Reviewer’s report

Title: Long term outcome and quality of life after open incisional hernia repair - light versus heavy weight meshes

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Reviewer: Michail V Anurov

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The question posted by the authors well defined. An actuality of the problem is associated with the search of an optimal surgical mesh structure for incisional hernia repair. In the late of 90’s and early 2000 heavyweight meshes were replaced by the first generation of lightweight surgical meshes. Now those patients, who underwent hernia repair with using of old generation of surgical meshes have long-term follow-up (5-10 years) and should be examined. It will allow for evaluation of long-term complications and quality of life according to the type of implanted mesh. This article is one of the first attempts to compare quality of life and long-term (more then 5 years) efficiency of large incisional hernia repair by two different meshes. Although it is based on a limited number of patients, the follow-up period is quite impressive. However, this paper cannot be accepted for publication unless the authors complete a substantial revision.

Major Compulsory Revisions:

1. In current study “33 patients with midline open incisional hernias were operated with a heavy weight mesh (Prolene® 90,2g/m2 pore size 0.8mm, Ethicon, Nordersted; Germany) between January 1996 and December 1997.” It is known that Prolene produced by Ethicon till 1998 had weight 108.5 g/m2 and pore size 1-1.6 mm. Was it a special modification of Prolene used in the study or authors implanted any other polypropylene mesh (for example, Marlex and Atrium are more close to described parameters)?

2. The sample sizes are too small to test the normality of data distribution, so it is difficult to tell if the data come from a Gaussian population, but it matters a lot. The best way is to use both parametric (unpaired t) and nonparametric (Mann-Whitney) tests.

3. In Methods the authors write that the standard follow up consisted of anamnesis, physical examination and ultrasound or MRI, when needed (anamnesis and physical examination suggestive of hernia recurrence or intestinal adhesions). How many patients were needed for ultrasound and MRI? How many patients had intestinal adhesions? Were the mesh folds identified by ultrasound in any patients?

showed that patients of the heavy-weight mesh group significantly more frequently complained about "stiff abdomen" (38%) compared to the low-weight mesh group. In current study this complication was not described. If no patients had “stiff abdomen” it should be marked because “it’s an important aspect in the outcome of hernia surgery”.

5. In Methods authors write “Additionally, the SF-36 Physical Component Summary (PCS), and the Mental Component Summary (MCS) scales were determined, ranging from zero (lowest well-being) to 100 (highest wellbeing),” but they don’t show PCS and MCS data in Results (neither in the text nor in the table).

6. In Results authors write that “12 patients (mean age 57.3 + 11.8, range 24-80 years) underwent sublay hernia repair with HW-PP meshes between January 1996 and Dezember 1997. The body mass index (BMI) was 29.8 + 3.7 kg/m2 and the hernia size was 127.2 + 97.2 cm2. From January 1998 all patients received sublay hernia repair with a LW PP mesh. 12 consecutive patients (mean age 58.3 + 11.1 years, range 28-82 years) were enrolled in the survey. The body mass index (BMI) was 28.7 + 3.5 kg/m2 and the hernia size 226 + 301.5 cm2”, but in the Table 1 data are presented inversely. What is truth?

7. It is difficult to agree with authors that groups were equal in hernia size (127.2+97.2 vs 226.0+301.5) due to group’s inhomogeneity. Hernia size should be divided on subgroups (for example, > 100 cm2, 25-99 cm2, < 25 cm2) or be shown for each patient.

8. The health related quality of life after hernia repair was determined only once in long-term follow-up and the SF36 Survey showed no significant worse or better outcome for one mesh type. Authors don’t make a common assessment of life quality of patients and only compare statistical results of questioning. It would be reasonable to compare SF-36 scale scores of each group with those of the reference group (control group or general population in Germany, Kurth BM, Ellert U: The SF-36 questionnaire and its usefulness in population studies: results of the German Health Interview and Examination Survey 1998. Soz Praventivmed 2002, 47:266-277) and then to estimate degree of health impairments in study groups. It seems to be important, while according to results of reviewing work (Table 2) quality of life is strongly affected by prosthetic hernia repair and even comparable with HRQoL for cancer patients (see research article: Health-related quality of life among general practice patients with differing chronic diseases in Germany: Cross sectional survey Hong-Mei Wang, Martin Beyer, Jochen Gensichen and Ferdinand M Gerlach BMC Public Health 2008, 8:246 doi:10.1186/1471-2458-8-246). Besides reviewing article doesn’t contain information about chronic diseases which can impair the patient’s quality of life.

9. The article “Randomized clinical trial comparing lightweight composite mesh with polyester or polypropylene mesh for incisional hernia repair” Conze J., Kingsnorth AN., Flament JB et al. (Br J Surg. 2005 Dec; 92(12): 1488-93) should be discussed and added to the reference list.
10. The aim of this study was “to assess the health related quality of life (HrQoL) and the long term outcome of patients with open incisional hernia repair using HW- versus LW-PP meshes”, but conclusions are based on data of SF36 Survey only, while authors report about two patients of the HW-group (16.6%) complained of abdominal pain at rest (“chronic pain”) and lower pain intensity in the LW-group. It should be added to conclusions, as an evidence of a hernia specific questionnaire need.

**Level of interest:** An article of importance in its field

**Quality of written English:** Acceptable

**Statistical review:** Yes, and I have assessed the statistics in my report.

**Declaration of competing interests:**

I declare that I have no competing interests.