Medical Image of the Week: Blue-Green Urine and the Serotonin Syndrome

Figure 1. Panel A: blue-green urine a few hours after parathyroid surgery. Panel B: normal urine color 72 hours post-surgery.

A 56-year-old woman was electively admitted for parathyroidectomy for primary hyperparathyroidism with osteoporosis. Five hours post operatively, she developed acute change in mental status. The neurological exam showed inducible clonus, agitation, diaphoresis, ocular clonus, rigidity and hyperreflexia. The patient met Hunter criteria for the diagnosis of serotonin syndrome by being on citalopram and tramadol with the neurological exam findings (1). The patient had been on the same doses of these medications for years with no recent change in kidney or liver functions. The blue-green urine color was strikingly strange. Reviewing the operation room event records showed that she received a high dose of methylene blue to help identify the parathyroid glands.

Serotonin syndrome has been reported with concomitant administration of methylene blue and serotonin reuptake inhibitors (e.g., SSRIs, SNRIs, tricyclic antidepressants). It is recommended to avoid concomitant use and allow a washout period of at least 4-5 half-lives of the serotonin reuptake inhibitor prior to intravenous methylene blue use (2). Within 72 hours of holding tramadol and citalopram the patient recovered completely.

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References

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2. Ng BK, Cameron AJ. The role of methylene blue in serotonin syndrome: a systematic review. *Psychosomatics*. 2010 May-Jun;51(3):194-200. [\[CrossRef\]](#) [\[PubMed\]](#)