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REPLY, LETTER TO THE EDITOR

Authors' Reply: Small and Laterally Placed Incisional Hernias Can be Safely Managed with an Onlay Repair

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Dear Editor,

We thank the authors of the Letter to the Editor [1] for the great interest in our publication [2] and their comments.

On comparing the recurrence rate of incisional hernia repair in sublay versus onlay technique at one-year follow-up, and following propensity score matching at 4.13% and 5.31%, no systematic disadvantage was identified for either of the two techniques [2]. The total recurrence rate was 4.23% and 5.41%. Follow-up after 1 year is, of course, much too short to permit ascertainment of the real recurrence rates.

In another analysis of data from the Herniamed Registry, we demonstrated that patients must be followed up for at least 10 years after incisional hernia repair before the recurrence rate can be definitively ascertained [3]. A systematic review with five prospective randomized trials and 17 observational studies identified recurrence rates of between 0 and 32% for the onlay technique [4]. Likewise, for the sublay technique another systematic review based on eight randomized controlled trials revealed recurrence rates of between 1.6 and 32% following incisional hernia repair [5]. The proportion of recurrent incisional hernias of the total collective of patients with incisional hernias was reported in registries to be 18.2–37% [6]. If one considers this to be a realistic scale for the recurrence rates following incisional hernia repair, in all probability the rates reported by us after 1 year are also realistic and give no reason to believe that the results after an adequately long follow-up would be better than those reported to date in the literature. Against that background, it is likely that the recurrence rates of 15% for the onlay technique and 7% for the sublay technique, as reported in the meta-analysis by Timmermans [7] based on two randomized controlled trials, one prospective and seven retrospective studies, are too low. Besides, the difference shows only a trend in favor of the sublay technique [7].

The only conclusion that can be drawn from this discussion is the need for more studies with long follow-up to elucidate the real role of the individual surgical techniques in incisional hernia repair. Here, a proportion of 18.2–37% recurrences for the total collective of incisional hernias serves as an orientational guide.

Like the authors of the Letter to the Editor [1], we are of the opinion that defect closure should be achieved where possible. However, our data demonstrate that this is actually routinely achieved by surgeons only in around 50% of cases for both the onlay and sublay techniques [2]. But that is also reported as such in the literature [4]. A systematic review of the onlay technique for incisional hernia repair with 10 observational studies on onlay repair of incisional hernias with defect closure identified a wound complication rate of between 5 and 76% and a recurrence rate of between 0 and 20% [4]. In seven observational studies on

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onlay repair without defect closure, the wound complication rate was 9.1–37.8% and the recurrence rate was 6.1–23.1% [4]. Hence, the role of defect closure, too, has not been adequately scientifically assessed for either the onlay or the sublay technique. That aspect, too, should be better explored in future studies.

In the statistical model used in our study, risk factors were taken into account only in their entirety [2], i.e., the pairs were not formed strictly in accordance with the individual risk factors. We therefore calculated the proportion of smokers for the two groups after matching. In the onlay technique group, 105 out of 1016 patients (10.33%) were smokers and in the sublay group 119 out of 1016 (11.71%) smoked (standardized difference = 0.044). Hence, the influence of smoking on the outcome for both surgical procedures is comparable, because the influencing factor smoking is adequately balanced for both surgical techniques with a standardized difference of <0.1.

Due to propensity score matching, the proportion of patients with smaller defects (W1 $<$ 4 cm: 33%) and lateral defect localization (38%) for the onlay and sublay techniques was so high that these factors exerted a relevant influence on the outcome. Since the results do not demonstrate any systematic deviation for one or the other surgical technique, there must be the presumption of equivalence for this configuration of the two groups.

We agree, of course, with the authors of the Letter to the Editor that these findings should be further investigated in prospective randomized studies. That is particularly important since an expert consensus guided by systematic review stated that onlay mesh location may be useful in certain settings [8].

References

1. Tarazi M, Shaw A, Stott MC, Moinuddin Z, von Dellen D (2019) Letter to the Editor: Small and laterally placed incisional hernias can be safely managed with an onlay repair. World J Surg. https://doi.org/10.1007/s00268-019-05088-7
2. Schrittwieser R, Köckerling F, Adolf D, Hukauf M, Gruber-Blum S, Fortelny R, Petter-Puchner AH (2019) Small and laterally placed incisional hernias can be safely managed with an onlay repair. World J Surg 43:1921–1927. https://doi.org/10.1007/s00268-019-04980-6
3. Köckerling F, Koch A, Lorenz R, Schug-Pass C, Stechemesser B, Reinpold W (2015) How long do we need to follow-up our hernia patients to find the real recurrence rate? Front Surg 2:24. https://doi.org/10.3389/fsurg.2015.00024
4. Köckerling F (2018) Onlay techniques in incisional hernia repair—a systematic review. Front Surg 5:71. https://doi.org/10.3389/fsurg.2018.00071
5. Köckerling F, Schug-Pass C, Scheuerlein H (2018) What is he current knowledge about sublay/retro-rectus repair of incisional hernias. Front Surg 5:47. https://doi.org/10.3389/fsurg.2018.00047
6. Köckerling F (2019) Recurrent incisional hernia repair—an overview. Front Surg 6:26. https://doi.org/10.3389/fsurg.2019.00026
7. Timmermans L, de Goede B, von Dijk SM, Kleinrensink GJ, Jeekel J, Lange JF (2014) Meta-analysis of sublay versus onlay mesh repair in incisional hernia surgery. Am J Surg 207:980–988. https://doi.org/10.1016/j.amjsurg.2013.08.030
8. Liang MK, Holihan JL, Itani K, Alawadi ZM, Flores Gonzales JR, Askenasi EP et al (2017) Ventral hernia management: expert consensus guided by systematic review. Ann Surg 265:80–89. https://doi.org/10.1097/SLA.0000000000001701