Submucosal Tunneling Endoscopic Resection for Submucosal Tumors of Less Than 35 mm in the Upper and Lower Gastrointestinal Tract: Systematic Review and Meta-Analysis.

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Objectives: We conducted a systematic review and meta-analysis to synthesize the current evidence on the efficacy and safety of submucosal tunneling endoscopic resection (STER) for submucosal tumors (SMTs) of the gastrointestinal (GI) tract (3,4).

Methods: This study adhered to PRISMA guidelines and included observational studies on patients with upper or lower GI tract SMTs who underwent STER (5, 6). Data were extracted from these studies and analyzed using Open Meta[Analyst] and Jamovi software, with outcomes including resection rates, recurrence, and complications. Quality assessment and risk of bias were evaluated using the Newcastle-Ottawa Scale and NIH Quality Assessment Tool, and publication bias was evaluated via funnel plots and regression tests.

Results: This meta-analysis of 27 studies indicated high complete and En-bloc resection rates of 96.1% (95% CI: 94.1% to 98.0%) and 90.3% (95% CI: 85.6% to 94.9%), respectively (1,2,3,7–30). The studies exhibited a low recurrence rate of 2.0% (95% CI: 1.2% to 3.4%) and moderate incidence of complications such as subcutaneous emphysema and pneumomediastinum (10.0%, 95% CI: 5.5% to 17.6%) and pneumothorax (6.6%, 95% CI: 3.9% to 11.0%). Other adverse events like perforation and bleeding were rare, occurring at rates of 2.3% (95% CI: 1.1% to 4.7%) and 2.5% (95% CI: 1.2% to 5.2%), respectively. Furthermore, the average operative time was 59.28 min (95% CI: 53.83 to 64.73), with an average hospital stay of 4.77 days (95% CI: 3.91 to 5.63).

Conclusion: STER demonstrates high resection rates and low recurrence in the treatment of gastrointestinal SMTs. While complications like subcutaneous emphysema, pneumomediastinum, and pneumothorax do occur, they remain low in incidence. Rarer complications, such as perforation and bleeding, underscore the overall safety of the procedure.

Keywords: Submucosal Tunneling Endoscopic Resection; Submucosal Tumors; GIT; Meta-analysis

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