IMPROVEMENT OF ENDOSCOPIC TECHNOLOGIES IN THE TREATMENT OF POLYPOID NEOPLASMS OF THE GASTROINTESTINAL TRACT

Ismailov Saidmurad Ibragimovich[1,2],
Djumaniyazov Djavokhir Azatbaevich[1],
Yigitaliev Sardor Khusanboevich[2]
State Institution "Republican Specialized Scientific and Practical Medical Center for Surgery named after academician V.Vakhidov"[1]
Tashkent State Dental Institute[2]

Abstract

This work is based on the development of a new method for endoscopic removal of superficial polypoid formations of the mucous membrane of the gastrointestinal tract (GIT), which is aimed at reducing the risk of developing specific complications and recurrence of the formation of these formations. The clinical trial was conducted in a retro-prospective format for the period from 2019 to 2023. Endoscopic interventions for upper GIT polyps in the comparison group included cold removal with biopsy forceps – 16 (8.8%) formations, cold loop removal – 26 (14.3%), thermal removal by electroexcision – 94 (51.6%), EMR – 25 (13.7%) cases and dissection in the submucosal layer (ESD) – 21 (11.5%). The introduction of the proposed method of endoscopic removal of polypoid and non-polypoid neoplasms in general allowed to increase the proportion of good immediate and long-term results in excision of polyps of the upper GIT from 73.4% to 95.9%.

Keywords: improvement; endoscopic technologies; polypoid neoplasms of the gastrointestinal tract; specific complications.

This work is based on the development of a new method for endoscopic removal of superficial polypoid formations of the mucous membrane of the gastrointestinal tract (GIT), which is aimed at reducing the risk of developing specific complications and recurrence of the formation of these formations. The study includes two directions: experimental and clinical. The experimental part is devoted to the study of the possibilities of using a high-energy diode laser in conjunction with the submucosal injection of a gel substance, including antiseptic and hemostatic agents, when performing the removal of superficial tumors of the mucous membrane.

The clinical trial was conducted in a retro-prospective format for the period from 2019 to 2023. A retrospective analysis was made of the results of endoscopic treatment of superficial tumors of the GIT mucosa in 246 patients, in whom 352 formations were removed. A prospective study was conducted in the main group of 214 patients, in whom 319 formations were removed using the proposed method. The largest number of neoplasms were removed from the stomach – 127 (51.6%) patients in the comparison group and 109 (50.9%) in the main group, 3 (1.2%) and 4 (1.9%) neoplasms were removed from the esophagus, respectively, duodenum (duodenum) – 4 (1.6%) and 5 (2.3%). Neoplasms were removed from the colon in 112 (45.5%) and 96 (44.9%) patients.

Endoscopic interventions for upper GIT polyps in the comparison group included cold removal with biopsy forceps – 16 (8.8%) formations, cold loop removal – 26 (14.3%), thermal removal by electroexcision – 94 (51.6%), EMR – 25 (13.7%) cases and dissection in the submucosal layer (ESD) – 21 (11.5%). In the main group, a new method of endoscopic excision was used, while thermal removal by laser excision was performed in 90 (53.9%) cases, EMR –

42 (25.1%) and ESD – 35 (21.0%) cases. When localized in the colon, endoscopic interventions in the comparison group included cold removal with biopsy forceps – 16 (9.4%) formations, cold removal with a loop – 34 (20%), thermal removal by electroexcision – 58 (34.1%), EMR – 43 (25.3%) cases and ESD – 19 (11.2%). In the main group, a new method of endoscopic excision was used, while thermal removal by laser excision was performed in 72 (47.4%) cases, EMR – 48 (31.6%) and ESD – 32 (21.1%) cases.

The first clinical evaluation of the effectiveness of the proposed method of endoscopic removal of superficial neoplasms of the upper GIT, taking into account the accumulation of experience in performing these manipulations, showed that this technique increases the probability of performing excision in a single block from 69.8% to 82.6% ($p=0.006$), significantly reduces the risk of delayed hemorrhagic manifestations requiring additional manipulations (from 3.3% to 0.6%), and also generally provided a decrease in the overall incidence of complications from 7.5% to 0.8% ($p=0.011$), as well as a reduction in the hospital period after intervention from 3.5±1.2 to 3.1±0.9 days ($p<0.05$).

Analysis of the long-term results of endoscopic removal of superficial neoplasms of the upper part of GIT allowed us to determine that excision using a diode laser, due to the technical features of the method, reduced the risk of recurrence of pathology from 17.4% to 3.1% ($p<0.001$), while this trend was noted as when removing a single block (from 5.0% to 0.9%; $p=0.034$), and with fragmented excision (from 28.0% to 7.7%; $p=0.040$), in turn, depending on the initial size of polyps, the proportion of recurrences decreased from 7.8% to 0.9% with formations up to 1 cm ($p=0.012$), from 33.3% to 4.5% with formations 1-2 cm ($p=0.018$) and from 60.0% to 8.3% with formations of more than 2 cm ($p=0.023$).

Endoscopic removal of superficial polypoid and non-polypoid neoplasms of the colon mucosa according to the developed technique allowed to increase the probability of excision in a single block from 57.1% to 70.4% ($p=0.014$), significantly reduce the risk of hemorrhagic manifestations requiring additional manipulations both during the intervention (from 4.7% to 0%) and delayed bleeding in the next the period (from 2.4% to 0.7%) ($p=0.012$), as well as the overall overall complication rate from 4.5% to 1.0%, while the duration of the hospital period after the intervention decreased from 4.0±1.2 to 3.4±1.0 days ($p<0.05$).

The risk of recurrence after removal of superficial tumors from the colon depends on factors such as size, method of removal and localization, while the proposed technique allowed to reduce this indicator across the entire sample from 24.2% to 5.0% ($p<0.001$), when removed in a single block - from 7.5% to 1.1% ($p=0.037$), fragmented excision from 24.6% to 7.0% ($p=0.019$), sizes of formations up to 1 cm from 3.8% to 0%, 1-2 cm – from 7.7% to 0%, more than 2 cm – from 20.4% to 4.5% ($p=0.002$), in turn, when removing formations In the right half of the colon, the recurrence rate of pathology decreased from 23.7% to 5.3% ($p=0.005$) and in the left part from 9.3% to 1.3% of cases ($p=0.027$).

The introduction of the proposed method of endoscopic removal of polypoid and non-polypoid neoplasms in general allowed to increase the proportion of good immediate and long-term results in excision of upper GIT polyps from 73.4% to 95.9%, colon polyps from 70.3% to 93.8%, in turn, the frequency of unsatisfactory outcomes decreased from 18.3% to 3.1% ($p<0.001$) and from 24.2% to 5.0% ($p<0.001$), respectively.

References

1. Yakubov F.R., Erniyazov E.A., Sapaev D.S. (2023). Modern Treatment of Mallory-Weiss Syndrome. International journal of health systems and medical sciences, 2(4), 27–33. Retrieved from https://interpublishing.com/index.php/IJHSMS/article/view/1415

2. Yakubov F.R., Sadykov R.A., Mardonov J.N., Erniyazov E.A., Sapaev D.S. Evaluation of Hemostatic Efficacy of Hemoben Gel in Ruptures Of The Gastric Mucosa in An Experiment. Bull. Env. Pharmacol. Life Sci., Vol 12 [8] July 2023: 56-66.

3. Якубов Ф.Р., Эрниязов Э.А., Сапаев Д.Ш., Маткурбанов Н.О. (2023). Улучшения лечебно-диагностического процесса при синдроме Меллори – Вейсса. Academic research in modern science, 2(2), 154–156. https://doi.org/10.5281/zenodo.7559998

4. Якубов Ф.Р., Сапаев Д.Ш., Эрниязов Э.А., Маткурбонов Н.О. (2023). Современный подход в лечение при синдроме Меллори - Вейсса. Междуродная конференция академических наук, 2(1), 103–105. https://doi.org/10.5281/zenodo.7563829

5. Якубов Ф.Р., Сапаев Д.Ш., Эрниязов Э.А., Маткурбонов Н.О., Якубов Р.Ф. Меллори - Вейсс синдромини кам инвазив усулларини қўллаган ҳолда ташхислаш ва даволаш. Биология ва тиббиёт муаммолари. 2023, №1 (142). – Б. 143-145.