Should peritoneal tears be repaired during retroperitoneal laparoscopic radical nephrectomy?

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To the Editor: Laparoscopic radical nephrectomy (LRN) is the standard of care for patients with T2 tumors and localized masses not treatable by partial nephrectomy according to the European Association of Urology Guidelines on renal cell carcinoma.1 Transperitoneal and retroperitoneal are two main approaches in LRN. With the advantages of easier hilar control, shorter operation time, and less bowel irritation, retroperitoneal approach is preferable in our center. The peritoneal tear is a common intraoperative complication during retroperitoneoscopic procedures, leading to the collapse of the retroperitoneal space. Currently, there is no solid evidence to support the routine closure of peritoneal tears. On the contrary, many surgeons believe that unless subsequent procedures are severely disrupted, peritoneal tears could be left open because they would rapidly be reperitonealized.2 According to our daily practice, most peritoneal tears require no repairment. However, a rare case of internal hernia (IH) after retroperitoneal LRN raised our concern about this issue.

A 38-year-old female diagnosed with left kidney cancer underwent retroperitoneal LRN in our center in November 2019. At the end of the surgery, the peritoneum was inadvertently injured and a 2 to 3 cm defect was created. Due to its minimal impact on the operation, the defect was left untreated. Recurrent nausea and vomiting were observed, despite flatus occurred 2 days after the operation. Abdomen computed tomography was conducted 4 days post-operatively, high intestinal obstruction was diagnosed and IH was suspected. An exploratory laparotomy was performed after 10 days of conservative treatments. IH through the peritoneal defect was finally confirmed, unfortunately, part of the jejunum was resected because of severe adhesions (Figure 1).

IH is defined as a protrusion of a viscus, such as intestine, through mesenteric or peritoneal aperture. Cases of transmesenteric hernia after transperitoneal LRN or donor nephrectomy have been reported.1,2,3 However, only one case of IH through the peritoneal defect after hand-assisted retroperitoneoscopic nephroureterectomy was reported.2 In our case, several factors might contribute to the IH. First, the peritoneal defect was about 2 to 3 cm in length, which is just enough for the jejunum to move through it into the retroperitoneal space but not the opposite. Second, immediate nausea and vomiting after surgery, although it was unclear whether it was caused by anesthesia or bowel obstruction, led to a sharp increase of abdominal pressure, which aggravated the protrusion of the jejunum to the retroperitoneal space. Once the intestine was entrapped, edema, exudation, and adhesion occurred, which made automatic reposition more difficult and surgical intervention became inevitable.

Although IH is rare for patients with untreated peritoneal tears after retroperitoneal LRN, the consequence might be far too severe to be ignored. Surgical repair of the hernia or even enterectomy was needed, causing increased costs and prolonged hospital stay. In order to prevent such morbidity, we suggest peritoneal repair, or defect enlargement as an alternative, for patients with peritoneal tears during retroperitoneal LRN. However, large-scale studies are in much demand to testify our point of view.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form, the patient has given her consent for his/her/their images and other clinical information to be reported in the journal. The patient understands that her name and initials will not be
published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

Funding
This work was supported by a grant from the National Natural Science Foundation of China (No. 81400701).

Conflicts of interest
None.

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How to cite this article: Teng JF, Du JF, Gao F, Guan YW, Ai X. Should peritoneal tears be repaired during retroperitoneal laparoscopic radical nephrectomy? Chin Med J 2021;134:739–740. doi: 10.1097/CM9.0000000000000991