

ANALYSIS OF ENDOSCOPIC TREATMENT OF SUPERFICIAL POLYPOID NEOPLASMS OF THE COLON MUCOSA

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Abstract: One of the most frequent localization of polypoid formations of the mucous membrane is the colon, while this pathology is of particular importance in terms of the risk of colorectal cancer. The material for the analysis of clinical studies was the evaluation of the results of treatment of patients with superficial neoplastic lesions of the colon. In 42 cases, polypoid formations of type 0-Is were removed in the comparison group and 39 in the main group. Non-polypoid slightly raised surface formations (0-IIa) were removed in 125 and 109 cases, respectively. 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: polypoid formations of the mucous membrane; endoscopic treatment; the colon mucosa; Clavien-Dindo.

One of the most frequent localization of polypoid formations of the mucous membrane is the colon, while this pathology is of particular importance in terms of the risk of colorectal cancer [1].

The material for the analysis of clinical studies was the evaluation of the results of treatment of patients with superficial neoplastic lesions of the colon. This group included patients with superficial formations in the colon, 112 patients in the comparison group (170 formations were removed) and 96 patients in the main group (152 formations were removed). There were 75 patients with single formations in the comparison group, 60 in the main group, 2 formations in 22 and 21 patients,

respectively, 3 formations in 12 and 13 and more than 3 in 3 and 2. The average size in the comparison group was 1.8 cm, in the main group 1.9 cm.

In 42 cases, polypoid formations of type 0-Is were removed in the comparison group and 39 in the main group. Non-polypoid slightly raised surface formations (0-IIa) were removed in 125 and 109 cases, respectively. Also, after the introduction of the submucosal dissection method, 3 LST-type formations (laterally spreading formation) were removed in the comparison group, there were 4 such formations in the main group.

Endoscopic interventions in the comparison group included cold removal with biopsy forceps – 16 formations, cold removal with a loop – 34, thermal removal by electroexcision – 58, EMR – 43 cases and ESD – 19. In the main group, a new method of endoscopic excision was used, while thermal removal by laser excision was performed in 72 cases, EMR – 48 and ESD – 32 cases. 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.

Endoscopic removal of superficial polypoid and non-polypoid neoplasms of the colon mucosa according to the proposed method allowed to increase the probability of excision in a single block from 57.1% to 70.4% ($\chi^2=6.147$; $df=1$; $p=0.014$), significantly reduce the risk of hemorrhagic manifestations requiring additional manipulations after removal as during intervention (from 4.7% to 0%), and delayed bleeding in the near term (from 2.4% to 0.7%) ($\chi^2=8,980$; $df=2$; $p=0.012$), as well as the overall overall complication rate from 4.5% to 1.0%, while reducing the hospital period after intervention from 4.0 ± 1.2 to 3.4 ± 1.0 days ($t=4.23$; $p<0.05$). At the same time, the technique allows performing R0 resection in 79.7% of cases (with polyps up to 2.0 cm - 91.7%, more than 2.0 cm – 76.9%).

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 24.2% to 5.0% ($\chi^2=12.142$; $df=1$; $p<0.001$), while this trend was noted as when removing a single block (the recurrence rate was reduced from 7.5% to 1.1%; $\chi^2=4.379$; $df=1$; $p=0.037$), and with fragmented excision (from 24.6% to 7.0%; $\chi^2=5.554$; $df=1$; $p=0.019$), as well as depending on the initial size of polyps: up to 1 cm from 3.8% to 0% ($\chi^2=0.825$; $df=1$; $p=0.364$), 1-2 cm – from 7.7% to 0% ($\chi^2=1.923$; $df=1$; $p=0.166$) and with formations over 2 cm – from 20.4% to 4.5%

($\chi^2=10.285$; $df=1$; $p=0.002$). In turn, the risk of recurrence of the formation of superficial neoplasms in the colon depended not only on their initial size and removal option, but also on localization. In particular, when removing formations from the right half of the colon, the proposed method allowed to reduce this indicator from 23.7% to 5.3% ($\chi^2=7.904$; $df=1$; $p=0.005$), in the left part of the colon from 9.3% to 1.3% of cases ($\chi^2=4.905$; $df=1$; $p=0.027$). Summarizing all the results of treatment, the following can be noted.

If we consider all patients initially observed and subsequently traced in the long-term period after endoscopic interventions, the introduction of a new technique for endoscopic excision of polypoid and non-polypoid neoplasms of the colon has generally improved 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 relapses of neoplasm formation were noted in the long-term period.

If we consider the cohort of patients only tracked in the long-term period, the proportion of good results in the comparison group was 70.3% (in 64 of 91 patients), satisfactory – 5.5% (5) and unsatisfactory - 24.2% (22). In the main group, the results corresponded to good in 93.8% (in 75 out of 80 patients) of cases, satisfactory in 1.3% (1) and unsatisfactory in 4 (5.0%) cases ($\chi^2=15,355$; $df=2$; $p<0,001$).

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