

Platelet-rich plasma reduces bleeding, speeds healing

Plasma solution offers benefits for plastic and cosmetic procedures

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Delray Beach, Fla. — Platelet plasma solutions obtained from a patient's own blood continue to minimize bleeding and accelerate healing.

The technique is used in facelifts, laser resurfacing, hair transplants, abdominoplasty, breast surgeries, fat transfers, and other cosmetic surgery procedures.

Information surrounding this technique has made inroads in cosmetic surgery practices, according to Thomas L. Tzikas, M.D., a board certified facial plastic surgeon in private practice in Delray Beach, Fla.

He said the technique showed successful results in orthopedics and dentistry for some time. These fields use a platelet-rich plasma solution, obtained from a patient's blood sample containing a high concentration of growth factors required in healing and growing after bone grafts or dental implant surgeries.

After researching platelet-derived growth factors and witnessing their success in increasing wound strength, Dr. Tzikas began using the platelet solution sprays several months ago.

He primarily performs facelifts and has, therefore, used it mostly in those procedures. He also uses it in laser resurfacing and is just beginning to use it in hair transplants.

He found the primary overall benefits of the technique to be accelerated healing and decreased bleeding. However, the platelet solutions reveal specific benefits to each of the three cosmetic surgical procedures in which he uses the injections.

Plasma advantage

When Dr. Tzikas uses the platelet rich plasma in facelifts, he is able to remove sutures one or two days earlier than nor-

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mal and finds the incisions look more healed at an earlier stage than without them. He also uses fewer subcutaneous sutures because the platelet solution functions as a natural adhesive. In addition, Dr. Tzikas avoided the use of drains in his last 35 facelift patients and has not seen any hematomas or fluid collections in his patients.



Patient (left) is shown prior to endoscopic browlift, lower transconjunctival blepharoplasty, CO₂ laser resurfacing of the lower eyelid skin, fat transfer to the cheeks and nasolabial folds, GoreTex augmentation of the upper and lower lips, chin implant, and lower face/neck lift. Facelift incision (center) at day five postoperative, and at day 10 (right). (All photographs provided courtesy of Thomas L. Tzikas, M.D.)



This patient is shown (left) prior to undergoing an endoscopic browlift, upper and lower blepharoplasty, lower face/neck lift, CO₂ laser resurfacing of lower eyelid perioral region. (Three years later, the patient wanted the lower face and neck tightened more and underwent a lower face/neck lift only.) The same patient is shown at day one postoperative (center) and at day six postoperative (right).

For laser resurfacing, he noticed that patients have less redness in the areas treated where platelet-rich plasma is used.

With hair transplants, patients experience less discomfort and less scabbing as a result of the minimized bleeding provided by the platelet solutions, Dr. Tzikas stated.

These and other benefits are the result of a fairly new process in which 45 cc to 60 cc of blood are drawn from a patient who is about to undergo a facelift or similar cosmetic surgery. Larger blood volumes are needed for larger surgeries.

Dr. Tzikas noted the blood draw must occur prior to any cutting procedure. If blood is drawn after an incision, then platelets will change and aggregate at the incision site and will not concentrate in the blood sample drawn. He advised drawing the blood just as the patient is being anesthetized.

Dr. Tzikas has an assistant for separating red blood cells from plasma and

platelets, which takes from 15 to 30 minutes using a tabletop machine (SmartPrep by Harvest Technologies, Norwell, Mass.) that costs \$7,000 to \$8,000.

He said it's acceptable to begin the surgical procedure while the blood is being spun in the centrifuge.

The result of the spinning: a platelet-rich solution and a platelet-poor solution, both of which are used at different points in the surgical procedure.

Dr. Tzikas uses the platelet-poor solution, which is mostly plasma and serves as a hemostasis product, in a spray at the start of the procedure.

"For a facelift, I elevate the skin and spray the platelet-poor solution in the wound. It cuts down on bleeding," he said.

The platelet-rich solution is combined with calcium chloride and thrombin to create a platelet gel solution. Dr. Tzikas sprays this gel at the end of the procedure, before he closes and again at the incision site after suturing. This gel also provides

hemostasis and acts as a natural bonding agent between skin and tissue.

Dr. Tzikas said it is unclear if end results are superior, but he has been "really impressed with the healing" in patients who received the platelet solution. "In addition, since patients are bleeding less, cauterization is reduced which causes less trauma and therefore less post-op pain."

He added using the platelet solutions typically result in less swelling and bruising for the patient than traditional methods.

"There are not any real side effects because this is the patient's own [blood] product," Dr. Tzikas said.

As patients become more aware of this new technique, he said, they will start asking for it.

"This definitely will catch on. Anything that can accelerate healing, they're interested in, and it's a beneficial augmentation to a cosmetic surgery practice," Dr. Tzikas concluded. CST