Portal or hepatic vein reconstruction at Stage I of ALPPS – How far can we push the boundaries?

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Methodology
We retrospectively review all ALPPS procedures performed at our centre between 2013 and 2017. Majority were complete transections combined with right PVL to prepare for an extended right hemihepatectomy. ALPPS procedures with venous reconstructions at stage I were identified and outcomes assessed.

Results
Twenty ALPPS procedures have been performed at our centre. In five patients with bilobar colorectal metastases the complete transection at stage I was combined with left or middle hepatic vein (4/5) or left portal vein (1/5) reconstruction. In two cases the liver underwent cold in situ flush during venous reconstruction under total vascular exclusion (ante-situ resection). Portal vein occlusion was delayed in two patients, to confirm patency of vascular reconstruction, by means of embolization at 9 and 39 days after stage I. The median time between the two ALPPS stages was 29 days (IQR:12-46d). R0 resection was achieved in all cases and patient survival was 80%. One patient died 33 days after stage II due to sepsis.

Conclusion
Reconstruction of portal or hepatic veins of the later FLR at Stage I appear safe in selected cases. Such complex ALPPS procedures appear as only remaining option to achieve R0 resection in very extended hepatic metastases.