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Are Doughnuts Really Resection Margins in the Anterior Resection Operation for Rectal Cancer?

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Abstract

Background: Pathologic examination in patients with cancer remains crucial for postoperative treatment and prognosis prediction. However, the method of pathologic examination in some patients with rectal cancer is not correct.

Methods: The process of rectal cancer pathologic examination was analyzed in patients of rectal cancer who was undergone anterior resection operation.

Results: We found the upper doughnut is proximal margin; however, the other under doughnut is not really distal margin.

Conclusion: The evaluation of the distal margin should not only base on under doughnut but also combine with large specimens.

Keywords: Pathologic examination; Rectal cancer; Doughnut; Resection margin

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Technical Report

Pathologic examination in patients with cancer remains crucial for postoperative treatment and prognosis prediction. However, the method of pathologic examination in some patients with rectal cancer is not correct. Now, almost all of rectal cancer pathologic report complete according to the 'Minimum Dataset for Colorectal Cancer Histopathology Reports' [1]. The National Comprehensive Cancer Network (NCCN) Clinical Practice Guidelines in Oncology for Rectal Cancer (Version 3.2017) also suggest to use it in the part of the 'Principles of Pathological Revise', which make two doughnuts as cut margins (proximal and distal, cut ends) [2,3]. We think it is not reasonable.

The process of rectal cancer pathologic examination was analyzed in patients of rectal cancer who was undergone anterior resection operation. In all patients of rectal cancer, Total Mesorectal Excision (TME) was performed until the dissection reached the pelvic diaphragm. If possible, rectal

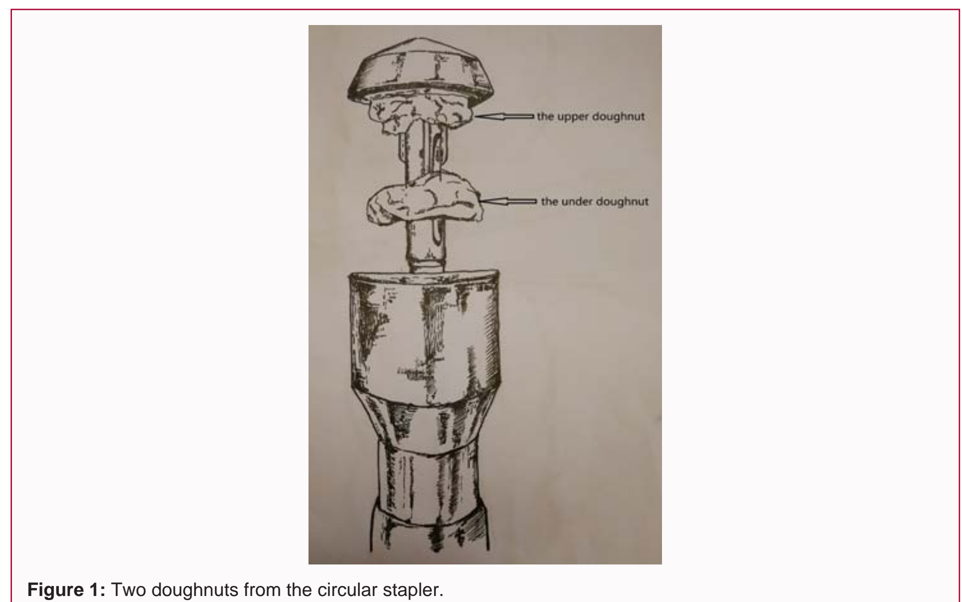

Figure 1: Two doughnuts from the circular stapler.

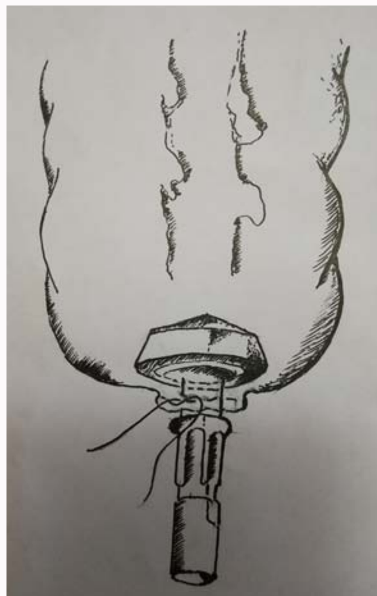

Figure 2: Pocket suture in the proximal rectum.

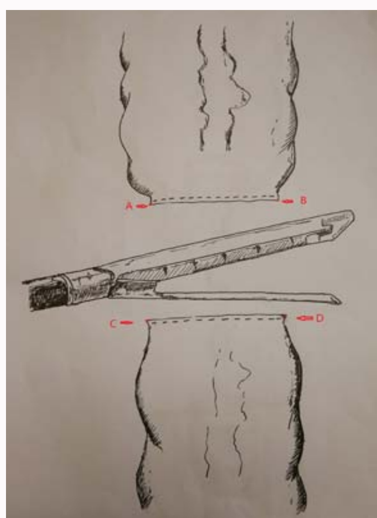

Figure 3: The distal resection line (CD line) made by linear stapler.

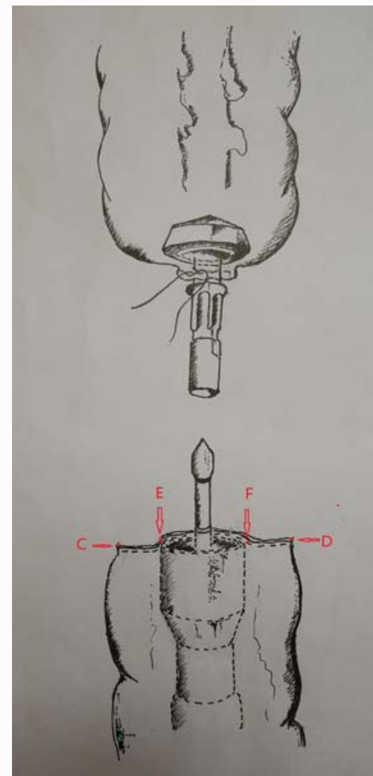

Figure 4: The blind area (CE line and FD line) in the pathologic assessment.

transection with a linear stapler was performed, and double-stapling anastomosis was made with a circular stapler. Then, we can obtain two doughnuts from the circular stapler (Figure 1). The upper doughnut is proximal margin; however, the other under doughnut is not really distal margin. We can find the pocket suture in the proximal rectum included whole rectal margin, so the upper doughnut can be made as proximal margin (Figure 2). However, distal margin is made by linear stapler and circular stapler (Figure 3,4). Because the distal resection line (CD line) made by linear stapler, and the diameter of distal resection line is longer than the diameter of circular stapler (EF line), under doughnut only include part distal margin, and some distal margin are not enclosed into the doughnut. If make the under doughnut as the distal margin, it will leave a blind area (CE line and FD line) in the pathologic assessment (Figure 4).

So it is not reasonable to make the under doughnut as distal margin. Therefore, we suggest that the evaluation of the distal margin should not only base on under doughnut but also combine with large specimens (AB line).

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