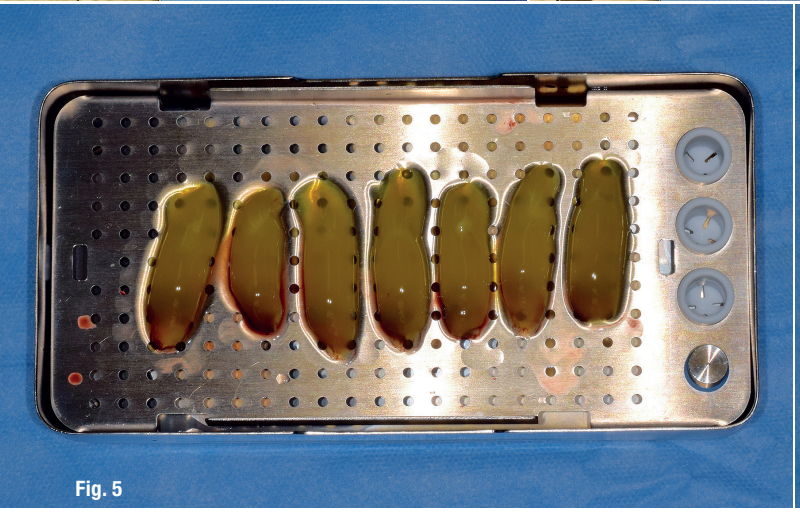
Fig. 5

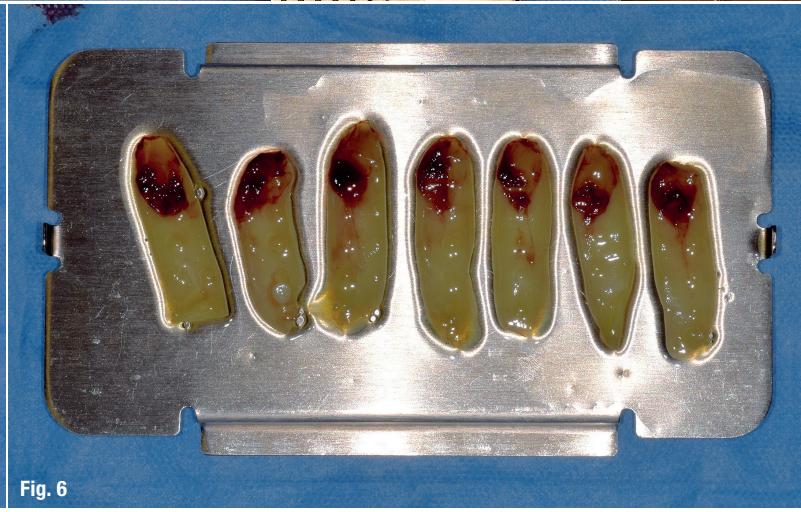
Fig. 6

Figs. 4a–c: Remove clot from tube and separate clot from red blood cells. **Fig. 5:** Specially designed kit (Xpression™ box) to compress L-PRF clots into L-PRF membranes with a consistent thickness of 1 mm. A piston and cylinder assembly (right) can be used for the creation of L-PRF plugs, suitable for filling extraction sockets. **Fig. 6:** L-PRF membranes after gentle compression: the red area of the membrane represents the face side where most leucocytes, platelets and stem cells are concentrated.

opposite to each other to ensure the centrifuge is properly balanced. Close the cover and set the timer to one minute. Press START and allow the centrifuge to run for one minute, it will then come to a full stop and the cover will pop open. While it is spinning for one minute collect the third and fourth tube of blood from patient, and repeat the procedure for the other tubes.

- Centrifugation should be at 408 g (2,700 rpm using the IntraSpin™ centrifuge, for at least 12 minutes (start timing after loading the centrifuge with the last two tubes, Fig. 2).
- After 12 minutes of centrifugation (for patient taking anti-coagulant medication up to 18 minutes are recommended) L-PRF clots are ready (Fig. 3).
- Take the fibrin clots out of the tubes and separate them from the red blood cells (Figs. 4a–c).

Protocol for preparation of L-PRF membranes

- Place fibrin clots in Xpression™ box for gentle compression by gravity (e.g. with light metal plate, Fig. 5).
- Five minutes later the L-PRF membranes are ready for use (Fig. 6).
- The viability for expressed membranes is 2.5 to 3 hours, as long as they are re-hydrated with exudate.

Protocol for preparation of L-PRF plugs

- Place fibrin clots in the small white cylinder of the Xpression™ box.
- Use the piston to carefully compress the clot, until holder is level to cylinder.
- The viability for expressed plugs is 2.5 to 3 hours, as long as they are re-hydrated with exudate.

Editorial note: To be continued in implants 2/18 with application approaches for open flap debridement and ridge preservation.

For further information visit: www.ENHD2018.be

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