Introduction

Laparoscopic colorectal and liver resections, separately distinguished, are accepted as feasible, safe and oncologically equivalent to open resections surgical methods for treatment for metastatic colorectal carcinoma. Simultaneous laparoscopic resections are highly specialized procedures, performed in few centres around the world. There is still no consensus, regarding the applicability of combined laparoscopic colon and liver resection.

Methods

Forty-six combined liver and colorectal resections were performed during the period from August 2012 to December 2017 at the Department of HPB and Transplant Surgery (n=18) in the Military Medical Academy, Sofia and Surgical Department (n=28) of Eurohospital, Plovdiv.

Twenty-nine patients were male (63%) and the mean age was 56.2 years. In five patients for liver transection “hybrid” technique was used and the rest of the patients underwent totally laparoscopic procedure. Patient and tumor characteristics, operative variables, and postoperative outcomes were evaluated prospectively.

Results

46 combined laparoscopic resections (5 hybrid)
- 15 major hepatectomies
- 2 segmentectomies (6 left lateral sectionectomies)
- 16 metastasectomies + wedge resections
- 3 metastasectomy + ligation of right portal vein
- Location of primary tumour – colon (n=34) and rectum (n=12).
- Twenty patients had solitary synchronous liver metastasis and 26 patients – multiple.
- Mean operative time was 225 min (170-415 min)
- Average blood loss – 120 ml in major hepatectomies
- 70 ml in minor resections
- Mean hospital stay was 6,8 days (6-14 days)
- Overall morbidity was 32,6%; No perioperative mortality
- Surgical complications were 17,4% (n=8), with 3 patients requiring operative revision (6,5%)
- During a median follow-up period of 27 months (7 to 46 months), five patients developed disease progression (3 patients with metachronous liver metastases, 2 – pulmonary meta);
- 2-year OS: 82%.

Primary tumor - distribution

Liver metastases localization

Technical details

- Single team performing both stages
  - Better time management
  - Coping with adverse situations during surgery
- Totally laparoscopic approach
  - Liver stage followed by colorectal stage
- “Hybrid” approach
  - Laparoscopic colectomy
  - Open liver resection

Conclusion

The simultaneous colorectal and liver resection of different volumes is feasible in patients with primary colorectal carcinoma and synchronous colorectal metastases while an optimal, individually adapted multimodal approach is followed, combined with sufficient experience and knowledge of the surgeon.