

Advances in Surgical Oncology

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Cancer is the dreaded "C" word, the diagnosis of which spells doom for the entire family.

Since ancient history treatment modality for this dreaded disease has been surgery and even today the definitive treatment for all early stage solid cancers is surgical. However since early days, outcomes have greatly improved thanks to the rapid research and progress in the last two decades in the fields of chemotherapy, radiotherapy and targeted molecular therapies which have been used in neoadjuvant settings to make borderline resectable tumours resectable or in the adjuvant settings, to improve disease free periods and overall survival.

But the cornerstone of curative treatment remains surgery. Historically surgery always meant big scars, with risk of bleeding, risk of anastomotic leakages, infections, and decisions about operability. Infections have been largely taken care of in clean cases with better understanding of surgical aseptic techniques and rational use of antibiotics.

Better radiological modalities such as high definition multi slice CT scans, MRI, PET CT scans have come a long way in helping the surgeon planning his surgeries better and avoiding unnecessary

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surgeries. Another major change thanks to better understanding of the disease and benefit of randomised control trials is the shift from "Radical" excisions to limb and organ preservation surgeries. Prime example being the shift from radical mastectomy to modified radical mastectomy to breast conservative surgeries. Also in case of osteosarcoma, the shift from ghastly amputations to limb preservation with the help of neoadjuvant chemotherapies and prosthesis have been a great boon to many.

Similarly in cases of anorectal cancers the ultra-low anterior resection and intersphincteric resection with the help of stapling devices has allowed anal sphincter preserving surgeries and avoiding the gloom of permanent stomas.

Also the new tools on the block besides the electrocautery which is far more refined (both monopolar and bipolar) and also the energy and vessel sealing devices have made surgeries more safe with minimal blood loss. These devices use ultrasonic energy to coagulate and seal vessels upto 7 mm. A word of caution though is that these devices have to be used carefully to avoid collateral damage as they may give a false sense of security.

The biggest change has come in the change in approach to surgery from open which was the most preferred approach to minimal access surgery. This has been in the form of laparoscopic and

thoroscopic surgeries and Robotic surgery.

Laparoscopy was the first entrant, which was initially used for benign surgeries and has gravitated now to cancer surgery. It uses multiple 5 mm to 10mm incision through which 4 to 5 ports are inserted and the surgery is carried out. It also involves a slightly larger incision at the end of surgery for delivery of the specimen. This procedure has apparent advances of avoiding scars, lesser pain, faster recovery and discharge. However, it has a steep learning curve and is not established modality for all cancers. It may

be very attractive for early stage cancers but its use in slightly advanced cancers is questionable. There have been a few clinical trials published which have actually called laparoscopic surgery inferior to open surgery for oncological resections, while some have claimed to have similar results like open.

For patients with cancer, questions remain about the immunologic implications of laparoscopic surgery, the adequacy and standardisation of laparoscopic techniques, the risk for disease recurrence, and the impact on survival.

Organ	Level of Evidence	Grade of Recommendation	Literature
Colon	I	A	Veldkamp et al., Lacy et al., COSTSG, Guillou et al., Hewett et al., Jayne et al., Buunen et al., Liang et al.
Rectum	II	B	Lujan et al., Pechlivadines et al., Zhou et al., Ng et al., Jayne et al., Guillou et al., Barga et al.
Stomach	II	B	Hayashi et al., Huscher et al.
Oesophagus	III	C	Bresadola et al., Benzoni et al.
Pancreas	III	C	Rotellar et al., Kooby et al., Palanivelu et al.
Liver	III	C	Cai et al., Lee et al., Topol et al.
Gastric GIST	IV	none	Hindmarsh et al.
Appendix	IV	none	Bucher et al.
Adrenal Gland	IV	none	Toniato et al., Walz et al.
Gall Bladder	V	none	Paolucchi et al.
Bile Duct	V	none	Weber et al.
Small Intestine	V	none	Tricarico et al., Eccher et al., Soeda et al., Kim et al.

Robotic surgery

The da Vinci surgical system enables surgeons to perform delicate and complex operations through a few small incisions. The da Vinci system consists of several key components, including an ergonomically designed console, where the surgeon sits while operating, a patient-side cart, where the patient is positioned during surgery, interactive robotic arms, a 3DHD vision system, and proprietary EndoWrist instruments. Usually an assistant surgeon washes up to change the instruments throughout the four arms and also may use an accessory laparoscopic port to help in surgery. Vinci is powered by robotic technology that allows the surgeon's hand movements to be scaled, filtered and translated into precise movements of the EndoWrist instruments, working inside the patient's body.

This modality has been mainly used for prostatic resections all over the world, but now is being used for all regions like head and neck, thoracic, gastrointestinal and gynaecological neoplasms.

Advantages

- Minimal blood loss
- Minimal pain
- Minimal scarring
- Minimal complications
- Shorter hospital stay

- Faster recovery and return to normal life.

Conclusion

The most important goal of cancer surgery is cancer-free survival and most recurrences occur in the first three years after operation. The above innovations are with a view to give the patient the best possible outcomes with maximal safety. However discussion with the surgeon is imperative to make the right choice for the best approach.

1. Treatment of cancer is multi pronged approach in which all specialities play a vital role and due to advances in chemotherapy and radiotherapy more curative surgeries are possible by downstaging them.
2. The advances in stapling devices and prosthetics, have made more limb and organ / sphincter preserving surgeries possible.
3. Advances in radiology have made planning of surgeries easier and more precise helping the patient avoid unnecessary surgeries as well as stage the disease better.
4. Minimal access surgery is a promising tool in Cancer surgery it is claiming great advantages and has its merits but has to be rationally used and has yet to establish itself against the traditional open surgery.

Hypertension and Hyperuricaemia: A Compelling Correlation

The association between hyperuricaemia and hypertension has been evaluated in several studies.

The overall prevalence of hyperuricaemia was significantly higher among the cases (24%) than the controls (6%). Mean SUA levels were also significantly higher in cases than in controls.

Mangesh Tiwaskar, Journal of Association of Physicians of India, 2018, Vol 66, 11-12