Surgical pearl: Using tuberculin syringe for withdrawing fibrin-plug in platelet-rich fibrin (PRF) therapy

Problem

Platelet-rich fibrin (PRF) therapy is a useful treatment option for a variety of non-healing ulcers. PRF secretes a number of growth factors such as platelet-derived growth factor, transforming growth factor beta 1, vascular endothelial growth factor and insulin-like growth factors, as well as cytokines and matrix glycoproteins such as thrombospondin 1, fibronectin and vitronectin.[1] One of the logistic challenges encountered during the procedure is removing the fibrin plug from the test tube. Often, it is impossible to fit commonly available non-toothed dissecting forceps into the tube; hence small-sized forceps are utilised to remove the plug. Even with the small forceps, it is difficult to grip the fibrin plug as it slides quickly and falls back into the tube, making the process tedious.

Solution

To address this issue, we propose extracting the fibrin plug from the tube with a one-ml tuberculin syringe. Blood is collected in a sterile test tube and spun for 10 minutes in a centrifuge at 3000 revolutions per minute (RPM). When platelet-rich fibrin is ready, a one-ml tuberculin syringe without a needle is introduced into the test tube, and once in contact with the fibrin plug, suction is applied on the syringe and it is withdrawn from the tube and placed over the wound [Figure 1]. Because a suction mechanism with a syringe is used, the entire platelet-rich fibrin plug comes out quickly and without deformation [Figure 2 and Video 1]. This procedure can simplify and expedite the entire process.

Figure 1: Tuberculin syringe used to pull out the fibrin plug from the test tube.

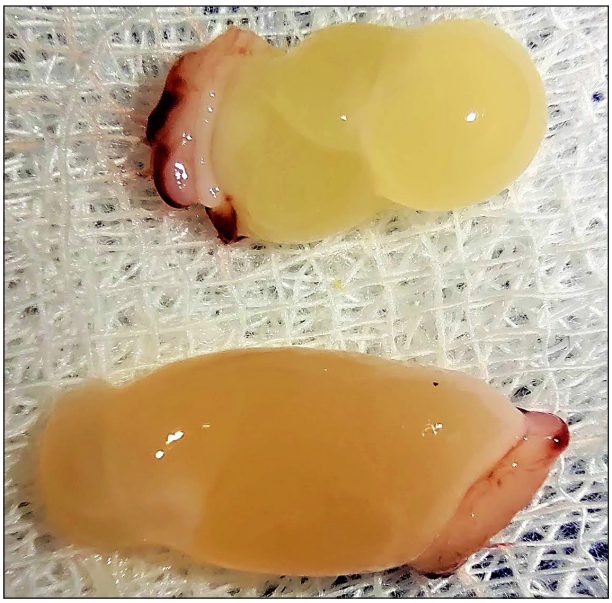

Figure 2: Platelet-rich fibrin plug.

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Declaration of patient consent

Patient consent not required as there are no patients in this study.

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Conflicts of interest

There are no conflicts of interest.

Use of artificial intelligence (AI)-assisted technology for manuscript preparation

The authors confirm that there was no use of artificial intelligence (AI)-assisted technology for assisting in the writing or editing of the manuscript and no images were manipulated using AI.

Video 1: Demonstration of platelet-rich fibrin plug withdrawal using tuberculin syringe in a lepromatous neuropathic ulcer.

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