



# Quality of life after laparoscopic surgery of uncomplicated diverticular disease

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Diverticular disease (DD) affects mainly the people in the Western countries and has a great socioeconomic impact. In USA, DD accounts for approximately 267,000 hospitalizations per year with significant increase in the young adults (18–64 years) (1). The total cost exceeds 5% from the annual surgical budget (2).

Although the tactic in complicated DD is relatively clear, several questions exist about the role and timing of the elective resection in uncomplicated DD (recurrent abdominal symptoms without macroscopic alterations) (3). According to the World Gastroenterology Organization guideline [2007] elective surgery is recommended in “two or more episodes of diverticulitis severe enough to cause hospitalization, or any episode of diverticulitis associated with contrast leakage, obstructive symptoms, or an inability to differentiate between diverticulitis and cancer” (4). The rapidly expanded knowledge and experience, however, challenged the widespread rule for two or more episodes. In 2004 Salem *et al.* demonstrated that performing surgery after the fourth than the second attack had been associated with fewer deaths and colostomies with saving of \$1035 per patient and \$5429 in the age <50 years (*vs.* surgery after the first attack) (5). Recently, other authors not only corroborated this finding, but also found that the risk for complicated recurrence is 1–5%, far below the most commonly cited rates of 15–25% and even at younger age the presence of more than two attacks does not increase the rate of complications (6,7). Moreover, certain operated patients with uncomplicated DD continue to experience variety of gastrointestinal symptoms. In fact, currently most National guidelines unanimously discard the rule based

on the number of attacks and recommend case-by-case decision making even in younger adults (*Table 1*) (8–12). The German guideline even proposed new classification of DD, which in our opinion is of high practical importance (12).

The suggested individual decision or case-by-case approach includes risk/benefit assessment taking into account the age, co-morbidity, frequency and severity of attacks, disease-free interval (persistent symptoms between episodes or not) (8,10,11). Some authors consider the CT assessment severity by Abrosetti’s classification as a useful predictor for adverse course and need for surgery (8,10). On the other hand, the Italian group stated that age, immunocompromised condition and CT severity “could not be considered as an independent indication for surgery” (10).

Surprisingly, however, none of the cited guidelines took into account the quality of life (QoL) as an important tool in the decision-making process. In this regard, the recent study of Polese *et al.*, published in *Int J Colorectal Dis*, shed a light on this important instrument for assessment of the chronic DD (13). The authors aimed to validate the DV-QoL questionnaire of Spiegel *et al.* in uncomplicated DD through its comparison in laparoscopic sigmoid resection *vs.* conservatively treated patients, in patients *vs.* healthy volunteers, and *vs.* the standard SF-36 survey (14). The authors compared 44 medically treated *vs.* 97 operated patients and 44 healthy controls *vs.* patients as well. Pearson’s analysis found significant correlation between DV-QoL and SF-36. The pre-treatment assessment showed significantly worse total score and particularly regarding to “concern” and “behavioral changes” in the surgically

**Table 1** National guidelines recommendations for elective surgery in uncomplicated DD

Guidelines	Year	Recommendations
US (8)	2006	<i>"The decision to recommend elective sigmoid colectomy after recovery from acute diverticulitis should be made on a case-by-case basis."</i>
Danish (9)	2012	<i>"Elective resection is not routinely recommended for neither uncomplicated nor complicated cases of diverticulitis, even in younger patients."</i>
Italian (10)	2015	<i>"The indication for elective sigmoid resection should not be based on the number of previous episodes of AD."</i>
Scandinavian (11)	2016	<i>"Elective resection is performed on an individual basis, usually after several attacks of diverticulitis or for persisting complications."</i>
German (12)	2016	<i>"Chronic relapsing diverticulitis, uncomplicated diverticulitis (CDD type 3b), should be operated upon only after a careful risk/benefit assessment depending on the clinical presentation in the disease-free interval (individual medical decision). General elective interval surgery depending on the number of previous inflammatory episodes is not justified."</i>

CDD, classification of diverticular disease; AD, acute diverticulitis.

treated cases, whereas SF-36 found no difference. The post-treatment scores regarding the same variables were better and similarly SF-36 found no difference except for "vitality", which was better in surgical group. The covariance analysis by ANCOVA confirmed the above mentioned pre- and post-treatment results for DV-QoL. Regarding the SF-36, ANCOVA found significant differences regarding the following variables—"physical functioning", "role limitation due to physical problems", "vitality", "mental health" and "social functioning", but totally *"the variations in the global pre- and posttreatment SF-36 scores in the two groups were not statistically different"*. These findings could be translated in higher sensitivity DV-QoL to assess the uncomplicated DD than SF-36.

At first glance, the improved QoL in surgical group can be attributed to the higher rate of stenosis and stiffness in this group. The authors reported similar rate of two and more admissions in both groups, but higher rate of stiffness (54% *vs.* 15%) in the surgical group. Regarding the rate of stenosis/stiffness in non-operated group an inconsistency was observed—initially the authors reported stiffness in 17.2% and stenosis in 9.4%, whereas 62/94 (66%) rate of stenosis was shown on the corresponding table, although the non-operated group consist of 44 patients. These discrepancies deserve a special comment from the authors in future correspondence. In order to evaluate the influence of the number of attacks and presence of stenosis/stiffness on the changes in QoL, the authors correctly decided to perform a covariance analysis. Regarding these three variables ANCOVA revealed no differences between the

studied groups in both DV-QoL and SF-36.

In summary, the study of Polese *et al.* is timely and important due to several reasons. To our knowledge, it is the first study investigating DV-QoL after the basic one of Spiegel *et al.* It corroborates the current trend that the number of attacks could not be considered as an indication for surgery and shows comparable and even better effectiveness of DV-QoL *vs.* SF-36 in unison to Spiegel *et al.* (14). Secondly, the significant differences between the patients and healthy volunteers supports the good discriminative role of DV-QoL. Thirdly, the improved QoL in the surgical group is probably due to the higher rate of stenosis/stiffness in this group and authors considered this as a confirmation of stenosis as indication for surgery. On other hand, based on ANCOVA, they concluded that *"laparoscopic sigmoid resection improves the quality of life in patients with uncomplicated diverticular disease independently of the presence of colonic stenosis"*. This is in accordance with the results from the systematic review and meta-analysis of Andeweg *et al.* who reported better QoL after laparoscopic resection *vs.* conservative treatment using SF-36 (15).

Last but not least, the authors are fully aware of the limitations of their study—the small sample size and retrospective analysis of pre-treatment QoL. In addition to the above mentioned inconsistency that should be addressed and despite the results from ANCOVA, we consider the inclusion of patients with stenosis as inappropriate, because it represents a source of bias toward improved QoL after surgery. In fact, as the authors correctly mentioned in discussion, the stenosis is type 3c (recurrent diverticulitis

with complications) according to the German classification. However, because of most patients in their series had stenosis without clinically manifested obstruction the authors considered these cases as type 3b (uncomplicated DD). Nevertheless, stenosis represents a clear indication for surgery according to the German guideline (12) and this is supported by Polese *et al.*

Finally, we can conclude that the study of Polese *et al.* is valuable and represents an important step to validate DV-QoL and to include the QoL measure as an adjunctive tool in the decision-making process in uncomplicated DD. The above-mentioned shortcomings might be overcome by prospective multicenter comparative studies with homogeneous study groups and larger sample size. It would also be interesting to be explored the critical threshold of DV-QoL score indicating surgical intervention.

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### References

1. Etzioni DA, Mack TM, Beart RW Jr, et al. Diverticulitis in the United States: 1998-2005: changing patterns of disease and treatment. *Ann Surg* 2009;249:210-7.
2. Papagrigroriadis S, Debrah S, Koreli A, et al. Impact of diverticular disease on hospital costs and activity. *Colorectal Dis* 2004;6:81-4.
3. Tursi A, Picchio M, Elisei W, et al. Management of patients with diverticulosis and diverticular disease: consensus statements from the 2nd international symposium on diverticular disease. *J Clin Gastroenterol* 2016;50 Suppl 1:S101-7.
4. World Gastroenterology Organisation Practical guideline – Diverticular disease. 2007. Available online: <http://www.worldgastroenterology.org/guidelines/global-guidelines/diverticular-disease/diverticular-disease-english>
5. Salem L, Veenstra DL, Sullivan SD, et al. The timing of elective colectomy in diverticulitis: a decision analysis. *J Am Coll Surg* 2004;199:904-12.
6. Peery AF, Sandler RS. Diverticular disease: reconsidering conventional wisdom. *Clin Gastroenterol Hepatol* 2013;11:1532-7.
7. Regenbogen SE, Hardiman KM, Hendren S, et al. Surgery for diverticulitis in the 21 st century, a systematic review. *JAMA surgery* 2014;149:292-303.
8. Rafferty J, Shellito P, Hyman NH, et al. Standards Committee of American Society of colon and rectal surgeons. Practice parameters for sigmoid diverticulitis. *Dis Colon Rectum* 2006;49:939-44.
9. Andersen JC, Bundgaard L, Elbrønd H, et al. Danish national guidelines for treatment of diverticular disease. *Dan Med J* 2012;59:C4453.
10. Binda GA, Cuomo R, Laghi A, et al. Italian Society of Colon and Rectal Surgery. Italian society of colon and rectal surgery. Practice parameters for the treatment of colonic diverticular disease: Italian society of colon rectal surgery (SICCR) guidelines. *Tech Coloproctol* 2015;19:615-26.
11. Schultz JK, Yaqub S, Øresland T. Management of diverticular disease in Scandinavia. *J Clin Gastroenterol* 2016;50 Suppl 1:S50-2.
12. Kruis W, Nguyen GP, Leifeld L. German Guidelines. *J Clin Gastroenterol* 2016;50 Suppl 1:S47-9.
13. Polese L, Bressan A, Savarino E, et al. Quality of life after laparoscopic sigmoid resection for uncomplicated diverticular disease. *Int J Colorectal Dis* 2018;33:513-23.
14. Spiegel BM, Reid MW, Bolus R, et al. Development and

- validation of a disease-targeted quality of life instrument for chronic diverticular disease: the DV-QOL. *Qual Life Res* 2015;24:163-79.
15. Andeweg CS, Berg R, Staal JB, et al. Patient-reported

Outcomes After Conservative or Surgical Management of Recurrent and Chronic Complaints of Diverticulitis: Systematic Review and Meta-analysis. *Clin Gastroenterol Hepatol* 2016;14:183-90.

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