Portal Vein Aborisation after TIPSS Implantation

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Disclosure of conflict of interest

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  o none

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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 aborization of the portal vein branches can be observed in the direct portography after TIPSS implantation.
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 tre

3: complete representation of vascular tree including peripheral branches
Decrease of HVPG and Aborization

HVPG: 24 mmHG  
Aborization: 3

HVPG: 10 mmHG  
Aborization: 0
The interdependency between both parameters was proofed statistically by Pearson correlation coefficient.
Results

• HVPG before TIPSS implantation measured $22.5 \pm 6.1$ mmHg, after TIPSS $11.9 \pm 6.4$ 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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