

## Reply: Suprafascial 3 Zone Dissection of Internal Pudendal Artery Perforator Flap for Management of Rectovaginal Fistula

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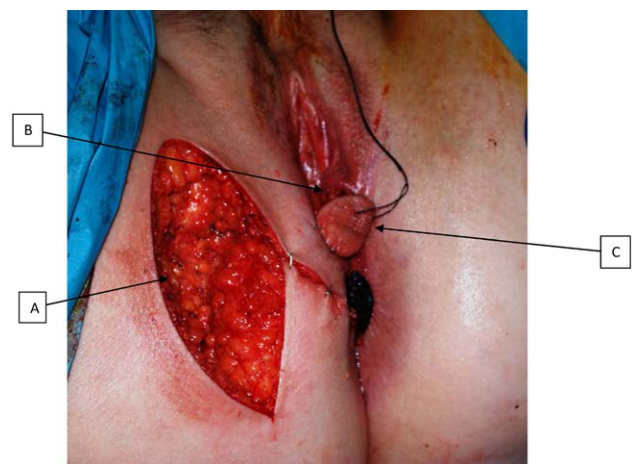
Sir:

**M**y colleagues and I would like to thank the researchers for their interest<sup>1</sup> in our study.<sup>2</sup> Although we agree that the named pedicle is the same, there are differences in the design and the technique of the Internal Pudendal Artery Perforator (IPAP) flap harvesting in this study compared with the studies mentioned in the comments. In our series, we presented a 3-dimensional inseting of the island IPAP flap to reconstruct 2 components, including the potential space in the rectovaginal septum after fistulectomy and the perineal skin deficiency simultaneously utilizing the multizone (3 zones) design (Figs. 1, 2), which, to our knowledge, was the first to be reported within this context and design. Anatomical considerations are crucial to restore the shape and function with the least morbidity. In addition, the flap was harvested in the suprafascial plane rather than the conventional subfascial to minimize the donor site morbidity, which, in general, is a critical anatomical consideration in basic principles of flap elevation. Notably, previous studies highlighted the advantages of performing suprafascial rather than subfascial dissection to reduce morbidity, as with the radial forearm flap, which has been reported as a new technique.<sup>3</sup> In the Wee et al,<sup>4</sup> Gordon et al,<sup>5</sup> and Monstrey et al<sup>6</sup> techniques, the flap was harvested with the deep fascia, and the epimysium of the adductor muscles with the consensus to avoid neuromuscular damage. Nevertheless, we felt that this approach was unnecessary to avoid additional morbidity to the donor site with no additional jeopardization to the flap vascularity, as shown by the results in this study. Furthermore, their flap design was based on 2 zones (proximal de-epithelialized zone under the labia and the distal fasciocutaneous island component) unlike our flap design, which

was based on 3 zones (proximal de-epithelialized zone under the labia, middle fasciocutaneous island zone to restore the perineum, and distal de-epithelialized zone



**Fig. 1.** Intraoperative photograph showing the surgical planning and marking before excision of the scarred deficient perineum post several failed attempts of conventional repair of rectovaginal fistula. Note the cloacal deformity at the vaginal introitus as a result of this extensive scarring. Subsequent plan was to repair the fistula and interpose the distal part of IPAP flap and concomitantly restore the perineal deficiency using the middle fasciocutaneous part of the IPAP flap.



**Fig. 2.** Intraoperative photograph showing post harvesting of the IPAP for management of a rectovaginal fistula and restoration of perineal deficiency secondary to scarring from previous attempts of surgical repair. A, Note the preservation of the fascia at the donor site post suprafascial dissection of the IPAP flap to reduce morbidity. B, Part of the de-epithelialized distal Zone (3) seen inlayed in the rectovaginal septum plane to obliterate the space and act as a well vascularized interfacing layer at the fistula repair between the mid vagina and rectum. C, The fasciocutaneous component (Zone 2) to restore the perineal deficiency.

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to obliterate the rectovaginal septum space at the site of the fistula repair). The technique used in our study has been clearly demonstrated in the operative consideration section of the text, accompanied figures, diagram, and video in the supplementary digital content section. Although constructive criticism is very welcomed to improve patient outcomes, I encourage researchers to be more thorough and to base their comments on better in-depth knowledge and understanding, especially with regard to the anatomical consideration and flap design. Finally, due to the word count limitation and reference as per the journal instruction, it was deemed unfeasible to include every study in the literature related to this topic.

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## DISCLOSURE

*The authors have no financial interest to declare in relation to the content of this article.*

## REFERENCES

1. Qiang S, Li FY, Zhou Y, et al. An ambiguous and misleading description. *Plast Reconstr Surg Global Open*. 2020;8:e2922.
2. Khalil HH, Malahias MN, Karandikar S, et al. Internal pudendal artery perforator island flap for management of recurrent benign rectovaginal fistula. *Plast Reconstr Surg Glob Open*. 2016;4:e841.
3. Avery CM, Pereira J, Brown AE. Suprafascial dissection of the radial forearm flap and donor site morbidity. *Int J Oral Maxillofac Surg*. 2001;30:37–41.
4. Wee JT, Joseph VT. A new technique of vaginal reconstruction using neurovascular pudendal-thigh flaps: a preliminary report. *Plast Reconstr Surg*. 1989;83:701–709.
5. Cardon A, Pattyn P, Monstrey S, et al. Use of a unilateral pudendal thigh flap in the treatment of complex rectovaginal fistula. *Br J Surg*. 1999;86:645–646.
6. Monstrey S, Blondeel P, Van Landuyt K, et al. The versatility of the pudendal thigh fasciocutaneous flap used as an island flap. *Plast Reconstr Surg*. 2001;107:719–725.