

Surgical Care for Gastro-Intestinal Stromal Tumours

Patnala Mohan Patro*

Former Professor and HOD of Surgery, GIMSR, GITAM University, India

*Corresponding Author: Patnala Mohan Patro, Former Professor and HOD of Surgery, GIMSR, GITAM University, India.

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Gastrointestinal stromal tumors (GISTs) account for less than 1% of GI tumors, but they are the most common mesenchymal neoplasms of the GI tract [1]. GISTs are usually found in the stomach or small intestine but can occur anywhere along the GI tract and rarely have extra-GI involvement.

Surgery is the definitive therapy for localized GISTs [2]. Despite the proven success of Imatinib and other newer tyrosine kinase inhibitors, surgical resection remains the treatment of choice and offers the only chance for cure of GIST [3].

The main operative principles

- Resection of the tumor with negative microscopic margins is needed. Wide resection of the tumor (e.g., 2-cm margin) has not been shown to improve outcomes
- For small GISTs, local resection may be adequate, if it is technically possible and does not compromise a complete resection. Since limited resection is adequate for small malignant GISTs, minimally invasive surgery techniques can be adopted in select cases.
- Small intestinal tumors may require segmental resection.
- Gastric GIST: A wedge resection may be used for small gastric GISTs in some cases [4]. Because adequate resection for small malignant GISTs can be achieved by wedge resection, minimally invasive surgery techniques can be considered in selected cases, such as those in favorable anatomic locations (e.g., the greater curvature or anterior wall of the stomach) [5].

Zhao, *et al.* reported that endoscopic full-thickness resection (EFR) is feasible for gastric GISTs of up to 5.0 cm in size; although the R0 resection rate was significantly lower with EFR (95.3%) than with laparoscopic or surgical resection (100%), EFR involved significantly fewer postoperative complications, shorter length of hospital stay, and lower cost [6].

- Avoid enucleation of small tumors, since predicting the pre-operative malignant potential of GISTs is difficult even if the tumor appears benign.
- For locally invasive tumors, en bloc resection of adjacent involved organs, such as colon, spleen, or liver, may be indicated.
- Routine lymphadenectomy is not indicated, as lymph node involvement is very rare.
- Recurrence and survival are not associated with the type of resection (wedge resection versus any type of gastrectomy), provided that a complete resection (R0) is performed.
- Every effort must be made at avoiding tumor rupture during the operation. Tumor rupture is associated with a worse prognosis because of peritoneal seeding.
- In cases of disseminated disease, consider palliative resection, because long-term survival has been reported only in certain cases.

- Consider resection in patients with recurrent disease that manifests as a solitary lesion in the liver or peritoneal cavity. Published reports of liver resection for hepatic metastasis from gastric and other GISTs suggest a survival benefit in selected patients.

Ability of imatinib may render initially inoperable GIST tumors to resectable [7].

There may be a role for cytoreductive surgery (R0 or R1 resection) in the setting of recurrent metastatic disease confined to the abdomen

- A significant minority of patients require liver resections (40%) and the majority require multi-visceral resection, including bowel resections, peritonectomy, and/or omentectomy (60%). Even after such aggressive resection, R1 resections (microscopically positive resections) are the rule, R0 resections are rare, and about 5% of patients still have bulky disease remaining.

Up to 70% of patients able to undergo an R0/R1 resection in the setting of stable or partially responsive disease enjoy a progression-free survival as long as 4 years after the initiation of imatinib therapy [8].

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