Commentary: Platelet-rich plasma is a useful adjunct but with caveats

In this issue of the Indian Journal of Ophthalmology, Babu et al. compare the results of closing large macular holes with platelet-rich plasma (PRP) vs the inverted internal limiting membrane flap, and they find them to be equally effective in achieving anatomical closure and visual improvement.[1]

Inverting the internal limiting membrane has been shown to be rather effective in closing large idiopathic holes and other etiology macular holes.[2,3] One can also use other tissues to provide a scaffold for the retinal tissue to grow over and close the hole. Anterior and posterior lens capsules, free internal limiting membrane (ILM) flap, and amniotic membrane have been used for this purpose, and they have shown to be effective in achieving hole closure with modest visual results.[4–6] The amniotic membrane possibly also offers the same advantages of the PRP by providing growth factors that aid in macular hole closure. Often, these adjuncts are used to manage refractory macular holes; however, Babu et al. have used PRP in the primary surgery in surgical situations, wherein one may opt for the inverted flap technique.

The success of the inverted ILM flap technique depends on not only dexterously peeling the ILM right up to the edge of the hole but also ensuring that one does not peel it off the retina, a feat that may be difficult at times. It is in such instances wherein one peels off the ILM inadvertently when attempting inverted flap closure, the PRP technique may come to the rescue. However, the caveat here is that the PRP is not readily available and one has to plan in advance if contemplating the use of PRP in a given patient. The difficulty in drawing a large volume of blood in a patient lying on the surgical table, the associated stress to the already apprehensive patient in the process, the need for a trained venipuncture specialist to effect this, the need for a specialized PRP kit, transportation to the laboratory, availability of a trained technician in the laboratory, along with the requisite equipment and the time spent to prepare the PRP when the patient is still on the table, limit its use as an intraoperative option. It is also underlined by the need for an in-house laboratory, making it difficult for surgical suites that may not have access to a pathological laboratory for preparation of the PRP. It is also essential to sensitize the laboratory personnel to the need for perfect asepsis and to set up a protocol to achieve this—from cleaning the venipuncture site, segregation of the PRP specimen from potentially contaminated specimen in the lab, following absolute sterility procedures, and such. As outlined by the authors in the methods, certain patient factors, such as hepatitis B virus surface antigen (HBsAg) positivity, limit the universal use of this technique vs the other adjuncts.

It has been shown that PRP can be stored at room temperature in an intermittently agitated nonoxygen permeable container for nonocular use.[7] Such stored PRP may not be suitable for use within the eye, considering the risk of blinding complications, such as endophthalmitis. One can still plan to use PRP in the absence of in-house preparation facilities by transporting it from an off campus preparation facility, but the requisite conditions for safe transport remain to be defined still. How long after preparation the PRP remains effective for macular hole surgery and the appropriate storage conditions for transport and prevention of contamination are the factors that need further study, the results of which may facilitate the use of PRP in off campus surgical suites.

Despite the limitations, various studies, including the present one, have shown that PRP is a good adjunct to close large and refractory macular holes. Hopefully, the process of preparing PRP will become simpler in the future so that it can be prepared in an ophthalmic surgical suite, thereby widening its scope of use.

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