Author’s response to reviews

Title: Robot-assisted laparoscopic antegrade versus open inguinal lymphadenectomy: A retrospective controlled study

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Thank editor and reviewers for the advices, we have revised the manuscript or provided a detailed rebuttal according to all comments raised.

Nick A. Watkin (Reviewer 2):

1. The type of surgical incision used (s shape) in the open group is notorious for wound breakdown. A supra-inguinal or sub-inguinal incision has a less than 5% risk of wound breakdown and would be a much more reasonable comparison with the robotic technique. It is really true as you suggested. However, this is a retrospective analysis of data that were collected from our operative cases. It was just the fact that we used the s-shaped incision (according to the Campbell-Walsh Urology) in most open surgeries in that period. There were only a small amount cases by supra-inguinal or sub-inguinal incision. In view of this situation, we just choose to collect the data of cases with s-shaped incision which had the advantage in numbers and made the comparison. We are also collecting more clinical data of the cases by supra-inguinal or sub-inguinal incision to make more reasonable comparison for the study.

2. The authors state that their prior experience of robotic surgery was sufficient to start the inguinal node technique without mentoring of any sort. I do not think this would pass a UK ethical board. 3. The authors also confirm that data was retrospective even for the new technique. I find that disappointing and certainly in the uk, prospective data would be mandatory for a new technique given the lack of surgeon experience and the need to monitor for patient safety

As mentioned in the manuscript, the robotic inguinal lymphadenectomy was firstly reported by
Josephson et al. in 2009, as well as surgical cases reported by Sotelo R et al. in 2013 and Ma Jiajia in 2014, by which safety and efficacy of the robotic surgery was verified. On the basis of preventious research, our study introduced a new approach (antegrade), bringing a certain extent improvement in operation procedure, patient cart position and so on. Also enough work and efforts were did for the operation such as related anatomical knowledge, management of complication. The surgeon acquired the certificate of robotic surgery in 2007, accomplishing hundreds of robotic surgeries every year. Rationally, it was not a totally new technique for us. The current study was reviewed and approved by the institution ethical committee (IEC) of the Fourth Medical Center of PLA General Hospital (2019KY015-HS001). All participants provided written consent to participate in this study.

Nicola Nicolai (Reviewer 3): The authors answered the questions, but some aspects are not sufficiently solved. In particular, the intervention of inguinal LND for penile neoplasia requires high attention to avoid inadequate removal of diseased tissues or diffusion from poor manipulation. Minimally invasive surgery, which certainly offers advantages over aspects of wound complications, can be considered if there are no obvious differences in oncological outcome compared to traditional surgery. Information on the lymph node status of the open pre-surgery series is lacking. The description of the relapses is insufficient to understand if the relapse was typical or attributable to diffusion induced by intrainguinal or intrabdominal pressure exercise. The reader should be informed about the site of recurrence (again lymph-nodes? what does it mean abdominal cavity?) and about any relation between stage (both clinical and pathologic) and recurrence. In this sense I had already recommended the use of a descriptive table. Regarding lymphatic complications, a detailed description based on severity (for example according to the Clavien classification) would be appropriate, as well as a description of timing of recurrences.

Thank you for the recommendation and advice. I am sorry for not providing complete essential clinical data. Information on general data, the lymph node status of the open pre-surgery series, site of recurrence and lymphatic complications are described in the table below. (table1 and table 2)

(Section General Characteristics, line 5-7 , page 4)

In the open group, eight of the ten patients were T1 stage, one was T2 stage and one was T3 stage. The preoperative clinical N stage were as follows, cN1 in two patients, cN2 in seven and cN3 in one. (Table 1)

The description of the relapses is insufficient to understand if the relapse was typical or attributable to diffusion induced by intrainguinal or intrabdominal pressure exercise. The reader should be informed about the site of recurrence (again lymph-nodes? what does it mean abdominal cavity?) and about any relation between stage (both clinical and pathologic) and recurrence.

Of the two groups, all the six cases with recurrence or metastasis had a staging of pN2 or pN3, while other fourteen cases with pN0 or pN1 had no recurrence and metastasis. All the six patients, dying of tumor progression, developed inguinal and pelvic lymph nodes recurrence or metastasis, leading to extensive abdominal metastasis with cancer cachexia.

As the disease progressed, severe abnormal distention was found in the patients with pelvic lymph nodes recurrence, which we guessed the abdominal cavity metastasis caused. However, most of them gave up treatment away from hospital, lack of the evidence of imaging diagnosis.