Trans-anal minimally invasive surgery (TAMIS) for completion local excision of well-differentiated rectal neuroendocrine tumours

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Background:
• Rectal NETs (R-NETs) <2cm are often amenable to endoscopic attempts at resection.
• However, initial resections are often incomplete.
• Extended monitoring or radical surgery may then be required.
• Trans-anal minimally invasive surgery (TAMIS) allows resection of rectal tumours while reducing surgical morbidity, whilst being less invasive than
• There is little data on the use of TAMIS in R-NETs – both in terms of safety and oncological outcomes.

Aim:
• To assess the results of TAMIS for completion local excision of R-NETs following endoscopic resection.

Methods:
• Single-institution, retrospective study
• Patients undergoing TAMIS at Sunnybrook Health Sciences Centre from 2013-2017.
• Inclusion criteria:
  • Incomplete endoscopic resection (margin ≤ 1mm)
  • Visible scar on repeat endoscopy
  • Localized disease on systemic imaging.
  • Full-thickness resection of the endoscopic scar was performed via TAMIS. (Fig.1, Fig.2)

Outcomes:
• Demographics
• 30-day major morbidity (Clavien-Dindo Grade III-V)
• Resection margin
• Oncological outcomes.

Results:
• Nineteen patients included, age range 31-70, 10 male/9 female.
• All Grade 1 (WHO 2010) NET
  • 13 initially underwent R2 resections, 4 R0 with close margins (0.1mm, 0.25mm, 0.25mm, <1mm), 2 not recorded (fragments of tissue)
  • Median distance from anal verge: 7cm (range 5-13)
  • Median size: 5mm (range 1-12mm)
  • Median operating time: 34 minutes (range 20-79)
  • One case resulted in 500cc of intraoperative blood loss; there were no complications at 30 days.
  • Viable tumour was found in four specimens, all Grade 1 with negative margins.
  • One patient subsequently underwent low anterior resection for a persistent mesorectal lymph node, confirming Grade 1 NET (Ki67 1%)
  • At 18 months median follow-up, all patients were alive and asymptomatic, with no change in sphincter function and no evidence of local recurrence.

Discussion:
• Currently published series of TAMIS for R-NET include <10 patients, with the largest series (Lee 2014, N=9) not reporting on WHO 2010 grade.
• Attempts to gather multi-institutional data regarding the safety of TAMIS in rectal NETS are underway.
• Prospective studies may confirm the safety and oncological efficacy of TAMIS, and potentially decrease the need for intense follow-up in this population.

Fig 1: GelPOINT path transanal port
Fig 2: TAMIS for rectal NET

Conclusions:
• TAMIS is a safe and feasible approach for well-differentiated R-NETs to clear margins following incomplete endoscopic resection.
• It limits invasiveness of intervention and avoids time-consuming monitoring after incomplete resection.
• Prospective trials of TAMIS in R-NETS are warranted.