Author’s response to reviews

Title: Prospective international multicenter observational study of Novosyn® Quick for skin closures in adults and children (SKINNOQ)

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Re-Submission of the revised manuscript "Prospective international multicenter observational study of Novosyn® Quick for skin closures in adults and children (SKINNOQ)" (BSUR-D-18-00429)
Dear Prof. Petrillo,

Herewith we wish to submit the revised manuscript "Prospective international multicenter observational study of Novosyn® Quick for skin closures in adults and children (SKINNOQ)" for consideration for publication in BMC Surgery.

We thank for the valuable comments and questions of the reviewers.

We wish to answer all questions and comments raised point-by-point in this letter.

The changes have also been marked in the revised manuscript.

Reviewer #1:

Stephen J Chapman (Reviewer 1): "Many thanks for the opportunity to review this manuscript, which I enjoyed reading. A multi-centre, observational study of Novosyn® suture material in adult and paediatric populations is presented.

The manuscript is well reported and aligns well with the prospective study protocol (NCT02680886). There are no identified ethical concerns and the topic is clinically important.

I have several comments and suggestions, which you may wish to consider and clarify in your revisions:

1) As with any new surgical device, a period of familiarisation/learning curve is important. Did the surgeons (n=1 for adult population; n=7 for paediatric population) have the opportunity to familiarise themselves with the suture handling prior to using it in the study? Please describe this process further.

Thank you for your comment. We clarified this issue by inserting additional informations in the manuscript. Novosyn® Quick was regularly used for skin closures by all participating surgeons in both centers for longer than 3 months prior to inclusion of the first patient. (revised manuscript page 5, lines 4-6).

2) I note that the method of suturing (continuous & interrupted) was not standardised. Similarly, the assessments of cosmesis in the paediatric group were done by a mix of parents and
children. The pooling of these data without appropriate sub-analyses is problematic. Although the current study size would likely not permit a reliable sub-analysis, the potential for confounding should be acknowledged.

Thank you for your valuable comments. We acknowledged your points in the discussion section. The method of suturing was not standardised. Similarly, the assessments of cosmesis in the paediatric group were performed by a mix of parents and children. The pooling of these data involves the potential for confounding. (revised manuscript page 14, lines 10-12)

3) Adverse events: were standardised definitions used to define key events such as surgical site infection, "inflammation", dehiscence? Please describe these fully in the Method section.

Thank you for your valuable considerations. Utilised definitions are now inserted in the method section. Surgical wound dehiscence, (defined as the separation of the margins of a closed surgical cutaneous incision, with or without exposure or protrusion of underlying tissue, occurring at single or multiple regions, or involving the full length of the incision and affecting some or all tissue layers; the dehisced incision may, or may not, display clinical signs and symptoms of infection), surgical site infection (defined as infection of the skin and subcutaneous tissue of the incision occurring within 30 days after the operative procedure). (revised manuscript page 6, lines 23-25 and page 7, lines 1-3)

4) In the statistical analysis section, a finding of equivalence to Vicryl® Rapide is prospectively used to indicate safety and effectiveness. I am afraid this is too strong. In the setting of a non-controlled, observational study, equivalence cannot be proven (to assess this reliably would implicate a non-inferiority RCT). I would suggest that this be toned down to reflect a more balanced conclusion (i.e. absence of excessive adverse events).

Thank you. We agree. This part has been altered as follows: A sample size of 100 patients was considered to be appropriate to detect absence of excessive adverse events. (revised manuscript page 7, lines 14-15)

5) Please confirm that emergency/urgent surgical procedures were excluded (in the adult population, sigmoid diverticulitis is included as an indication for surgery)."

Thank you, it is true that this is ambiguous. The adopted elective procedure is now denoted Sigmoid "resection". (revised manuscript page 16, Table 2)
Reviewer #2:

Abhijit Chandra (Reviewer 2): I thank the Editor for proving me an opportunity to review this article.

The authors have presented their findings of fast-absorbable synthetic suture (Novosyn® Quick) used for skin closure in adults and children. In this multicentric observational study, authors have concluded that Novosyn® Quick is safe and effective for skin closure and can be used as an alternative to the standard- Vicryl® Rapide suture.

The study is conducted well, methodology is convincing and language is clear.

I hope this study will establish Novosyn®Quick as a safe and effective suture for skin closure in all age groups and for wide indications.

Thank you for your favourable comment.

Reviewer #3:

Giulio Sozzi (Reviewer 3): In this study, Gfroerer et al. attempted to evaluate the performance of a newly released fast absorbable braided synthetic suture (Novosyn® Quick). The authors conducted a prospective, non-interventional, international, multi-center single-arm cohort study to assess intraoperative handling, wound healing outcomes and postoperative patients` satisfaction of Novosyn® Quick for skin closures. The population was composed by adults and children, who underwent elective skin closures. Two centers enrolled 100 patients, of which 50 were adults (visceral surgery, France) and 50 were children (pediatric surgery, Germany).

The results suggest that Novosyn® Quick is safe and effective for skin closure in both samples.

However, there are some points that might be clarified:

1) Local infection is one of the most frequent complication in skin sutures. Therefore, it's necessary for the authors to specify the rate of peri-operative antibiotic prophylaxis administration.

Thank you for that comment. The requested informations are now included in Table 2: N=13 (26%) patients of the adults group received a perioperative single-shot antibiotic prophylaxis (Cefuroxim), N=9 (18%) patients of the adults group received a peri-/ postoperative antibiotic treatment between 3 and 9 days (Cefuroxim, Metronidazole); none of the paediatric patients received a peri- or postoperative antibiotic treatment (revised manuscript page 16, lines 13-16)
2) In Table 2, before the list of the various types of surgical procedure, it would be useful to divide the interventions in superficial surgery and deep surgery.

Thank you for that comment. The suggested informations are now included in Table 2 (revised manuscript page 16)

3) In Table 3 it should be specified in how many cases the sutures was longitudinal, transversal or oblique. Infact, it's known that different suture lines are associated with different tensile forces, which significantly impact on the final outcome of the suture.

Thank you for that comment. The requested data are now included in Table 3 (revised manuscript page 17)

4) As the aesthetic appearance of the skin sutures is significantly influenced by the management of subcutaneous tissue. Authors should specify whether they have closed the subcutaneous tissue systematically, selectively or if they have never sutured it. These data could be showed in Table 3.

Thank you for requesting this information. Respective data are now included in Table 3 (revised manuscript page 17)

5) Moreover, the authors have to specify in the discussion that this kind of suture can be considered as an option particularly for very short suture as emerged from their study.

Thank you for your comment. It has been specified as requested: and comprised short to medium long lengths of incisions (revised manuscript page 14, line 21)

We hope, that we were able to respond appropriately to the reviewers` comments and questions.

Sincerely,

Stefan Gfroerer, M.D.