

Nervous about Noses?

There is a distinctly 'neurological' theme to this issue which covers amongst other things, the physiological, pathological and therapeutic aspects of smell, the sensation of airflow and anaesthesia for pain relief. Olfaction has hitherto been a relatively neglected area of rhinology, probably due to the relative paucity of investigative tools⁽¹⁾ and our poor ability to influence it therapeutically. Considerable care is required to perform olfactory tests reliably, avoiding adaptation and the additional issues of cross-contamination are explored by Gaskin et al.⁽²⁾.

Considerable interest has focussed amongst neurologists on olfaction as an early marker of neurodegenerative conditions such as Alzheimer's and Parkinson's disease^(3,4). It is perhaps not surprising to discover that there is distortion of olfaction in anorexia nervosa, specifically related to food-related odours when subjects were hungry which might have some therapeutic implications in the future⁽⁵⁾.

The complexity of neurogenic inflammation in the upper airway is reviewed by Lacroix and Landis⁽⁶⁾ who discuss the relationship of the sensory, neuroendocrine and autonomic nervous systems and how airborne chemical stimuli can trigger inflammation. Not only does the olfactory system respond but also that of the trigeminal is particularly interesting, subserving as it does sensations such as burning, itching, pain and temperature change. Levels of sensory neuropeptides are increased in the presence of respiratory tract inflammation and correlate with intensity of symptoms⁽⁷⁾. The interaction between the olfactory and trigeminal systems themselves is also notable as severe olfactory loss is accompanied by decreased trigeminal sensitivity^(8,9).

Nasal obstruction and a poor sense of smell are the primary symptoms of nasal polyposis⁽¹⁰⁾ and whilst surgery can be anticipated to improve blockage both in the short and long-term^(11,12), the poor long-term effects of surgery on olfaction are well known. However, in the shorter term, patients may derive improvement and the kinetics of olfaction under these circumstances is considered by Federspil et al.⁽¹³⁾. Interestingly, it seems that the initial reduction immediately after surgery observed in this study would not be improved by more aggressive post-operative cleaning⁽¹⁴⁾.

We have only scratched the surface of these complicated neurogenic interactions but we also know that loss of smell has a profound effect on our patients. Complete loss of smell dramatically impacts on quality of life even in those patients who have survived major oncologic surgery such as a craniofacial resection for sinonasal malignancy⁽¹⁵⁾. There is still much to do in this complex area.

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