

## Methylenetetrahydrofolate Reductase Deficiency: Rare but Considerable

Metilentetrahidrofolat Redüktaz Eksikliği Nadir Fakat Önemli

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Dear Editor,

We read with interest the article by Orhon et al. (1) entitled *Methylenetetrahydrofolate reductase (MTHFR) deficiency: The hidden risk in paediatric anaesthesia*. Recently, we encountered two cases of MTHFR deficiencies with unusual presentations: one for elective and the other for urgent surgery.

Case 1 was that of a 38-year-old man who was previously diagnosed with MTHFR deficiency and was scheduled to undergo coronary artery bypass surgery. His homocysteine (Hcy) level was  $12.6 \mu\text{mol L}^{-1}$  (normal range:  $0-15 \mu\text{mol L}^{-1}$ ). After a smooth cardiopulmonary bypass course and perioperative period, the patient was transferred to the intensive care unit. On the third postoperative day, he complained of weakness on the left foot despite the initiation of acetylsalicylic acid (ASA) and heparin therapy. Diffusion magnetic resonance revealed subacute infarct on the medial cerebral arterial area. Thus, additional clopidogrel therapy was initiated. Extremity weakness resolved next week, and he was discharged uneventfully.

Case 2 was that of a 13-year-old boy with acute lens dislocation. Ophthalmologists required urgent surgery He was diagnosed with MTHFR deficiency during early babyhood, and his Hcy level two months prior was  $181 \mu\text{mol L}^{-1}$ . His pediatrician administered high doses of ASA ( $15 \text{ mg kg}^{-1}$ ). After an uneventful perioperative period, he was discharged from the hospital on the third postoperative day.

MTHFR deficiency may present during middle age with premature atherosclerosis resulting in heart attack or stroke, similar to that seen in Case 1 (2). According to our literature research anesthesia management of the disorder is rarely reported among adults compared to pediatric cases To our knowledge, this is the first cardiac surgical case report in the literature. We found three adult case reports: one for elective colon surgery, the second for cesarean section, and the last one for urgent toe amputation (3-5). All three cases experienced occlusive events prior to surgery that led to the diagnosis of MTHFR deficiency. Perioperative course was free of cardiac complications for the first two cases, whereas the last

case had transient myocardial ischemia and resolved without any sequela. Peripheral vaso-occlusive complication occurred during early postoperative follow-up in Case 1 despite anticoagulation with ASA and normal Hcy levels.

Hcy must be reduced to the lowest possible level before elective surgery, but the limits of "safe" level have not been defined based on evidence. Orhon et al. (1) reported the normal values of Hcy in the series as all cases underwent elective procedures. Moreover, they emphasized that the upper limit of  $15 \mu\text{mol L}^{-1}$  may be too high. Meanwhile, decreased levels were not always found to be associated with fewer heart attacks, strokes, or venous embolisms (2). We had to proceed with lens dislocation as high Hcy levels 2 months prior and unilateral vision loss were inevitable without surgery.

MTHFR deficiency is a rare disease with considerable consequences in anesthesia management. Its actual prevalence in Turkey remains unknown. Early and severe atherosclerosis may require further investigations and may be signs of MTHFR deficiency. Preoperative Hcy level should be lowered in elective cases. It should be kept in mind that the normal values do not always prevent occlusive complications.

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Dear Editor,

**W**e thank you for your interest in our article. We would also like to state that we are very happy to draw attention to this important issue again

by sharing the two cases you have encountered. We believe that the sharing of experiences will increase awareness in this regard, and that necessary precautions should be taken to prevent the development of complications. The complications that develop should be recognized so that early and permanent damage can be prevented. Thank you again for your kindness. We wish you healthy days.

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