Radial nerve injury following lengthy general anesthesia procedure

Sir,
Peripheral nerve injury is a rare and serious perioperative complication and a significant source of professional litigation.[1]

A 40-year-old male was scheduled for Whipple procedure. He was a smoker and had a history of chronic alcohol abuse.

At the beginning of the procedure, cefazolin 1 g and 500 mg metronidazole were administered and repeated 4 h later. After 6-h long uneventful surgery, the patient transferred to the Intensive Care Unit.

At 4th h of postoperative care, he claimed to have numbness in the right thumb area and right wrist drop [Figure 1]. Neurological examination revealed hypoesthesia around the right thumb, the right biceps and triceps reflexes were normal, extensor muscle power below the right elbow was 0/5, thumb abduction was 0/5, finger extension was 0/5, finger adduction was 4/5, and wrist extension and hand abduction were 0/5, and elbow extension was 5/5. The head computed tomography was normal. Radial nerve injury was diagnosed and treated with oral nonsteroidal anti-inflammatory drug and B complex vitamins. Electromyography and nerve conduction studies performed on the 21st postoperative day.
To prevent nerve injury and medicolegal cases, patients should be positioned appropriately and monitored closely to avoid mechanical trauma, and the neural structure of the region should be remembered to minimize trauma during anesthesia.

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There are no conflicts of interest.

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Numerous factors may coincide with perioperative nerve injury, including positioning, prolonged hypotension, hyperthermia, hypoxia, hypovolemia, electrolyte disturbances, prolonged application of a tourniquet, type of surgery, coexisting medical illness (diabetes mellitus, vitamin deficiency, and alcoholism), and extremes of body habitus. The most common cause of radial nerve injury is compression of the nerve between edge of operating table and humerus, which may occur when the patient is in the lateral position or with the arm abducted beyond 90°. In the present case, the patient was in the supine position and arms abducted below 90°. The injury was not at the brachial plexus level, which shows that it is not caused by positioning and the fact that it is in the spiral groove region indicates a possible pressure on that area.

However, there was a suspect: assistant surgeon, our belief is he might apply compression to patient’s arm with his body. Compression to nerve results in ischemia of the vasa nervorum and leads to neuropathy. In this case, history of smoking and use of alcohol are the two main factors to create susceptibility to nerve injury. There was although potential neurotoxic agent usage in this case: metronidazole. In some case reports, the cumulative dose of metronidazole was low and the latency to symptom onset was very short. In this case, even used total metronidazole was low, it might cause susceptibility to injury. Vigilance regarding potential risks of imidazole antibiotic’s neurotoxicity may help caregiver for patient’s management in the operating theater.

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