

Malignant Hyperthermia in Dental and Facial Plastic surgeries

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Preoperative evaluation of the patients scheduled for ambulatory surgery is of great importance in regards of both surgery and anesthesia considerations. Malignant Hyperthermia (MH) is a pharmacogenetic clinical syndrome which mostly arises from volatile anesthesia with halothane and the depolarizing muscle relaxant succinylcholine. Clinical manifestations of MH are acidosis and rhabdomyolysis which occur following uncontrolled increases in skeletal muscle metabolism and rapidly increasing body temperature (by as much as 1°C/5 min) (1). Primary cases of MH were reported to be of a 70% mortality rate; however, thanks to the emergence of diagnostic tools such as end-expired carbon dioxide and the administration of dantrolene, this rate has decreased to less than 5%.

MH might occur even in those with no previous or familial history. Even a safe history of the previous surgery under the administration of MH triggering agents cannot guarantee a next safe surgery. A noteworthy point in the preoperative evaluation is the

probable association of MH with certain musculoskeletal disorders including Duchenne, Becker, and myotonic muscular dystrophies, strabismus, osteogenesis imperfecta, ptosis, myelomeningocele, kyphoscoliosis, King-Denborough syndrome, periodic paralysis, hernias, marfanoid syndrome, and central core disease (1). These diseases are frequently encountered by dental and facial plastic surgeons and having the knowledge of the probable association between MH and these conditions could aware the dental and facial plastic surgeons and the anesthesiologists to be more vigilant.

Although MH workup leads to the definite diagnosis, no convincing intraoperative diagnostic tool has been introduced so far. Masseter spasm is a condition which might follow administration of depolarizing neuromuscular blocking agents due to the slow tonic fibers of masseter and lateral pterygoid muscles (2-4). The severer forms of masseter spasm would result in masseter tetany or “jaws of steel” preventing any mouth opening. In cases with exclusively jaws of steel or those

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with Masseter spasm in combination with the rigidity of other body muscles, the occurrence of MH is almost definite and the surgical procedure should be terminated. Nevertheless, if either the jaw is only slightly resistant to opening or the rigidity of other muscles does not accompany the Masseter spasm, anesthesia might continue with non-triggering agents under proper monitoring including end-tidal CO₂, pigmenturia evaluation, and arterial or venous blood sampling for creatine kinase,

acid-base status, and electrolyte levels, mainly potassium.

Considering the fact that anesthesiologists do not have access to the head and neck of the patients throughout dental and facial plastic surgeries, the vigilance and awareness of the surgeons in detecting masseter spasms in patients would immensely help with the early diagnosis of MH and save the lives of susceptible patients.

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