Reviewer’s report

Title: Robotic versus laparoscopic distal pancreatectomy: an up-to-date meta-analysis

Version: 0 Date: 30 Jun 2017

Reviewer: Valeria Tonini

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This is an interesting and well-structured study on a controversial issue: there are still many doubts about what might be the most appropriate surgical technique in distal pancreatectomy.

The selection criteria of the studies and the methodology adopted were impeccable. Perhaps it would have been worth widening the study by comparing the three techniques currently used for distal pancreatectomy: open, laparoscopic and robotic. Moreover it might be better to compare the different spleen preservation techniques (Kimura method versus Warsaw method) and the type of laparoscopic technique (conventional multi-laparoscopy versus single-incision laparoscopy).

The results of this study should be interpreted with caution due to some limitations. While all the studies included in this meta-analysis were found to be high-quality studies, none of them were randomized trials., because there are none on this subject. Therefore, the authors could only analyze retrospective studies with the well-known limitations of this approach.

RDP is a relatively new technique and there are still many issues related to costs, organization and learning curve. The main risk of non-randomized studies investigating new techniques is obviously patient selection: it is possible that more challenging cases might be treated more readily with an established technique (such as LDP in this case), while the newer technique (in this case RDP) is employed in less difficult cases.

In this meta-analysis the results of the two techniques were substantially overlapping, as reported in other studies. The morbidity and mortality were similar. Conversely, RDP procedures have a lower conversion rate, a higher spleen preservation rate, a shorter length of hospital stay but higher costs compared to LDPs.

Another limitation of this study is not differentiating between the various indications for DP. In my opinion, it does not make much sense to compare the results of two surgical techniques applied to completely different pathologies, ranging from small IPMNs to big cancers. Spleen preservation must be taken into great consideration when comparing of the two techniques: preserving the spleen is a must in benign or borderline pathology, whereas splenectomy is almost always necessary in malignant disease for oncological reasons. Since the RDP technique offers significantly better spleen conservation rates, it could become the technique of choice in benign pathologies, regardless of the higher costs of the procedure. It is also worth noting that, on top of all the expenses already accounted for by the various authors, I think it would be important to
consider a cost that is difficult to estimate: the cost of an unnecessary splenectomy and the loss of its function, with subsequent immunodeficiency and increased risk of infection.

Although the radicality and the adequacy of lymphadenectomy after RDP appear encouraging, oncologic results cannot be evaluated at this time, since a longer follow-up is needed to validate them.

In conclusion I would say that the study is valid, well-conducted, sparks interest in a hot surgical topic, encourages operators to improve their expertise in a new technique that seems to offer substantial advantages. Moreover it is possible that the costs of this techniques will decrease over time once its learning curve will be completed.

I think that an increased surgical volume and experience with RDP and a longer follow-up period are necessary to establish its most appropriate use and its potential superiority over the laparoscopic technique and to support its widespread adoption in current surgical practice.

Obviously, large, multicenter, prospective randomized controlled trials are needed to prove these results.

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If not, please specify what is required in your comments to the authors.

Yes

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