
Reply: Vaginal Labiaplasty: Current Practices and a Simplified Classification System for Labial Protrusion

*Sir:*

We would like to thank Dr. Mayer for his commentary1 on our article, “Vaginal Labiaplasty: Current Practices and a Simplified Classification System for Labial Protrusion.”2 Dr. Mayer’s commentary highlighted an innovative labiaplasty technique, bidimensional labia minora reduction.3–5 This technique, which uses deepithelialization to reduce the labia minora anteriorly and a wedge resection to address redundant labial tissue more posteriorly, may be effective in addressing class I and class II labial protrusion.

By combining deepithelialization with wedge resection, bidimensional labia minora reduction offers several advantages that were emphasized in Dr. Mayer’s discussion. This technique should thus be included among the techniques used by the aesthetic and reconstructive plastic surgeon when addressing the labia minora. We would like to highlight two concerns, however, in light of a recent cadaveric study that elegantly described the vascular anatomy of the labia minora and suggested clinical correlations with complications following labiaplasty procedures.6 Using computed tomographic and rotational angiography to study the blood supply to the labia minora in 11 fresh cadavers, Georgiou et al. described four critical arteries:

- A dominant, central labial artery, the “C” artery, that on average emerged along the 55th percentile of the length of each of the labia minora in the anteroposterior dimension.
- A smaller, anterior labial artery, the “A” artery, emerging at the 76th percentile.
- Two smaller, posterior labial arteries, the “P1” and “P2” arteries, emerging at the 17th and 32nd percentiles, respectively.

The authors also noted that the arteries to the labia minora run superficially, just deep to the mucosa of the labia minora. Furthermore, the pudendal nerve branches that traveled to the labia minora were noted to consistently run along the anterior labial supply.

As we discussed in our article, the essential goals of labiaplasty procedures should include the reduction of the labia minora with maintenance of the neurovascular supply, preservation of the introitus, optimal color/texture match, and minimal invasiveness. To this end, it is our preference to use the direct excision,7 central wedge,8 or extended central wedge techniques.9 The findings of the study by Georgiou et al. shed light on the neurovasculature of the labia minora and raise concerns regarding posterior wedge and deepithelialization techniques. The posterior wedge technique may disrupt the dominant, central labial artery, leaving a large, anteriorly based flap that relies only on the anterior labial artery for its blood supply, in turn raising the risk for wound complications. Indeed, in the study by Munhoz et al. describing inferior wedge resection and superior pedicle flap reconstruction in 21 patients, the authors recorded dehiscence in two patients (9.5 percent) and distal flap necrosis in one patient (4.8 percent).10 Georgiou et al. also noted that because the arteries and nerves of the labia minora run superficially, they may be easily disrupted during deepithelialization. It should be noted, however, that in our systematic review of the available clinical data on vaginal labiaplasty, wound complications following deepithelialization were minimal and no studies noted reduced sensitivity.

We appreciate Dr. Mayer’s commentary on our article and his description of this innovative technique. Dr. Georgiou and colleagues’ recent article describing the vascular anatomy of the labia minora does, however, raise questions, especially with regard to the posterior wedge technique. We encourage Dr. Mayer to share his data and outcomes using bidimensional labia minora reduction, to further strengthen the current body of knowledge and better elucidate best practices in vaginal labiaplasty.

DOI: 10.1097/PRS.0000000000001666

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DISCLOSURE
None of the authors has a financial interest to declare in relation to the content of this communication.

REFERENCES

Can Oxygen Really Reduce Tourniquet-Associated Pain in Patients Undergoing Hand Surgery?

Sir:

In a double-blind, randomized, controlled trial assessing the effect of supplemental oxygen on tourniquet-associated pain, White et al.1 showed that, compared with air placebo, 50% inhaled oxygen was associated with a significant pain reduction and a significant prolongation of tourniquet tolerance time. Accordingly, they recommend oxygen to facilitate hand surgery under a tourniquet. Although many aspects of this study were well conducted, we believe that a limitation of study design restrains extrapolation of their findings to clinical practice.

This study was performed on healthy volunteers without regional anesthesia and sedation management. In contrast, hand surgery with tourniquet application is commonly executed under regional anesthesia and sedation management. It has been shown that regional anesthesia can attenuate tissue metabolism changes (e.g., increases in lipid peroxidation, creatine phosphokinase, and uric acid levels) and ischemia-reperfusion injury connected with tourniquet application in extremity surgery.2,3 Also, sedation drugs used frequently in clinical practice, such as propofol, midazolam, ketamine, and dexmedetomidine, can reduce tissue markers of ischemia resulting from tourniquet use and attenuate tourniquet-associated pain on healthy volunteers and patients undergoing extremity surgery.1–3

Actually, in this study, supplemental oxygen merely provides a moderate beneficial effect on tourniquet-associated pain, namely, a 29 percent mean reduction in tourniquet-associated pain on visual analogue scale scoring and a 6.5-minute prolongation of the tourniquet tolerance time to a visual analogue scale score of 40 mm or more. Because of the above study limitation, it is unclear whether this modest favorable effect can be achieved in patients undergoing hand surgery with tourniquet application under regional anesthesia and sedation management. Therefore, we argue that, before supplemental oxygen is recommended as an adjunct to attenuate tourniquet-associated pain in patients undergoing a procedure under an upper limb tourniquet, randomized controlled clinical trials are still required. If further clinical studies show a consistent beneficial effect of supplemental oxygen on tourniquet-associated pain, the implications for practice are vast.

DOI: 10.1097/PRS.0000000000001672

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DISCLOSURE
The authors have no financial interest to declare in relation to the content of this communication. No external funding was received.

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