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1: Acad Radiol. 1999 Feb;6(2):89-93.

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## Identification of the portal vein: wedge hepatic venography with CO<sub>2</sub> or iodinated contrast medium.

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**RATIONALE AND OBJECTIVES:** The purpose of this study was to evaluate the utility of CO<sub>2</sub> versus iodinated contrast medium for wedge hepatic venography in identifying portal vein anatomy during transjugular intrahepatic portosystemic shunt (TIPS) procedures. **MATERIALS AND METHODS:** Wedge hepatic venograms obtained with CO<sub>2</sub> or iodinated contrast medium and direct portograms of 43 patients undergoing TIPS procedures were analyzed retrospectively. Wedge venography was performed in 23 patients with CO<sub>2</sub> and in 21 with iodinated contrast medium; direct portography was subsequently performed in 42 of 44 patients with iodinated contrast medium and in one with CO<sub>2</sub>. All cases were reviewed systematically to compare portal vein anatomy and completeness of anatomic identification between direct portography and wedge venography, and the results with CO<sub>2</sub> were compared to those with iodinated contrast material. **RESULTS:** On the basis of opacification of the main portal trunk, branches, or both, the portal vein appearance (definition of the portal bifurcation) was good to excellent in 21 of 23 patients imaged with CO<sub>2</sub> but in only two of 20 patients imaged with iodinated contrast medium. Wedge venograms agreed with direct portograms in 91% (21 of 23) of the CO<sub>2</sub> cases and in 10% (two of 20) of the iodinated contrast medium cases. The two patients with poor opacification using CO<sub>2</sub> had poor delineation of the main portal trunk, branches, and varices. TIPS could not be created in three patients. In two, abnormal morphology was identified at CO<sub>2</sub> venography; in the third, wedge venography was not performed. **CONCLUSION:** Wedge hepatic venography with CO<sub>2</sub> compared with iodinated contrast medium has a substantially higher likelihood of correctly and completely identifying the location and anatomy of the portal vein.

PMID: 12680430 [PubMed - indexed for MEDLINE]