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Robotic rectal cancer surgery: Icg identification of line of transection

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Rectal cancer is the second most common cancer in women and third most common cancer in men in the world. The clinical spectrum is different in India. The mean age at diagnosis in India is 47 years with male preponderance. Most of the patients have advanced stage at presentation and signet ring cell histology. Anastomotic leak is the most feared complication of rectal cancer surgery secondary to decreased vascularity. ICG has shown to identify the real-time image of vascularity of colon, thereby decreasing the risk of anastomotic leak and excess colonic mobilization. Earlier studies have shown that ICG based localization of the line of the transaction is technically possible and safe and can avoid unnecessary excess bowel mobilization and resection.

Aim: To find out the line of transection detection rate using ICG.

Materials and Methods: Study design: Prospective study. Study period: 17 September 2017 to 17 March 2018. Study setting: Manipal Hospital, Bengaluru. Study subjects: patients with rectal cancer satisfying the inclusion criteria. Sample size: This is a prospective study done over a period of six months. A total of 30 patients were enrolled in the study. Inclusion criteria: Patients with biopsy proven rectal cancer. Exclusion criteria: Patients with known allergy to ICG.

Methodology: All patients fulfilling the inclusion criteria and willing to participate in the study were subjected to robotic surgery. Following the distal transection or mobilisation, ICG injection was given IV through the canula. 3cc of 2.5mg/ml concentration was injected intra venously followed by flushing with 10cc of distilled water. The line of transection was identified by firefly mode and proximal transection was done with oncologically safe margin. The study has been approved by institutional ethics committee.

Statistical Methods: The collected data variables were entered into excel sheet. After appropriate data filtration, the data was transferred and analysed using SPSS software version 20. Quantitative data was analysed using t test and $p < 0.05$ was considered statistically significant.

Results: The mean age \pm SD of the patients was 52.4 ± 12.4 years. There was male preponderance with 61.5% being males. ICG identified the line of transection in rectal cancers with authenticity in 100% of patients. Unnecessary splenic flexure mobilization and resection of the excess sigmoid colon could have been avoided in 76.9% of patients. Anastomotic failure could have resulted in 7.6% of patients if anastomosis has been done by clinical judgment alone. This can identify the vascular segment of bowel real time and thereby provides a safe anastomosis.

Biography

Revant Gangasani, currently working as a fellow in robotic oncosurgery with special interest in gastrointestinal cancers has completed his MBBS from Kakinada, India in 2007 after which he did his Masters from Guntur Medical College, Guntur, India. He did his MCh in surgical oncology from SVIMS, Tirupathi, India. He is a Manipal University Fellow in Robotic Surgery, India under mentorship of Dr Somashekhar who is an authority in Robotic surgery. He is currently working on projects like Port placement techniques in robotic surgery and role of ICG in robotic surgery.

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