CORRESPONDENCE

Evidence-based Hernia Treatment in Adults

by Prof. Dr. med. Dieter Berger in issue 9/2016

Individual Study Particularities Need to Be Considered

Chronic postoperative pain affects 2–12% of patients after an inguinal hernia repair procedure. In 2004, Neumayer (1) reported a nationwide study based in the USA comparing laparoscopic and open hernia repair procedures in which the study results varied substantially depending on whether specialized centers were involved.

The individual study characteristics—for example, whether the control group is appropriate or whether sufficient prophylactic analgesia has been given—are crucial for the results. The occurrence of complications, such as chronic pain, depends on numerous factors—for example, the surgeon's experience, the length of the surgical procedure, and patient-related factors. The isolated recommendation that preventive measures consist of using endoscopic/laparoscopic techniques (2) requires further interpretation with regard to the criteria of the evidence.

Laparoscopic procedures are associated with a higher risk of complications (chronic pain), as shown by national registry studies in 2012 and 2015 (3, 4), but these studies were regrettably not considered. It is evident that pain occurs after laparoscopic procedures. There is no other explanation for the fact that so many studies exist that aim to reduce pain and report to have shown this to a significant extent. In order to prove pain reduction in a significant way, the pain has to occur frequently and be of a sufficiently severe nature. Some surgeons achieve good results when using laparoscopic approaches, and these also exist for open procedures. Finally, there may be very valid reasons for not turning a disorder located outside the abdominal cavity (posterior wall defect, isolated nerve compression) into a disorder of the abdominal cavity by using a surgical technique, with all the consequences that this might entail (adhesions, injury to the bowel and large vessels). An isolated recommendation for using laparoscopic herniotomy to prevent pain should be avoided without considering the available evidence.

DOI: 10.3238/arztebl.2016.0543a

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Conflict of interest statement
The author declares that no conflict of interest exists.

A Need for Catching up in Testing Meshes

At the present time, any categorical recommendation for mesh-based hernia repair can be made only subject to certain caveats (1). Unanswered questions on the biocompatibility of meshes remain, and this on the background of possible physical reactions to foreign bodies, which make later procedures, such as lymphadenectomy, vascular reconstruction, or radical prostatovesiculectomy, difficult or even altogether impossible. Hydrocele, varicocele, spermatic cord irritations, ilioinguinal pain syndromes after mesh implantations are not rare. And why would they be, in view of the occasionally catastrophic results after using the same alloplastic materials in prolapse surgery in women (2).

We currently have an urgent need to catch up in the already widespread use of meshes and require:

a) A system of tests to ascertain the biocompatibility of meshes (3)
b) Valid studies before mesh materials are used clinically (4)
c) A compulsory, cross-disciplinary implant registry for the purpose of evaluating long term effects, such as is already being called for in the federal government's national strategy process.

DOI: 10.3238/arztebl.2016.0543b

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Conflict of interest statement
The author declares that no conflict of interest exists.

In Reply:

Our correspondents focus on two important aspects—chronic pain and mesh technology—which require additional explanatory comments.

1. The study reported by Neumayer used meshes with a vertical extension of 8.1 cm and 8.5 cm; the smaller meshes were associated with a significantly raised rate for recurrence, as was pointed out in the correspondence submitted in response to the primary publication (1). This shows the technical deficiencies of this study. The Finnish study is based on data from Finland's patient insurance scheme and compensation claims brought by patients, not on the measured incidence of severe complications. The evaluation of the Danish hernia registry shows a lower rate of pain and infections for laparoscopic/endoscopic techniques. The higher complication rate after this technique stems from—as the authors explained—a higher incidence of complications, which are not specified in the registry. Consequently, no conclusions can be drawn about their nature and severity. The evidence from numerous clinical studies—that laparoscopic/endoscopic techniques for hernia repair are associated with lower rates of chronic pain—therefore remains untouched. A US-based registry analysis with high-quality data was cited in our article in the context of the rate of severe complications; this study did not show any advantage for open techniques.

2. The categorical recommendation of mesh-based repairs is formulated in the cited guidelines and supported by highest-level evidence. Suture-based approaches do not offer any advantage with regard to chronic pain or other complications, as was shown by a meta-analysis cited in the article (2). A systematic review with meta-analysis studied the adverse effect on retropubic prostatectomy after pre-peritoneal meshplasty (3). A reduced lymph node yield was found, as was a prolonged period of catheterization without any other drawbacks. The comparison of inguinal hernia repair and prolapse surgery in women is inappropriate: in one setting, an extended mesh is placed without tension, in the other, a mesh strip is placed under partial conditions of tension. The question of biocompatibility remains unanswered as even the definition is not consistent and obviously unresolved (4). It is only the definition, however, that a system of tests can be based on. An implant registry to evaluate long term results is urgently required, but this has to be based on data of satisfactory quality in order to enable reliable conclusions.

In sum, I wish to emphasize that the article's conclusions are based in the available evidence and the guidelines resulting from this evidence. The literature cited in the correspondence was familiar but was not considered where it was not up to date and where higher-level evidence was available.

DOI: 10.3238/arztebl.2016.0544

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Conflict of interest statement
Prof. Berger has received reimbursement of meeting participation fees, as well as travel and accommodation expenses and honoraria for the preparation of scientific presentations, from med update GmbH.