Palatal 'Beading/Sweating' as a marker of anaesthetic depth

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Abstract

Monitoring of anaesthetic depth has come a long way from observation of clinical signs. We report here, a useful clinical indicator of anaesthetic depth that has not been reported on before. A clinical sign, that as ENT surgeons we are often in a unique position to observe. We outline our supportive theory and respectfully highlight this to our colleagues.

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Assessment of the depth of anaesthesia is something that every surgeon learns to appreciate over the course of training. This assessment can be aided by the use of clinical signs which represent a response of the autonomic nervous system to shallow anaesthesia. Scores that have been developed to measure this include the PRST (pressure, rate, sweating and tears score), along with more objective measures such as the use of entropy/bispectral index monitoring[1]. We suggest an additional feature of the PRST score which has not been previously mentioned or documented in the ENT literature.

We have noted an interesting phenomenon during tonsillectomy which appears to relate to depth of anaesthesia. During the emergence phase of the procedure, palatal beading/sweating is noticed over the distribution of the hard and soft palate. We describe the appearance as 'sweating' deliberately as the phenomenon has the appearance of small beads of sweat which are separate from one another. This has also been noted during the procedure if patients begin to 'lighten', which we have identified as a harbinger to coughing, movement or other overt signs of anaesthetic emergence.

Evidence to support this theory was shown by Sasaki et al in 2016, in their study of sedated patients undergoing dental procedures. They correlated movements of the arms and legs with depth of anaesthesia and increased salivation[2]. Another study examined the use of remifentanil/propofol or sevofluorane on salivation in microlaryngoscopy and found that the group assigned to remifentanil/propofol had greater salivation[3]. Patients sedated in ICU also seem to demonstrate reduced salivary flow but the authors of that study did not investigate the impact of anaesthetic agents on salivary flow[4].

There are 500-1,000 minor salivary glands throughout the oral cavity. While major salivary glands such as the parotid are responsible for secreting serous saliva, the minor salivary glands produce a mucoid saliva. Stimulation is through sympathetic and parasympathetic innervation, however parasympathetic input is stronger and has a longer duration. It is also thought that while parasympathetic input produces high volume salivary secretions, sympathetic tone may increase contraction of myoepithelial cells and extrusion of saliva.

We hypothesise that as sympathetic suppression of anaesthetic agents wear off, we are observing salivary secretion in keeping with a shallower depth of anaesthesia. We believe that this is another useful clinical indicator of anaesthetic depth and we respectfully highlight this to our colleagues.

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