

Management of a case of accidental intrathecal administration of meglumine diatrizoate

Sir,

Contrast media and the havoc it can cause to the patient and challenges it can pose to the anaesthesiologist in the form of anaphylactic reactions and nephrotoxicity have been well documented in the literature. However, the early recognition of the neurotoxic effect of an accidentally injected contrast media and its potentially life-saving benefits can be challenging to the anaesthesiologist. We would like to present one such case where the early recognition of the accidental injection of the contrast media and prompt action saved the patient from the potentially life-threatening sequelae that might have otherwise ensued.

A 50-year-old diabetic and hypertensive lady on beta blockers and oral hypoglycemics, with a history of carcinoma breast including multiple metastasis, was admitted with pathological fracture of the first lumbar vertebra and posted for spinal osteotomy and internal fixation. The patient was taken up for surgery under American Society of Anaesthesiologist Grade II.

The patient was received in the theatre after adequate premedication. General anaesthesia was administered as per the standard protocol. Induction maintenance and recovery from anaesthesia were uneventful and the patient was extubated on table after proper suctioning and reversal of neuromuscular blockade. The patient was thereafter shifted to the surgical intensive unit for overnight observation. Thirty minutes after shifting to the surgical intensive care unit, the patient developed rigid, jerky, intermittent involuntary movements of both lower limbs, for which intravenous Injection Midazolam 2 mg was tried. On referring to the operative notes, it was found that, intraoperatively, a contrast medium (Meglumine Diatrizoate 75%) was injected by the operating surgeon in the perioperative region to ensure that there was no thecal sac compression before surgical closure.

By now, the involuntary movements had progressed to the level of the hips, and were greater in intensity and frequency. It was immediately decided in consultation

with the operating surgeon that the patient be immediately intubated and ventilated under sedation and neuromuscular blockade to avoid the possible fatal complications.

Once the patient was paralyzed and was put on mechanical ventilation, cerebrospinal fluid drainage was done and 60 mL of fluid was drained through the intrathecal space. Further, an indwelling epidural catheter was introduced into the subarachnoid space to facilitate continuous cerebrospinal fluid drainage. The fluid so drained was collected in series in six different 10-mL syringes and labeled sequentially from 1 to 6 over time. These syringes were X-rayed for the amount of radioopacity, and it was seen that the opacity decreased from the syringe labeled 1 to the syringe labeled 6. Mechanical ventilation was continued for the next 48 h. The patient was extubated after 2 days. She was observed for another 24 h in the surgical intensive care unit and was shifted to her room on the third post-operative day.

It is well known that accidental intrathecal injection of ionic contrast media can cause fatal neurotoxicity.^[1] The possible complications that can arise include seizures, rhabdomyolysis, myoglobinuria, renal failure and death as a result of these complications.

However, timely recognition of the error in injection, prompt paralysis and mechanical ventilation along with support measures such as a lumbar drain can go a long way in saving the life of the patient.^[2] Similar errors have been reported in the literature, and most patients have died as a result of the neurotoxic effects of ionic contrast media.^[2-5]

The main non-traumatic underlying mechanism eventually leading to rhabdomyolysis and renal failure is seizure activity, which, in this case, resulted from the accidental intrathecal injection of Meglumine Diatrizoate.^[6] This further leads to increased muscular activity, rhabdomyolysis and renal failure. Prompt endotracheal intubation and muscle paralysis with elective ventilation helps break the chain of events leading to lethal complications right at the beginning. We also propose that the placement of a lumbar drain under these circumstances to dilute the amount of drug in the cerebrospinal fluid could play a useful role in therapy. In order to avoid such complications, it is suggested that the employees must be prepared to deal with the deleterious effects of an error. Prompt recognition of a mistake and timely treatment may prevent a fatal outcome.^[2]

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