Progressive Tension Sutures Eliminate the Need for Drains in Body Contouring Surgery

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Dr Pollock’s historical review of the progressive tension suture (PTS) technique and theoretical mechanism of seroma prevention in abdominoplasty is informative and well received. Any differences in technique described by Dr Pollock do not alter the basic clinical advantages of PTS: (1) flap stabilization with less disruption at the healing flap-fascia interface, reducing inflammatory fluid collections; and (2) uniform distribution of tension over the entire flap, theoretically enhancing vascularity. I have proposed a slightly different technique in my quest to provide aesthetic advantages as well (to be discussed below). As with many procedures in plastic surgery, our techniques evolve over time as a consequence of our experiences. Changing our techniques is often necessitated by the problems we encounter along the way. We are the beneficiaries of the thoughtful insight of those before us, and thus, as I teach our residents, there is no need to repeat the same mistakes we have made in our own experiences.

When I read Pollocks’ original paper in 2000, I decided to implement this strategy to prevent and manage seroma and its sequela with abdominoplasty procedures. To my satisfaction, this common complication soon became nearly non-existent on incorporation of this technique. Being naturally cautious and suffering from the fixed memory of many prolonged patient recoveries in my practice, I continued to utilize drains for many years despite the continued reassurances from Harlan Pollock in personal conversations that it was not necessary. I gradually began removing drains earlier and earlier postoperatively until I took the “bold” step of eliminating them completely many years ago, finding no substantial increase in inflammatory fluid collections. Concomitantly, I began employing PTS with lower body lift, thigh lift, and upper body lift procedures. It seemed easier to eliminate potential space (I prefer avoiding the word “dead” in my descriptions) with PTS in these procedures, and I abandoned the utilization of drains even sooner than with abdominoplasty without any noticeable increase in seroma. I am not aware of any other papers describing the utilization of PTS for upper and lower body lift procedures.

The near elimination of seroma after abdominoplasty with a properly performed progressive tension suture technique is now well established in the literature. It cannot be overstated that prolonged utilization of drains, serial aspiration, infection, and reoperation adversely affect our results and negatively impact the patient experience. I agree with Dr Pollock that a well-informed, savvy consumer, so easily facilitated by the internet, now seeks out plastic surgeons who have abandoned the utilization of drains. Although this alone does not justify the abandonment of drains (ie, “first do no harm”), it is certainly motivation to examine our conventional approaches when other techniques have established safety. It is true that, once the learning curve has been compressed, an additional 15 minutes is required for placement, a relatively small time commitment for the benefit derived.

In response to the issue of suture type and quantity of PTS needed, a review of my entire technique is necessary. I agree with Dr Pollock that PTS placed in Scarpa’s fascia (not the dermis) resolve relatively quickly (in weeks)
in most circumstances. Occasionally, in my experience, with careful scrutiny of the flap, some dimpling may require 2 to 3 months to resolve, probably a result of the longer-lasting polydioxanone (PDS) that I favor. The superior sliding allows easier tension adjustment, and the longevity of PDS assists in my overall strategy for both seroma reduction and anatomical definition when placing PTS. A suture with shorter longevity such as Vicryl or Moncryl might provide reassurance for those apprehensive about dimpling.

In my previous paper published in 2015 in the Aesthetic Surgery Journal, I described an “anatomy-defining” application of PTS. Combined with direct differential sub-Scarpa’s lipectomy, I employ additional running and interrupted PTS in an effort to enhance definition of the linea alba and linea semilunaris, respectively, and to deepen the external oblique fossa laterally. In my experience, splinting or fixing the differentially thinned flap with a long-lasting (PDS) suture enhances abdominal definition, creating improved aesthetics and patient perception of a less surgical and more authentic appearance. In addition, the slightly greater number of sutures I have recommended allows more thorough flap advancement and uniform skin tone over the entire abdominal wall, reducing the potential for residual upper abdominal skin laxity.

Likewise, I have found that the utilization of PTS with upper and lower body lift surgery has made the experience more tolerable for patients and results more consistent, with fewer major and minor wound-healing complications interrupting recovery. As subjective validation, I am more confident when recommending these procedures to patients, knowing that I can successfully meet my patients’ and my own expectations.

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