

# A robotic aid for colorectal cancer

Using robotic technology to operate contributes to more accurate and precise outcomes for colorectal cancer patients, explains general and colorectal surgeon Dean Koh



Robotic technology provides more accuracy when carrying out cancer surgery of the rectum. PHOTO: GETTY IMAGES

**Q I am a 63-year-old man who has been diagnosed with colorectal cancer. My doctor said that I may need to undergo robotic surgery. What is robotic surgery and how is it conducted?**

Robotic surgery is a term where robotic technology is used to assist surgeons to perform minimally invasive surgery, also known as laparoscopic surgery.

A common misconception is that robotic surgery is done autonomously by a robot. This is not the case. The surgeon carries out the surgery by controlling the robotic arms and instruments through a console, which is physically separate from the patient's side.

Compared to standard laparoscopy and conventional open surgery, robotic surgery is more accurate as the robotic instruments can mimic hand and wrist functions.

The robotic system also allows up to ten times magnification through high-definition optics, motion scaling and tremor filtering, thus improving the surgeon's precision and accuracy.

**Q Under what circumstances would the doctor use robotic surgery for colorectal cancer?**

The robotic technique is ideal for rectal cancer resection, which removes the cancerous tumour in the rectum.

This is because the rectum is situated in the narrow confines of the pelvis where all the organs and vital structures are in a tight, funnel-shaped space. The improved optics, dexterity and accuracy of the robotic system will help make the operation more precise.

In colorectal cancer, this technique can now be used to remove tumours in all segments of the colon, not just the rectum.

There are however cancers that are currently not suitable for the laparoscopic or robotic approaches, such as those that are large, locally invasive and involve other nearby organs. These cancers remain best treated surgically with the conventional open technique.

**Q What are the benefits of robotic colon surgery compared to traditional surgery?**

Patients will experience significantly less post-operative pain, and are able to regain normal mobility and function earlier.

There are also lower incidences of wound infection, lung infections and bowel ileus (paralysis). Their hospitalisation time is shorter and they can return to work quicker.

Robotic colon surgery also results in completeness in cancer removal and survival rates, similar to doing conventional open surgery.

Contrary to common misconception, there is no compromise to the quality of cancer treatment with these minimally invasive techniques.

**Q What are the patient's options after surgery? Is chemotherapy needed?**

For most colorectal cancers, the first and foremost step of treatment is to remove the cancerous tumour through surgery.

Following successful recovery, additional therapy may be indicated in patients at certain stages of the cancer. Chemotherapy is usually added if the cancer has spread to the lymph nodes.

Radiotherapy has also been shown to reduce the risk of local recurrences following surgery.

A combination of chemotherapy and radiotherapy can be used in certain stages of rectal cancer to shrink the tumour so that there is complete resection of the tumour and preservation of the anal sphincter.



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