BILATERAL R1 VASCULAR SURGERY IN PATIENTS WITH MULTIPLE BILOBAR COLORECTAL LIVER METASTASES: CHALLENGING THE FORMALLY UNRESECTABLE DISEASE

Surgery remains the only curative option for colorectal liver metastases (CLM) providing long-term survival also in patients having multifocal and bilobar disease. For the latter multiple limited resections were initially offered given the R0 profile; then with the introduction of portal vein embolization (PVE) major hepatectomy and limited resections were combined in a single operation for more advanced involvement. In 2000 Adam et al introduced the staged procedure for further enhancing this approach, implemented soon after by combining the PVE in between the two stage. Adding the liver partitioning at the first stage, the drop-out of the conventional staged approach has been drastically reduced although significantly increasing morbidity and mortality. On the other hand, parenchyma preserving liver surgery has regained a role also for these patients, by introducing R1-like surgery.

To analyze our series of multiple bileobar CLM with bilateral main intrahepatic vascular contact to evaluate:

- Short term results (morbidity, mortality)
- Long term results (OS, DF)

July 2002 – January 2017
229 pts > 4 bilobar CLM
28 pts excluded: no zone P vs zone H
112 pts excluded: unilobar zone P Zone H
89 eligible patients

Patients characteristics n (%)  
• Male/Female n (%) 49/40 (55%/45%)
• Age mean (min-max) 61 (30-77)
• Synchronous (>12 months) n (%) 79 (88%)
• N lesions preop mean (min-max) 10 (3-38)
• Intrahepatic bilobar vascular contact: 89 (100%)
• Type of contacts - P-H n (%) 64(72%)
- H-H n (%) 31 (35%)
- P-P n (%) 2 (2%)
• N lesion in the left liver, median (min-max) 4 (1-17)
• N lesion in the right liver, median (min-max) 4 (1-17)
• Associated chemo-therapy n (%) 58 (65%)
• Preoperative systemic chemotherapy n (%) 52 (58%)
• Type of chemo - 5FU n (%) 7 (8%)
- Oxaplatin n (%) 34 (38%)
- Irinotecan n (%) 35 (40%)
- Irinotecan/Oxaplatin 12 (13%)
• Biological agents - Bevacizumab n (%) 37 (42%)
- Aflibercept 1 (1%)
- Vascular detachment+ reconstruction 7 (8%)
- Failure detachment from - zone P n (%) 15 (17%)
- zone H 28 (31%)
- Zone P+H 24 (27%)
- R1 vascular n (%) 5 (6%)
- Upper Transversal n (%) 5 (6%)
- BIS+LR n (%) 5 (6%)
- Monosegmentectomies + LR n (%) 1 (1%)
- Bissegmentectomies + LR n (%) 4 (5%)
- Colon n (%) 2 (2%)
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Inclusion criteria:
• Multiple bileobar CRLM ≥ 4 lesions
• Bilateral main intrahepatic vascular contact Zone P and Zone H

Chapter 2: Materials and methods

Type of intervention
- Biportal mesocolon + LR n (%) 11 (10%)
- Mesocolon/portal + LR n (%) 6 (5%)
- Multiple bileobar LR n (%) 46 (50%)
- Major Hepaticostomy = LR n (%) 10 (10%)
- Minor Hepaticostomy n (%) 1 (1%)
- Liver tunnel n (%) 11 (13%)
- SEPS + LR n (%) 5 (5%)
- Upper Transversal n (%) 1 (1%)

Intraoperative vascular management

Conclusions

One stage approach must always be taken into account as being a safe less invasive surgical approach even in this complex presentation.

The main pillars of this technique are:
- Pre-operative planning
- ICGS - staging
- Vascular contacts
- Vascular detachment from the lesions in main intrahepatic vessels

Results

One-stage ultrasonographically guided hepatectomy for multiple bileobar colorectal liver metastases: A feasible and effective alternative to the stage approach

Liver failure
- R1 vascular n (%) 15 (17%)
- Local recurrence n (%) 15 (17%)
- Overall recurrence n (%) 72 (81%)

Postoperative outcome

Total in hospital Stay (days), mean (min-max) 18 (6-46)
Overall postoperative morbidity n (%) 28 (31%)
Clavien-Dindo III-IV n (%) 22 (25%)
Clavien-Dindo III-IV n (%) 62 (71%)
Overall postoperative mortality n (%) 2 (2.3%)
Overall mortality n (%) 1 (1%)
Liver +extrahepatic recurrence n (%) 9 (10%)
Liver +extrahepatic recurrence n (%) 46 (56%)
Postoperative chemotherapy n (%) 46 (54%)
Overall postoperative morbidity n (%) 28 (31%)
Overall postoperative mortality n (%) 2 (2.3%)
Clavien-Dindo III-IV n (%) 62 (71%)
Overall mortality n (%) 1 (1%)
Overall recurrence n (%) 72 (81%)
Liver +extrahepatic recurrence n (%) 46 (56%)
Postoperative chemotherapy n (%) 46 (54%)

Conclusion: the indications for liver resection for met- hasteas from colorectal cancer are generally de- fasted. The technical feasibility of the treatment, and therefore the overall outcome of the experience of this surgery. Therefore, a specific scientific background and adequate training in he- patic surgery, including the ability to perform intraoperative ultrasound and portal vein embolization, are mandatory for performing safe and effective treatment.

In conclusion, the implications for liver resection for ma-