

AUTHOR REPLY

The Authors Reply

To the Editor—We read with great interest the letter from Roncati et al on the infra-mesorectum. Their comments certainly contribute to a better understanding the anatomy of the fasciae and tissues anterolateral to the rectum and surrounding the low rectum. As a matter of fact, the introduction into the practice of the transanal approach to mesorectal excision pushed surgeons and anatomists to have an accurate insight of the pelvic anatomy, the knowledge of which is of utmost relevance for achieving radicality in cancer surgery.

The area described by Roncati is one of the sites of surgical wasting in the specimen obtained after abdominoperineal excision as described by Salerno and coworkers¹ in 2008. This area is often associated with high positive margin rates.

The annular distribution of fasciae and spaces around the rectum and mesorectum has been extensively described.^{2–4} The mesorectum is carpeted on its posterolateral aspect by a fibrous envelop, the 2 leaves of which, the proper rectal fascia and the presacral or parietal fascia, border the avascular retrorectal space, the so-called *holyp plane* described by Heald. On its anterior aspect, the mesorectum and, more caudally, the rectal wall are carpeted by a membrane mainly consisting of connective tissue, corresponding to the Denonvilliers fascia.

Just above the pelvic diaphragm, Furubayashi and coworkers⁵ describe a complex and intricate connective tissue between the prostate and the rectum that continues the connective tissue surrounding the seminal vesicles in males.

Similarly, in females, the posterior vaginal wall and the anterior rectal wall are connected by connective and muscular tissue, the thickness of which may vary, that is characterized by a more complex structure than it is usually believed. Opposite to what is described by Fritsch et al,⁶ who consider the rectovaginal septum a nonsupportive, thin, connective structure, we indeed found in our experience of over 150 *transanal total mesorectal excisions* that the structure of this septum has a specific architecture consisting of connective tissue and 1 central fibrous-muscular pillar that extends up to the uterosacral ligaments, contributing to the suspension of the vagina and supporting the pelvic floor (Fig. 1).

The approach to distal rectum in very low rectal cancer may be cumbersome because of several anatomical constraints, not only in open surgery, but also in laparoscopic surgery.⁷ The transanal approach to rectal dissection with total mesorectal excision may overcome those constraints. Just as maximum care is needed to preserve extrinsic autonomic nerves to the urogenital organs and the internal sphincter that run close to the lowest portion of the rectum, so surgeons should avoid damaging the pillars embedded in the rectovaginal septum during dissection. Intact pelvic floor muscles and an undisturbed perineum play a key role in the support of the pelvic viscera, as was already stressed by Fritsch and coworkers⁸ in 2004. Pneumodissection during the transanal caudal-to-cephalic approach helps preserve those structures by opening the correct surgical plane.

Extralevator abdominoperineal excision, mentioned by Roncati et al, may result in superior oncologic

F1

AQ2

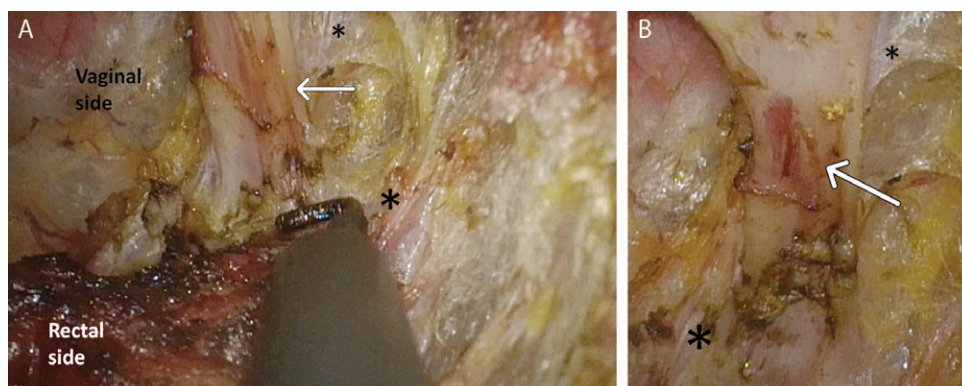


FIGURE 1. A, Anterior dissection during transanal total mesorectal excision. Tissues along the rectovaginal septum are sharply but carefully divided by a HF hook; the arrow points at the central fibrous pillar, which has to be preserved; the small asterisk indicates the caudal side of dissection, the larger asterisk indicates the cephalic side of dissection. B, The box shows a detail of the pillar surrounded by connective and fatty tissue.

Dis Colon Rectum 2018; 61: 00–00

DOI: 10.1097/DCR.0000000000001066

© The ASCRS 2018

DISEASES OF THE COLON & RECTUM VOLUME 61: 3 (2018)

e1

outcomes in locally advanced ultra-low rectal cancer, allowing dissection of the “infra-mesorectal” tissue. Nevertheless, the anterior route through such an approach is especially challenging because of the need of sharp dissection along a “no self-opening” plane and the risk of inadvertent damage of neurovascular structure on one side and the surgical specimen on the other.⁹

REFERENCES

1. Salerno G, Chandler I, Wotherspoon A, Thomas K, Moran B, Brown G. Sites of surgical wasting in the abdominoperineal specimen. *Br J Surg*. 2008;95:1147–1154.
2. Zhang C, Ding ZH, Li GX, Yu J, Wang YN, Hu YF. Perirectal fascia and spaces: annular distribution pattern around the mesorectum. *Dis Colon Rectum*. 2010;53:1315–1322.
3. Kraima AC, West NP, Treanor D, et al. Understanding the surgical pitfalls in total mesorectal excision: investigating the histology of the perirectal fascia and the pelvic autonomic nerves. *Eur J Surg Oncol*. 2015;41:1621–1629.
4. Diop M, Parratte B, Tatu L, Vuillier F, Brunelle S, Monnier G. “Mesorectum”: the surgical value of an anatomical approach. *Surg Radiol Anat*. 2003;25:290–304.
5. Furubayashi N, Nakamura M, Hori Y, Hishikawa K, Nishiyama KI, Hasegawa Y. Surgical considerations in regard to Denonvilliers’ fascia. *Oncol Lett*. 2010;1:389–392.
6. Fritsch H, Zwierzina M, Riss P. Accuracy of concepts in female pelvic floor anatomy: facts and myths! *World J Urol*. 2012;30:429–435.
7. Aigner F, Hörmann R, Fritsch H, et al; TAMIS TME Collaboration Group. Anatomical considerations for transanal minimal-invasive surgery: the caudal to cephalic approach. *Colorectal Dis*. 2015;17:O47–O53.
8. Fritsch H, Lienemann A, Brenner E, Ludwikowski B. Clinical anatomy of the pelvic floor. *Adv Anat Embryol Cell Biol*. 2004;175:III–IX, 1.
9. Stelzner S, Holm T, Moran BJ, et al. Deep pelvic anatomy revisited for a description of crucial steps in extralevator abdominoperineal excision for rectal cancer. *Dis Colon Rectum*. 2011;54:947–957.

Cristiano G.S. Hüscher, M.D., F.R.C.S. Eng. (Hon.)
Benevento, Italy

Marco Maria Lirici, M.D., Ph.D. AQ1
Rome, Italy

AUTHOR QUERIES

AUTHOR PLEASE ANSWER ALL QUERIES

AQ1—For indexing purposes, please confirm that author names have been correctly identified as given names (blue), surnames (red), and suffixes (black). Color in the byline will not appear on the final published version.

AQ2—There appears to be no source for Heald listed in the references. Please provide publication information for Heald in the reference list, in the order of citation in the text, and renumber the remaining references as necessary.