

## Development of high-output heart failure after correction of central venous occlusion

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Central venous catheter (CVC) insertion has been performed frequently for hemodialysis (HD) in HD patients. One of the most important long-term complications of CVC is the central venous occlusion (CVO). HD patients with arteriovenous fistula (AVF) and without a previous history of a central venous catheterization may also develop CVO. Case: A 69-year-old female patient was admitted to our hospital with complaint of swelling, pain, and severe venous collateral on her left arm and hemithorax. Her past medical history revealed the diagnosis of diabetes mellitus and hypertension for 20 years. Seven years earlier, she experienced unclassified acute renal failure and received HD treatment initially via left internal jugular CVC for 28 days and then via AVF created on left radial snuff box for 3 months. After this period, as her renal functions recovered, HD treatment was no longer needed. After initial evaluation, fistulography was performed and left brachiocephalic vein occlusion was detected. During fistulography, PTA and stent implantation was performed successfully. Two hours after the procedure, the patient experienced acute respiratory distress. Her physical examination revealed bilateral jugular venous distention, bilateral crackles at the lower fields of the lung, and tachycardia. Chest X-ray revealed pulmonary edema. In conclusion, it should be kept in the mind that treatment of CVO with serious venous congestion may result in the development of acute high-output heart failure (HOHF). Before the revascularization procedure, cardiac functions and factors associated with the development of acute HOHF should be evaluated carefully in patients with CVO. Furthermore, reporting of the post-procedural acute complications will improve the awareness and preventive measures.

## Is the MRI contrast medium gadopentetate dimeglumine an oxidant molecule?

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**Background:** Iodinated radiocontrast agents (IRA)-induced nephropathy (CIN) and related risk factors have been well documented. Oxidative stress (OS) is one of the most important pathways in the pathogenesis of CIN. It has been documented that IRA also may increase OS without nephropathy. Gadolinium chelates (GC) using in magnetic resonance imaging (MRI) have been considered as non-nephrotoxic contrast materials. But, in some recent articles it has been suggested that GC may have a nephrotoxic potential.

**Aim:** to investigate the effect of static magnetic fields and gadopentetate dimeglumine (GD) on oxidant/antioxidant status via measurement of total antioxidant capacity (TAC), total oxidant status (TOS), and MDA.

**Patients and Method:** Age and sex-matched two groups of patients who undergone MRI was included the study. While contrast-enhanced (gadolinium dimeglumin, 0.2 mmol/kg) MRI was performed in group 1 (n=40), MRI without contrast material was performed in group 2 (n=40). Fasting blood glucose, C-reactive protein, serum creatinine, liver enzymes, uric acid, and lipid parameters were studied. Peripheral venous blood samples for determining TAC, TOS and MDA were collected before and 6, 24 and 72 h after MRI procedures. The TOS:TAC ratio was used as the oxidative stress index (OSI). Patients were followed up 72 hours. Fixed dose of GD (0.2 mmol/kg) were administered to all group 1 subjects.

**Results:** There were no significant changes in serum TAC, TOS, and MDA levels ( $\Delta$ serum TAC,  $\Delta$ serum TOS, and  $\Delta$ MDA) in both groups after 6, 24 or 72 hours of the procedures ( $p>0.05$ ). Furthermore, OSI was not changed after the procedures in both groups ( $p>0.05$ ).

**Conclusion:** Magnetic field and DG does not aggravate oxidative stress at a dose of 0.2 mmol/kg.