Inducing posterior vitreous detachment (PVD), as well as eliminating the traction forces affecting the central retina, are two of the main objectives of vitreous-retina surgery in the treatment of a number of pathologies such as refractory diabetic macular edema or macular hole. This type of surgery is not risk-free because, in addition to being technically complicated in some cases, even for expert surgeons, due to the strong adherence to the retina of the posterior hyaloid and the internal limiting membrane (ILM). In order to facilitate peeling the MLI and hyaloid, autologous plasmin began to be utilized as a surgery facilitator by injecting it intravitreous a few hours before the vitrectomy (1). In most cases, the technique proposed for obtaining the autologous plasmin was expensive, complicated and within the reach of very few hospitals. Recently, Rizzo et al published a simplified method for obtaining plasmin in just under one hour (2). On the basis of this technique and with a slight modification to reduce the toxicity derived from streptokinase, we utilized the autologous plasmin intravitreous injection not as a facilitator for the vitrectomy but as an alternative as exclusive surgical treatment (3).

For obtaining and preparing the plasmin, 7cc of venous blood are extracted and placed in a coagulation tube (blue top). In a laminar flow tube a 750,000 IU vial of streptokinase is diluted (Streptase®, Boehringer Labs) in 12 ml of serum. The dilution is incubated at 37ºC during 15 minutes. The blood is centrifuged at 4,000 rpm for 15 minutes to separate the cells from the plasma. 1 ml of previously diluted streptokinase (62,500 IU) are admixed with 4 ml of plasma. The mixture is agitated slowly for a couple of minutes and incubated again for 10 minutes at 37ºC.

In the operating theater and under sterile conditions an evacuation paracentesis is made prior to injecting 0.2 ml of autologous plasmin prepared through a Millipore filter of 0.22µ. Corticoids, antibiotic and topical beta-blocker are administered as post-op preventive treatment.

The autologous plasmin obtained by means of this technique achieves a total detachment of the posterior vitreous in approximately 80% of cases between the 4th and 7th day.

As conclusion, we believe that the autologous plasmin obtained through the above technique is easy to reproduce, efficient and accessible for virtually all centers.

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