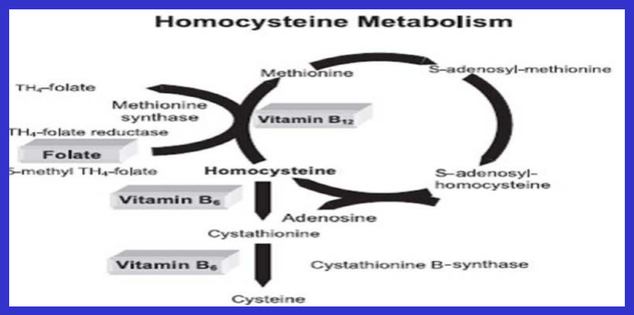
Anesthetic management of a patient with Cancer and Hyperhomocysteinemia

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Case: A 57 year-old female with a history of uterine and breast cancer s/p chemoradiation presented for cervical LEEP/cone biopsy/D&C. Her medical history was complicated by elevated LFTs with recent hyperhomocysteinemia (> 50micromol/l, normal 4-15). She was seen by a hematologist prior to surgery, and it was concluded that elevated homocysteine levels were due to cancer therapy and alcohol consumption. The procedure was performed under monitored sedation, with 2mg of Midazolam, 50mcg of Fentanyl, and a bolus of 70mg of Propofol followed by a steady infusion of 150mcg/kg/min.

Discussion: Causes of hyperhomocysteinemia include genetic predisposition, acquired deficiencies (folate, B6, B12), malignancies, and renal disease. Elevated homocysteine levels result in thromboembolic complications by causing endothelial dysfunction, increasing procoagulant activity, and decreasing antithrombotic effect.

Challenges of patients with hyperhomocysteinemia undergoing anesthesia are related mainly to the procoagulant state and efforts should be focused on thromboprophylaxis and maintenance of hemodynamics and euvolemia. Nitrous oxide should be avoided as it inhibits methionine synthase and can further increase homocysteine levels. Patients with co-morbidities that include coronary artery disease, peripheral vascular disease, and cerebrovascular disease are at increased risk for peri-operative thrombotic events. This risk is amplified for high-risk procedures under general anesthesia.



Conclusion: In this case, the patient presented for a low-risk procedure. She did not have a history of coronary or cerebrovascular disease, but had risk factors (surgery, age>50yrs, malignancy, cancer therapy) in addition to a hypercoagulable state (due to elevated homocysteine levels) that posed increased peri-operative risk for thrombotic events such as deep venous thrombosis and pulmonary embolus. The decision was made to proceed with monitored sedation over general anesthesia so as to avoid fluctuations in hemodynamics and decrease the risk of venous stasis. The procedure took approximately 45 minutes and the patient recovered uneventfully and was discharged home the same day.

References:
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