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Original Article

Laparoscopic cytoreductive surgery for metastatic colon cancer – how to improve treatment strategy

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ABSTRACT

Background: Colon cancer (CC) one of the most common oncological disease in World. Up to 30% patients in Russia have metastatic CC at first visiting to oncologist. The treatment results still controversial. Nowadays, minimally invasive laparoscopic precision technique allowed extending the indication for cytoreductive surgery even in patients with severe comorbidities.

Materials and methods: 89 patients with colon cancer (T1-4a) and curable synchronous distant metastases include in study. All patients underwent cytoreductive surgery with primary tumor resection. In study group (44) we performed laparoscopic surgery, in main group (45) – open surgery procedure. The groups were similar by sex, age, tumor localization and histological structure, comorbidities.

Results: R0 resection performed 27% patients. The average number of lymph node removal was similar 13 and 12 respectively. Average operation time was significantly longer in study group 210 vs 120 min. In study group blood loss was lower: 300 mL vs 1200 mL. Postoperative patient recovery shorter after laparoscopic surgery ($p < 0.05$): time to activation 2.2 vs 3.9 days; time to first peristalsis – 1.8 vs 4.5 days; first bowel movement – 3.4 vs 4.8 days; first food taken – 2.9 vs 3.9 days. Shorter time of analgesics intake – 2.3 vs 4.4 days, $p < 0.05$. Hospital stay shorter: 9.3 vs 13.4 days, $p = 0.05$. Time to start chemotherapy reduced since 27.5 to 14.7 days, $p < 0.05$. Postoperative complications lower in study group: 6.8 vs 17.8%, $p = 0.05$. Kaplan–Meier 2-year overall survival were similar: 69.5% vs 61.6%, $p = 0.96$.

Conclusion: Laparoscopic cytoreductive surgery for metastatic CC is safe, minimized surgical trauma and speed up patient recovery.

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Cirurgia laparoscópica citorredutora para câncer de cólon metastático – como melhorar a estratégia de tratamento

Palavras-chave:
Cirurgia laparoscópica para câncer colorretal
Cirurgia citorredutora
Câncer colorretal metastático

RESUMO

Fundamento: Câncer de cólon (CC) é uma das doenças oncológicas mais comuns no mundo. Até 30% dos pacientes na Rússia têm CC metastático na primeira visita ao oncologista. Os resultados do tratamento ainda são controversos. Atualmente, a técnica de precisão laparoscópica minimamente invasiva permitiu estender a indicação para a cirurgia citorredutora mesmo em pacientes com comorbidades graves.

Materiais e métodos: 89 pacientes com câncer de cólon (T1-4a) e metástases distantes síncronas curáveis foram incluídos no estudo. Todos os pacientes foram submetidos à cirurgia citorredutora com ressecção do tumor primário. No grupo de estudo (44) realizamos cirurgia laparoscópica, no grupo principal (45), a cirurgia aberta. Os grupos eram semelhantes em relação à sexo, idade, localização e estrutura histológica do tumor, e comorbidades.

Resultados: A ressecção R0 foi realizada em 27% dos pacientes. O número médio de remoção de linfonodos foi similar, 13 e 12, respectivamente. O tempo médio de cirurgia foi significativamente mais longo no grupo de estudo, 210 versus 120 min. A perda de sangue foi menor no grupo de estudo: 300 mL versus 1200 mL. A recuperação pós-operatória foi mais curta após a cirurgia laparoscópica ($p < 0,05$): tempo de ativação - 2,2 vs. 3,9 dias; tempo até o primeiro peristaltismo - 1,8 vs. 4,5 dias; primeiro movimento intestinal - 3.4 vs. 4.8 dias; primeiro alimento consumido - 2.9 vs. 3.9 dias. Menor tempo de ingestão de analgésicos - 2,3 versus 4,4 dias, $p < 0,05$; menor tempo de hospitalização: 9,3 vs. 13,4 dias, $p = 0,05$. O tempo para iniciar a quimioterapia foi reduzido de 27,5 para 14,7 dias, $p < 0,05$. Complicações pós-operatórias menores no grupo de estudo: 6,8 vs. 17,8%, $p = 0,05$. A sobrevivência global de Kaplan–Meier aos 2 anos foi semelhante: 69,5% vs. 61,6%, $p = 0,96$.

Conclusão: A cirurgia citorredutora laparoscópica para CC metastático é segura, minimiza o trauma cirúrgico e acelera a recuperação do paciente.

Background

Colon cancer (CC) one of the most common oncological disease in the World. More than 30,000 new cases were registered and 12,000 have die annually in Russia, up to 30% patients have metastatic CC at first visiting to oncologist.[1]

In Russia treatment of metastatic CC is in focus of interests because there is a huge part of patients with an advanced disease. New treatment strategy and medical technology allowed expanding indications for surgery in patients with metastatic CC even with sever comorbidities. Recent studies showed the improvement of treatment results after cytoreductive surgery even in patients with multiple liver and lung metastases.[2–5]

Nowadays, introduction of innovation minimally invasive surgery, advantages in molecular technology and new scheme of chemotherapy allowed extending the indication for cytoreductive surgery for metastatic CC because it could help to optimize treatment strategy and achieve the improvement of quality of life and long-term results. The laparoscopic precision technique in cytoreductive surgery could achieve the minimal level of morbidity and mortality, shorter period of rehabilitation and time to adjuvant chemotherapy after surgery.[6,7]

Recently, the results of multiple multicenter randomized controlled trials (COST, Barcelona trial, CLASSIC, COLOR, COLOR-2), confirming that there is no differences in short-term and long-term results between the laparoscopic and open access surgery for patients with CC.[8–17]

In modern literature there is only single articles reflecting laparoscopic cytoreductive surgery for metastatic CC.

Materials and methods

We analysis 89 patients treatment results with CC (T1-4a,Nany, M1a-b). Inclusion criteria in study: colon carcinoma with curable synchronous distant metastases (except the patients with total peritoneal carcinomatosis); metastases no more than 2 organs, ECOG < 2. Exclusion criteria: ECOG > 2, brain and bone metastases, retroperitoneal lymph nodes invasion, metastases more than 2 organs, tumor or metastases destruction, acute bowel obstruction, multiple synchronous or metachronous metastases. All patients underwent simultaneous or staged cytoreductive surgery and adjuvant chemotherapy. The patients were divided into 2 groups: study group (44 patients) – underwent laparoscopic cytoreductive surgery; main group – cytoreductive surgery by open access (45 patients). The groups were similar by sex, age, tumor spread and localization and histological structure, comorbidities.

Tumor localization and spread of metastases one of the most important factor determining for surgery plane (Fig. 1).

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