

## ENDOSCOPIC INTERVENTIONS FOR SUPERFICIAL NEOPLASMS OF THE UPPER GASTROINTESTINAL TRACT

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**Abstract:** The article highlights the results of endoscopic treatment of polypoid neoplasms of the upper gastrointestinal tract. The aim of this study is to reduce the risk of recurrence, bleeding and other postoperative complications after endoscopic removal of gastrointestinal polyps. The clinical study is based on an assessment of the results of treatment of superficial formations in the upper gastrointestinal tract. In the comparison group, 182 formations were removed in 134 (54.5%) patients and 167 formations were removed in 118 (55.1%) patients of the main group). Analysis of the long-term results allowed us to determine that excision of polyps using a diode laser according to the proposed method, due to the technical features of the method, reduced the risk of recurrence of the formation of superficial neoplasms from 17.4% to 3.1%. The results were considered satisfactory if there were no recurrence of pathology, but there were any clinically significant complications resolved conservatively (postpolypectomy electrocoagulation syndrome) or repeated endoscopic intervention (delayed bleeding) (grade 2-3a according to Clavien-Dindo).

**Keywords:** mucosal polyps; gastrointestinal tract; esophagogastroduodenoscopy; Clavien-Dindo.

Polyps of the mucous membrane of the gastrointestinal tract (GIT) are defined as luminal protrusions above the plane of the adjacent mucous membrane, regardless of its histological type [1]. Polyps of the upper gastrointestinal tract are usually detected accidentally during esophagogastroduodenoscopy, and their prevalence is estimated from 0.5 to 23% of all studies conducted [2].

The aim of this study is to reduce the risk of recurrence, bleeding and other postoperative complications after endoscopic removal of GIT polyps. To do this, our clinic has developed a method for endoscopic excision of GIT polyps. The main technical aspects of the method include the introduction of a gel prepared from Hemoben powder and 20 ml of methylene blue solution into the submucosal layer in the area of the base of the polyp with the formation of a roller. Next, the polyp is excised along with the surrounding healthy mucosal tissue to the submucosal layer by using a diode laser of the Gbox system.

The clinical study is based on an assessment of the results of treatment of superficial formations in the upper part of GIT. In the comparison group, 182 formations were removed in 134 (54.5%) patients and 167 formations were removed in 118 (55.1%) patients in the main group). There were 104 patients with single formations in the comparison group, 86 in the main group, single formations (up to 5) were in 29 and 30 patients, respectively, multiple (up to 20) only in 1 and 2 patients. The average size of the formations in the comparison group was 0.9 cm, in the main group 1.0 cm.

Endoscopic interventions in the comparison group included cold removal with biopsy forceps, cold removal with a loop, thermal removal by electroexcision, EMR and dissection in the submucosal layer. A new method of endoscopic excision was used in the main group.

The conducted study on the first clinical evaluation of the effectiveness of the proposed method of endoscopic removal of superficial neoplasms of the upper GIT allowed us to establish that this technique increases the probability of performing excision in a single block from 69.8% to 82.6% ( $\chi^2=7,874$ ;  $df=1$ ;  $p=0.006$ ), significantly reduces the risk of hemorrhagic manifestations requiring additional manipulations after removal as during the intervention (from 6.6% to 0%), and delayed bleeding in the near term (from 3.3% to 0.6%) ( $\chi^2=14.966$ ;  $df=2$ ;  $p<0.001$ ), as well as the overall overall complication rate from 7.5% to 0.8% ( $\chi^2=6.578$ ;  $df=1$ ;  $p=0.011$ ), in general, a reduction in the hospital period after the intervention was also obtained from  $3.5\pm 1.2$  to  $3.1\pm 0.9$  days ( $t=2.90$ ;  $p<0.05$ ). At the same time, the technique allows performing R0 resection in 91.5% of cases (with polyps up to 1.0 cm - 96.3%, more than 1.0 cm – 88.6%).

Analysis of the long-term results allowed us to determine that excision of polyps using a diode laser according to the proposed method, due to the technical features of the method, reduced the risk of recurrence of the formation of superficial neoplasms from 17.4% to 3.1% ( $\chi^2=11.219$ ;  $df=1$ ;  $p<0.001$ ), while this trend was noted as when removing a single block (the recurrence rate was reduced from 5.0%

to 0.9%;  $\chi^2=4.511$ ;  $df=1$ ;  $p=0.034$ ), and with fragmented excision (from 28.0% to 7.7%;  $\chi^2=4.244$ ;  $df=1$ ;  $p=0.040$ ), as well as depending on the initial size of polyps: up to 1 cm from 7.8% to 0.9% ( $\chi^2=6,324$ ;  $df=1$ ;  $p=0.012$ ), 1-2 cm – from 33.3% to 4.5% ( $\chi^2=5,683$ ;  $df=1$ ;  $p=0.018$ ) and with formations of more than 2 cm – from 60.0% to 8.3% ( $\chi^2=5,236$ ;  $df=1$ ;  $p=0.023$ ).

Summarizing all the results of treatment, the following can be noted. If we consider all patients who were initially observed and subsequently traced in the long-term period after endoscopic interventions, the introduction of a new technique for endoscopic excision of GIT upper polyps allowed to generally improve treatment results. In our study, we considered the results to be good, which excluded the development of immediate complications after manipulation and recurrence of polyp formation. The results were considered satisfactory if there were no recurrence of pathology, but there were any clinically significant complications resolved conservatively (postpolypectomy electrocoagulation syndrome) or repeated endoscopic intervention (delayed bleeding) (grade 2-3a according to Clavien-Dindo). The results were considered unsatisfactory when there was a complication that required emergency surgery (perforation, (grade 3b according to Clavien-Dindo) or in the long term, recurrence of neoplasm formation was noted. If we consider the cohort of patients only followed in the long-term period, the proportion of good results in the comparison group was 73.4% (in 20 out of 109 patients), satisfactory - 8.3% (9) and unsatisfactory – 18.3% (20). In the main group, the results corresponded to good in 95.9% (in 94 of 98 patients) of cases, satisfactory in 1.0% (1) and unsatisfactory in 3 (3.1%) of cases ( $\chi^2=19.562$ ;  $df=2$ ;  $p<0,001$ ).

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