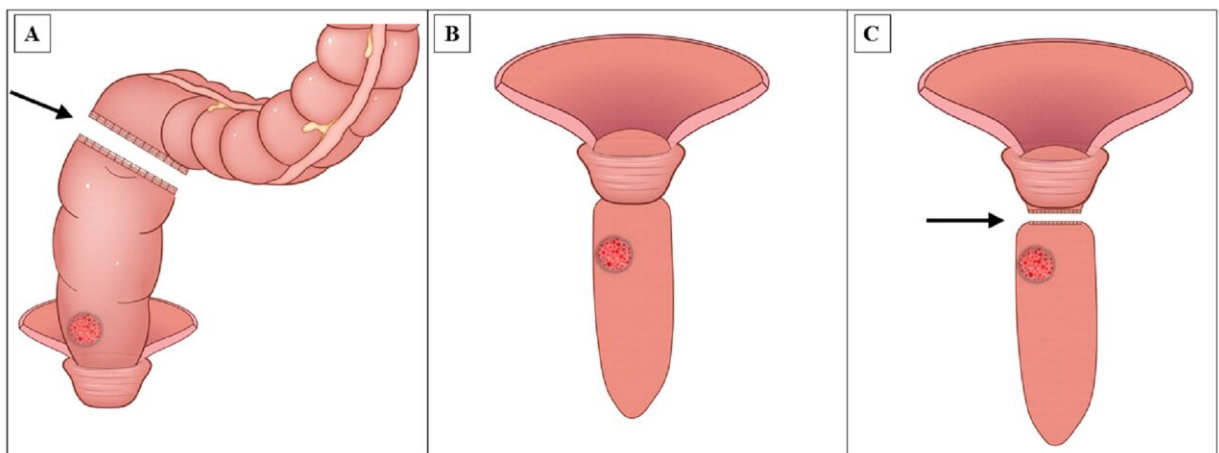


Short-term and oncological outcomes of natural orifice specimen extraction surgery (NOSES) for colorectal cancer

June 14 2022



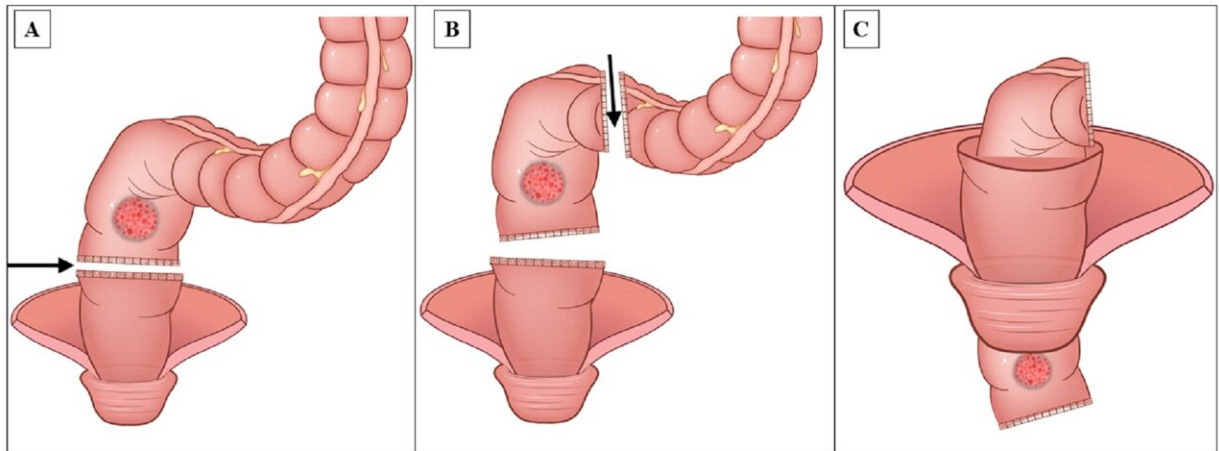
A. Proximal bowel division is performed using linear stapler (The black arrow marks the resection line). B. The rectal specimen is everted out of the body transanally. C. The distal rectal resection is performed extraabdominally (The black arrow marks the resection line). Credit: Science China Press

With the rapid development of minimally invasive surgery for the

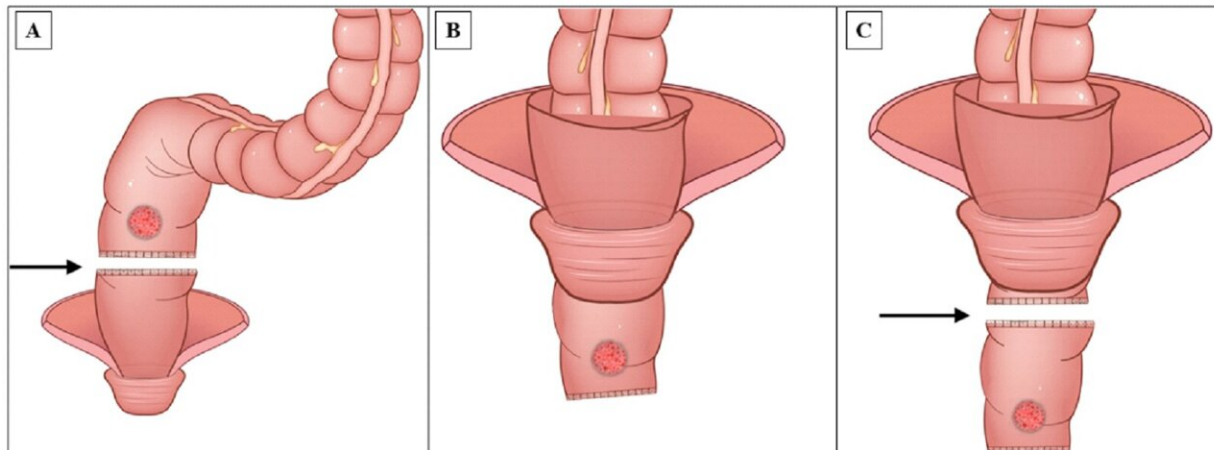
treatment of colorectal diseases, novel surgical techniques aiming at reducing surgical trauma have become frequently discussed issues. By avoiding auxiliary abdominal incision for specimen extraction, natural orifice specimen extraction surgery (NOSES), including transvaginal specimen extraction (TVSE) and transanal specimen extraction (TASE), is thought to be one of the least invasive options in the treatment of colorectal cancer (CRC). However, most previous studies concerning the safety and effectiveness of NOSES are single-centered with limited sample sizes. Whether previous findings can be generalized to a wider patient population remains unclear.

This study led by Prof. Xishan Wang, Prof. Chuangang Fu, Dr. Xu Guan, Dr. Xiyue Hu and Prof. Zheng Jiang performed the first nationwide large-scale study to confirm the safety and feasibility of NOSES for CRC by analyzing the short-term and long-term oncological outcomes. CRC patients who received the NOSES procedure as the primary therapy between August 2008 and May 2021 were registered in this database. All patients were pathologically diagnosed with malignancy.

A total of 5055 CRC patients who underwent NOSES were identified in the database. The overall postoperative complication rate was 14.1%. For rectal [cancer](#), the complication rates of TASE and TVSE were 15.3% and 11.5%, respectively ($P = 0.107$). The rectovaginal fistula rate for TVSE was significantly higher than TASE (2.1% vs 0.4%, $P = 0.005$). For [colon cancer](#), the complication rates of TASE and TVSE were 11.1% and 11.3%, respectively ($P = 0.924$), and there was no difference in all subtypes of complications between TASE and TVSE. These results reveal that the incidence of postoperative complications after NOSES was consistent with that reported in previous studies concerning CLS.



A. Distal bowel division is performed using linear stapler (The black arrow marks the resection line). B. The proximal bowel division is performed using linear stapler (The black arrow marks the resection line). C. The specimen is gently pulled outside of the patient body transanally. Credit: Science China Press



Distal bowel division is performed using linear stapler (The black arrow marks the resection line). B. The distal rectal stump is opened, and the distal side of specimen is gently pulled outside of the patient body transanally. C. The proximal rectal resection is performed extraabdominally (The black arrow marks the resection line). Credit: Science China Press

After exclusion of patients with a follow-up period of

Also, a [systematic review](#) was performed to compare the short-term and oncological outcomes between NOSES and CLS, and 17 studies were included for further analyses. This review has shown that compared with CLS, NOSES presented lower complication rates and several advantages in postoperative recovery, which mainly include earlier postoperative flatus time and shorter hospital stay.

In summary, this is the first national database analysis report confirming

that NOSES could achieve good short-term and oncological outcomes for CRC patients. However, NOSES should be performed cautiously by experienced surgeons in selected CRC patients.

The research was published in *Science Bulletin*.

More information: Xu Guan et al, Short-term and oncological outcomes of natural orifice specimen extraction surgery (NOSES) for colorectal cancer in China: a national database study of 5055 patients, *Science Bulletin* (2022). [DOI: 10.1016/j.scib.2022.05.014](https://doi.org/10.1016/j.scib.2022.05.014)

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