

Portal Vein Aborisation after TIPSS Implantation

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Disclosure of conflict of interest

- Speaker name: Ulf Teichgräber, MD, MBA
- Potential conflicts of interest related to the presentation:
 - none
- Potential conflicts of interest not related to the presentation:
 - Consulting Fees, Honoraria, Research Grants, Advisory Boards: ab medica, Abbott Vascular, B.Braun Melsungen, Boston Scientific, Celonova, C.R. Bard, COOK, Endoscout, GE Healthcare, iVascular, Kimal, Maquet, Medtronic, Philips Healthcare, Siemens Healthineers, Spectranetics, W.L.Gore
 - Master research agreements with Siemens Healthineers, GE Healthcare

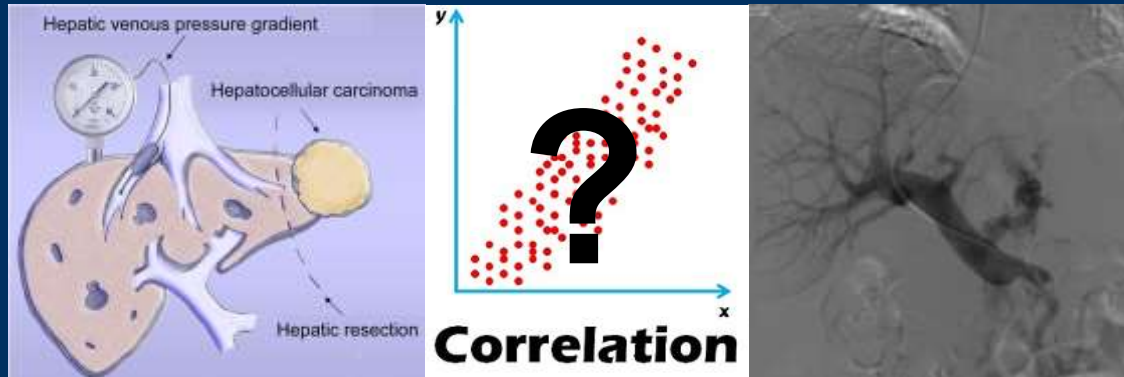
Introduction

- Oesophageal bleeding is one of the lethal consequences of pathological increased portal venous pressure
- TIPSS leads to a significant decrease of the mortality.
- A change in intrahepatic arborization of the portal vein branches can be observed in the direct portography after TIPSS implantation.



Objective

To evaluate the correlation between the decrease of hepatic portal venous pressure gradient (HPVG) and the intrahepatic portal venous arborization after TIPSS implantation.



Material and Methods

- 43 patients (27 ♂, 16 ♀; median age 62 ± 9.8 years)
- Direct portography and HPVG were determined before and after TIPSS implantation

Intrahepatic Arborization

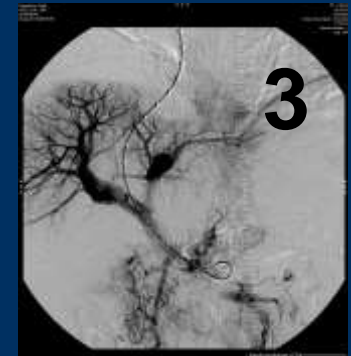
Based on the contrast agent filling of the intrahepatic branching of the portal vein, a classification for intrahepatic arborization (=vessel branching) was applied:

0: no visualization of portal venous branches

1: visualization only of the main branches

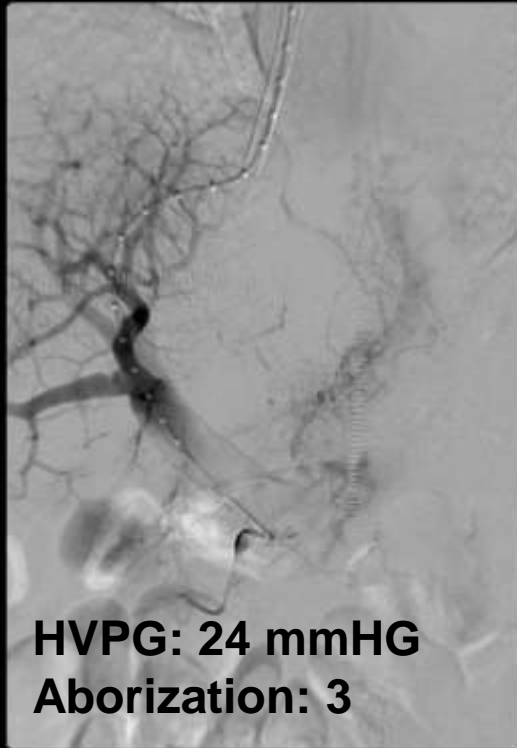
2: partly visualization of vascular tree

3: complete representation of vascular tree including peripheral branches

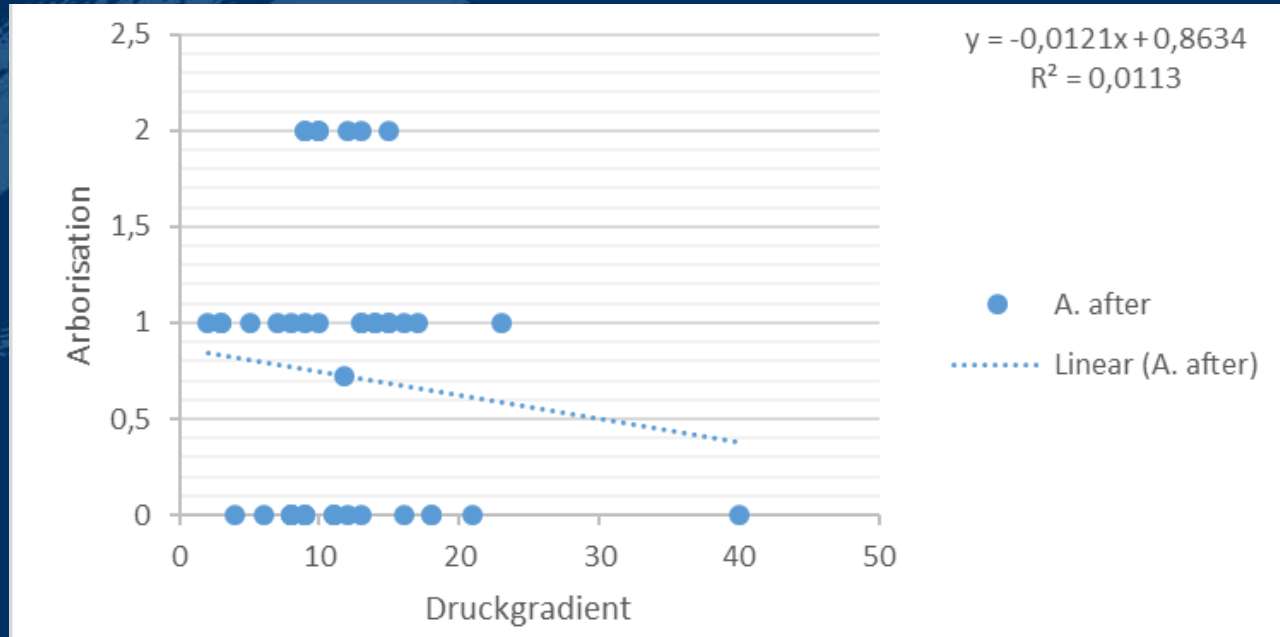


Portography

Decrease of HVPG and Aborization



Correlation post TIPSS Implantation



The interdependency between both parameters was proofed statistically by Pearson correlation coefficient.

Results

- HVPG before TIPSS implantation measured **22.5** ± 6.1 mmHg, after TIPSS **11.9** ± 6.4 mmHg
- According to our classification, the arborization of the mean value has dropped significantly from **2.6** to **0.72** after TIPSS
- Pearson's coefficient of correlation before TIPSS ($r = -0.45$), after TIPSS ($r = -0.106$), and between HVPG difference and decrease of vascular branching angle ($r = 0.038$)

There is no correlation between the 2 parameters

Results

- A correlation between the degree of arborization and the occurrence of hepatic encephalopathy was observed in 8 patients (7 patients with arborization 0)
- The risk of developing a TIPSS occlusion increases with an arborization of 2 after TIPSS implantation (in 5 patients a recanalization was necessary, there of 4 with arborization ≥ 2 after TIPSS implantation)

Conclusion

- There are many factors influencing the pressure gradient
- The degree of arborization represents a good prognostic factor for the risk of hepatic encephalopathy and risk for developing a TIPSS occlusion
- A reduction of the HVPG after TIPSS implantation itself has no direct influence on the postinterventional interhepatic arborization

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