

Anaphylaxis during intraoperative indocyanine green angiography: A complication to watch out

Sir,

I read with interest the case report submitted by Singh *et al.*^[1] A similar incidence was encountered by us also during craniotomy and clipping of anterior communicating artery aneurysm.

A 62-year-old female patient presented to us with a history of aneurysmal subarachnoid haemorrhage and scheduled to undergo craniotomy and clipping of the aneurysm. She was a known hypertensive of 5 years duration on regular treatment. Intraoperatively, she received two injections of indocyanine green (ICG) 10 mg each, one before clip application and another following the permanent clip application in view of the difficult vascular anatomy. Following the first injection of ICG, she developed transient hypotension (mean arterial pressure [MAP] 90–70 mmHg, associated with increase in heart rate [HR] from 86 to 120 bpm) which responded to conventional management including fluid bolus and injection ephedrine bolus of 6 mg. Following the second injection, the patient developed profound hypotension with MAP 90–35 mmHg and HR increased with tachycardia from 82 bpm to 140 bpm. There was no associated increase in airway pressure, but there was associated brain swelling. There was no excessive bleeding or additional drugs administered at that time. The response to fluid bolus and injection ephedrine was blunted despite the vasopressor being repeated for two doses. A possibility of anaphylaxis to ICG was suspected, and accordingly, injection hydrocortisone 100 mg, injection pheniramine maleate and injection ranitidine were administered. The patient was also started on an infusion of noradrenaline to support the blood pressure. The patient gradually responded over the next 10–15 min and infusion of noradrenaline was also terminated. At the end of surgery, as the patient was

fully awake and responding to commands normally, the patient was extubated and shifted to the Intensive Care Unit for further management. Her subsequent course in the hospital was uneventful and made unremarkable recovery; she was discharged home on the 7th post-operative day with no neurological deficits. On follow-up at 6 months, she had full neurological function.

Another common finding during ICG usage is the falsely low pulse oximetry recordings, following ICG injection which is associated with a parallel increase in cerebral oxygen tissue saturation.^[2] Although this divergent change in saturation readings is transient, the clinical relevance is not yet understood.

ICG is being used extensively in ophthalmology. Usage of ICG in intracranial neurosurgery involving cerebral vasculature has been increasing. ICG helps in better delineation of vascular anatomy intraoperatively and aids in rapid diagnosis of alteration in vascular anatomy and compromise in blood flow to vital structures and thus, limiting devastating permanent neurological deficits. However, this contrast agent can produce various minor or major reactions, and vigilant monitoring during administration is essential for early diagnosis and management without causing permanent deficits.

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Conflicts of interest

There are no conflicts of interest.

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