

All Databases PubMed Nucleotide Protein Genome Structure OMIM PMC Journals Books

Search PubMed for [] Go Clear

Limits Preview/Index History Clipboard Details

Display AbstractPlus Show 20 Sort By Send to

All: 1 Review: 0

1: [Cardiovasc Intervent Radiol. 2006 Jul-Aug;29\(4\):642-5.](#)



A simple DSA method to detect air contamination during CO2 venous studies.

Cho KJ, Cho DR, Hawkins IF Jr.

Department of Radiology, University of Michigan Health System, Ann Arbor, MI 48109-0030, USA. kyungcho@umich.edu

The use of CO2 as a contrast agent has increased significantly for visualization of the central veins, inferior vena cava, and portal vein. The most serious complication associated with CO2 studies is air contamination. We evaluated a simple digital subtraction angiogram (DSA) method to detect air contamination during CO2 venous studies. After injections of 5, 10, and 20 cm3 of CO2 and 5 cm3 of air into the inferior vena cava of five domestic swine in the left lateral decubitus position, a DSA was performed using the cross-table lateral projection to visualize the gases trapped in the right atrium. The time to complete dissolution of CO2 at increased doses was compared to that of air. Vital signs were observed during and after CO2 or air injection. In all animals, DSA showed the trapped gas outlining the wall of the right atrium. Five cubic centimeters of CO2 was cleared from the right atrium in an average of 46 sec (21-60 sec), whereas 5 cm3 of air remained visible over 5 min. Ascending doses of CO2 increased the time of dissolution to 54 sec (47-67 sec) for 10 cm3 and 70 sec (45-90 sec) for 45 cm3. Vital signs remained stable during the study. Using DSA, CO2 can be distinguished from air by demonstrating rapid absorption of the former, thus allowing detection of air contamination during CO2 venous studies. If the gases trapped in the right atrium remain visible 90 sec after the injection, air contamination should be suspected.

PMID: 16604404 [PubMed - indexed for MEDLINE]

Related Links

- ▶ Potential air contamination during CO2 angiography using a hand-held syringe: theoretical considerations and gas chromatography [Cardiovasc Intervent Radiol. 2006]
- ▶ CO2 digital subtraction splenoportography with the "skinny" needle: experimental study in a swine model. [Cardiovasc Intervent Radiol. 2003]
- ▶ CO2 digital angiography: a safer contrast agent for renal vascular imaging [Am J Kidney Dis. 1994]
- ▶ Carbon dioxide in the aortic arch: coronary effects and implications [Cardiovasc Intervent Radiol. 2003]
- ▶ [Digital subtraction phlebography of the orbit. Technique and diagnosis] [Ophthalmol. 1989]

» See all Related Articles...

Display AbstractPlus Show 20 Sort By Send to

Write to the Help Desk

NCBI | NLM | NIH

Department of Health & Human Services

Privacy Statement | Freedom of Information Act | Disclaimer