



A Case of Methotrexate Intoxication Presenting with Stroke-like Episodes



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Introduction: Patients with childhood cancers may suffer from neurological complications owing to the primary disease and treatments. Methotrexate (MTX) induced central nervous system toxicity may result from both intrathecal and intravenous administrations, and has specific radiologic findings.

Methods: We report a 14-year-old adolescent girl with osteoblastic osteosarcoma and recurring neurological symptoms.

Results: The patient was diagnosed with osteoblastic osteosarcoma in the left leg at 14 years of age. Her current chemotherapy regimen included MTX. She received trombocyte infusion for trombocytopenia the day before admission. After discharge from the hospital her brother had realized that she made mistakes while playing computer games which was unusual. Two hours later, when she woke up she had speech impairment and right arm paresis. Brain magnetic resonance imaging (MRI) obtained during speech impairment showed bilaterally restricted diffusion in the centrum semiovale compatible with MTX toxicity (fig.1). Levetiracetam was administered. By the time she was admitted to our hospital, her symptoms had resolved without intervention in one day. Neurological examination showed bilateral brisk deep tendon reflexes and left leg weakness due to prior surgery. Repeat MRI at our institution was normal (fig.2). She then developed motor aphasia and right arm paresis which spread to the right leg, sparing awareness. Cranial computed tomography to exclude hemorrhage due to trombocytopenia was normal. Brain MRI findings showed restricted diffusion in the centrum semiovale (fig.3). Folinic acid and methyl prednisolone was administered with complete resolution of neurologic symptoms and signs. Also, MTX was eliminated from chemotherapy regimen.

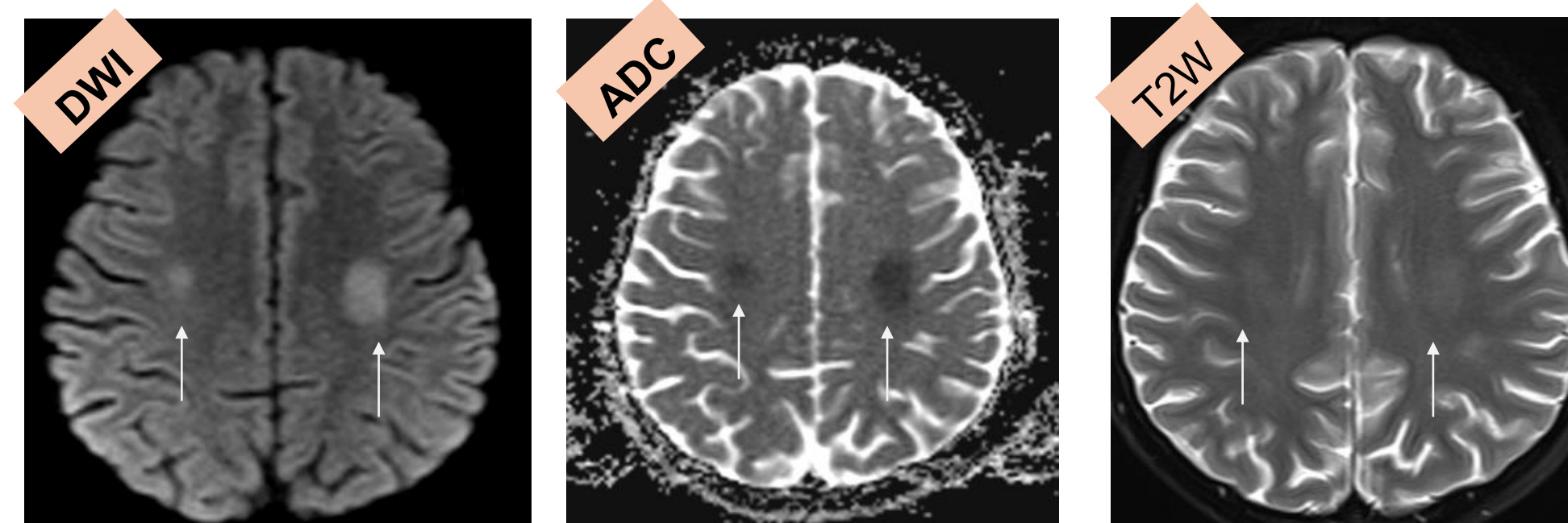


Fig 1. Initial MRI

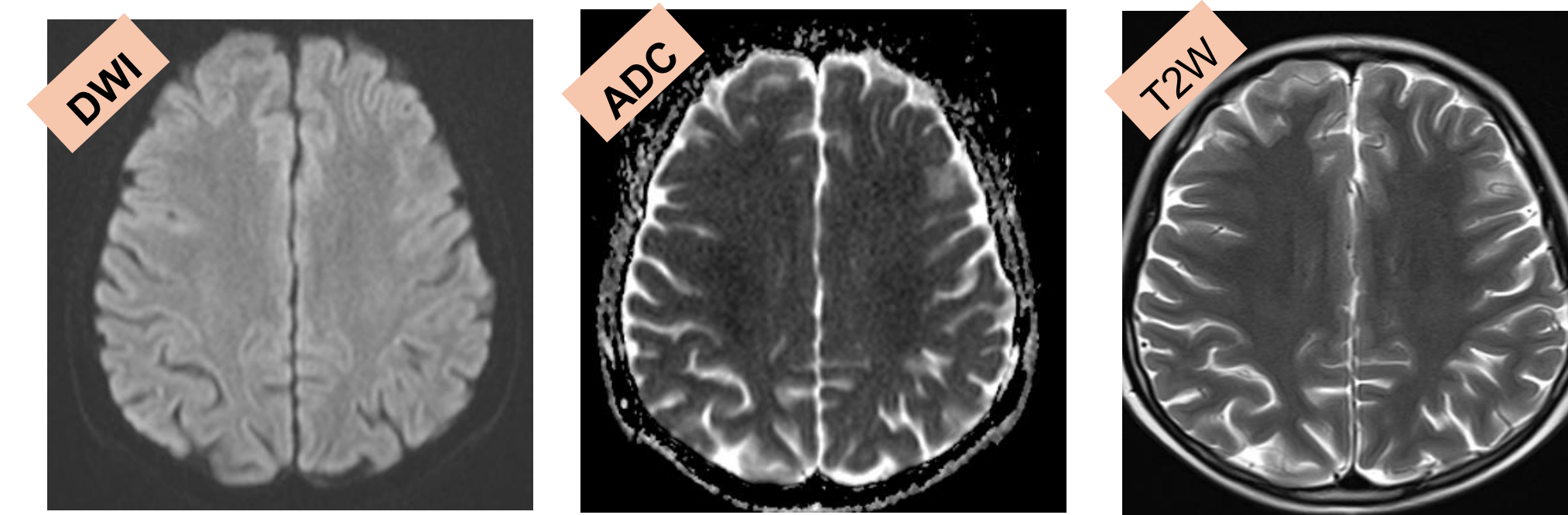


Fig 2. 18 hours later

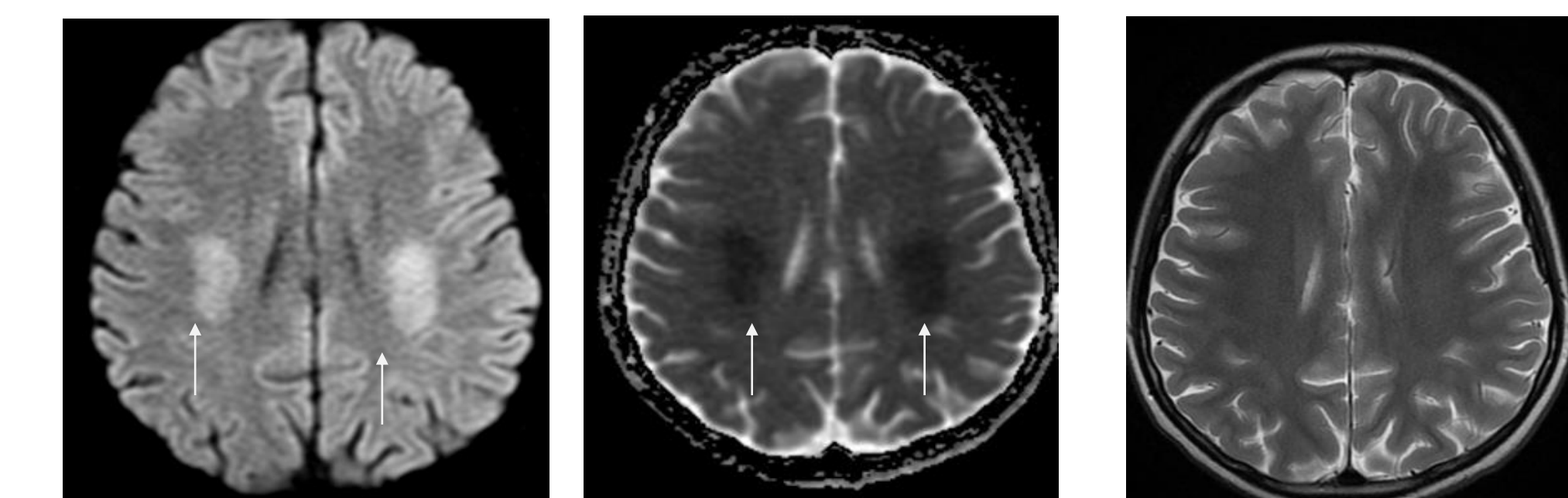


Fig 3. 27 hours later

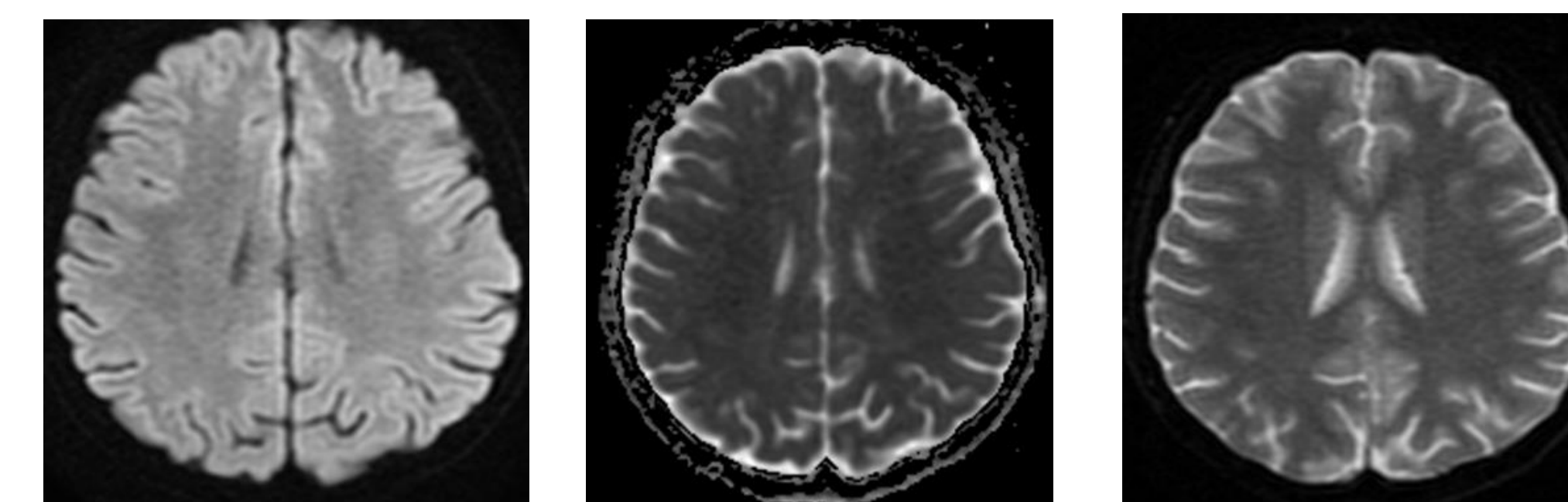


Fig 4. 78 hours later

Conclusion: Patients receiving MTX may present with stroke-like episodes, and prompt diagnosis may enable specific treatment based on certain etiology. Assessment of children with neurological problems should include a thorough evaluation of systemic problems.

Conflict of interests: None.

Key words: stroke-like episode, methotrexate toxicity, osteoblastic osteosarcoma

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