



## Laparoscopic partial splenectomy for upper pole lesions key technical considerations

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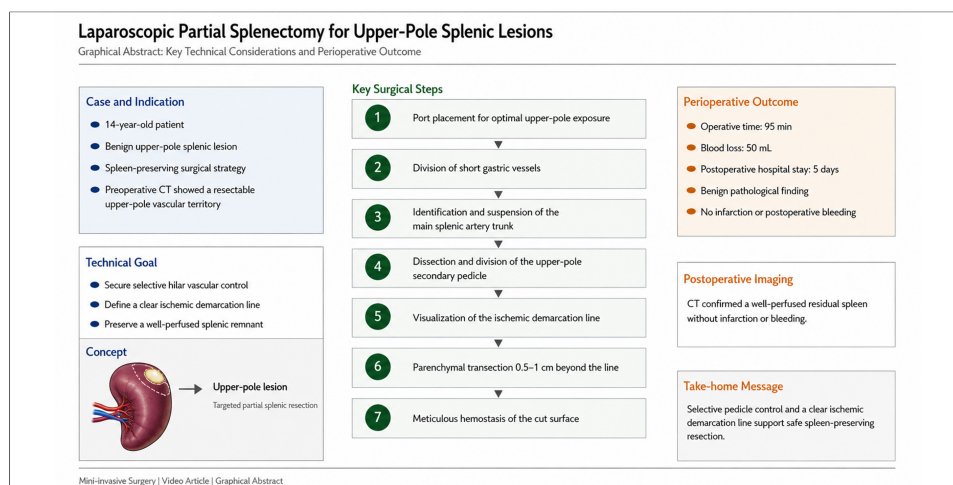
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### BRIEF EXPLANATION

Partial splenectomy is mainly indicated for benign splenic lesions and selected mild traumatic injuries when preservation of splenic immune function is desirable<sup>[1,2]</sup>. A 14-year-old patient with a benign upper pole splenic lesion underwent laparoscopic partial splenectomy. Preoperative enhanced computed tomography (CT) demonstrated an upper pole lesion with a resectable vascular territory. Laparoscopic partial splenectomy offers the advantages of splenic preservation, less surgical trauma, and faster postoperative recovery<sup>[3,4]</sup>, but it also requires precise hilar vascular dissection and reliable control of the transection plane<sup>[5]</sup>. In selected complex cases, preoperative three-dimensional vascular reconstruction may help clarify hilar anatomy, and intraoperative ultrasound may be considered when lesion localization or the resection margin is uncertain<sup>[6,7]</sup>.

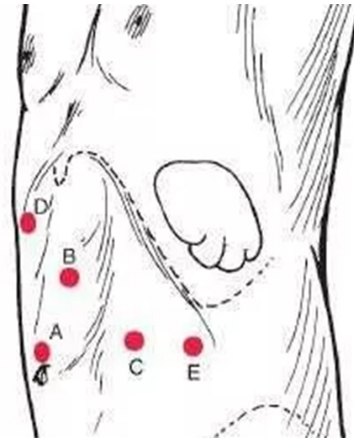
### Surgical technique

The port placement strategy is shown in [Figure 1](#), and the key operative steps are shown in [Figures 2-4](#) and [Video 1](#). After division of the short gastric vessels within the gastrosplenic ligament, the main splenic artery trunk was identified along the



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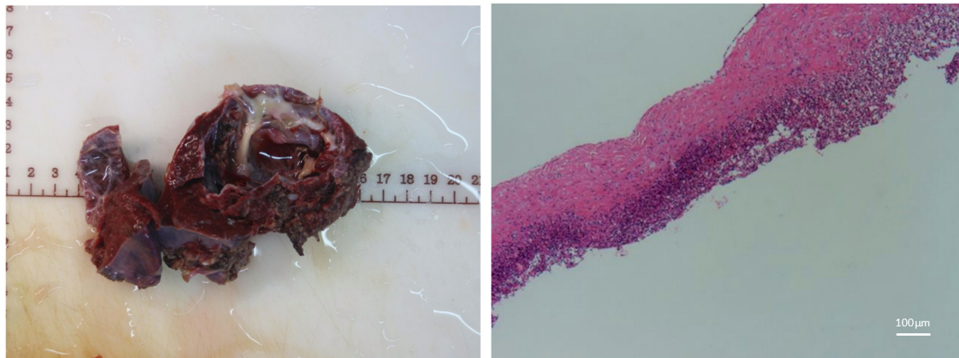
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**Figure 1.** Port placement for laparoscopic partial splenectomy. A: Umbilical trocar; B, C, D, and E: operating trocars.

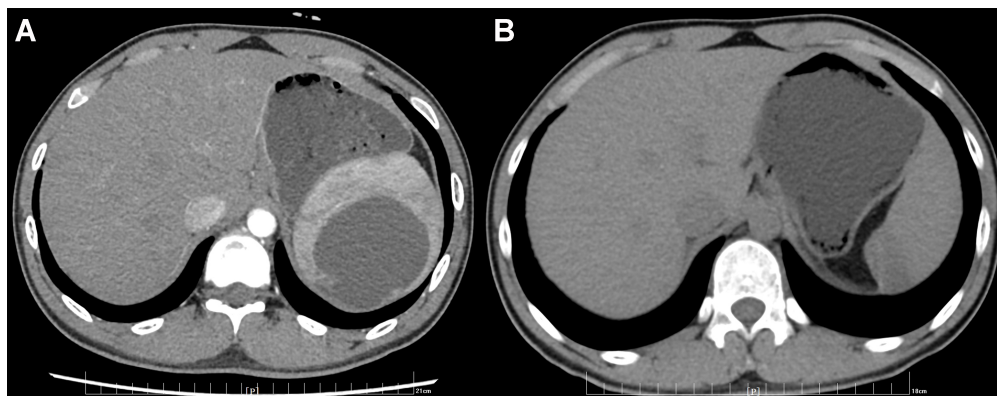


**Figure 2.** Key steps in vascular management and parenchymal transection. (A) Dissection of the secondary splenic pedicle; (B) Visualization of the splenic ischemic demarcation line; (C) Hemostasis of the splenic transection surface.



**Figure 3.** Postoperative pathological findings confirming a benign splenic lesion.

superior pancreatic border and suspended with a silk suture for traction and vascular control. The secondary pedicular vessels supplying the splenic upper pole were then dissected and divided close to the splenic parenchyma en bloc [Figure 2A]. An ischemic demarcation line became evident, and the splenic parenchyma was transected 0.5-1 cm distal to this line using an electrocautery hook [Figure 2B]. Visible vessels on the cut surface were clipped or coagulated carefully, and low-temperature electrocoagulation was applied to achieve hemostasis while minimizing thermal injury [Figure 2C]. Only the ligaments adjacent to the resected segment were divided, whereas the remaining perisplenic ligaments were preserved whenever possible. Operative time was 95 min, blood loss was 50 mL, and the postoperative hospital stay was 5 days. Pathology confirmed a benign lesion [Figure 3], and postoperative CT demonstrated a well-perfused splenic remnant without infarction or bleeding [Figure 4].



**Figure 4.** Abdominal computed tomography images. (A) Preoperative CT scan; (B) Postoperative CT scan demonstrating preservation of the residual spleen. CT: Computed tomography.

## DECLARATIONS

### Authors' contributions

Conceptualization and manuscript drafting: Wei K, Du ZQ

Video preparation: Wei K, Geng XL

Manuscript revision and final approval: Du ZQ

### Availability of data and materials

Not applicable.

### AI and AI-assisted tools statement

Not applicable.

### Financial support and sponsorship

None.

### Conflicts of interest

All authors declared that there are no conflicts of interest.

### Ethical approval and consent to participate

According to institutional policy, ethics committee approval was not required for this video article/case-based educational report. Informed consent was obtained from the patient.

### Consent for publication

Written informed consent for publication of the video and related images was obtained from the patient's legal guardian.

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### Supplementary Materials

#### [Supplementary Materials](#)

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