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Letters

More extensive analysis is needed when assessing facial structure in SIDS

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EDITOR—In their short report on facial structure in infants who died of the sudden infant death syndrome Rees et al evaluated the role of retroposition of maxillae and mandibles in predisposing to narrowing and occlusion of the upper airway in the sudden infant death syndrome.¹

Their hypothesis assumes that maxillary, mandibular, or bimaxillary retroposition reduces the nasopharyngeal airway. This may seem logical, but a range of congenital syndromes exhibit maxillary hypoplasia, such as Binder's syndrome (maxillonasal dysplasia), in which a reduced nasopharyngeal airway has been measured; patients with Binder's syndrome are not prone to obstructive apnoeas.² In adult obstructive sleep apnoea the patency of the nasopharyngeal airway is partly determined by environmental factors such as obesity, allergy, and infections and the distribution of submucosal fat in addition to facial form.

The authors' previous cephalometric work was based on four adults with obstructive sleep apnoea whose families had a history of the sudden infant death syndrome. This work suggests a common pathophysiology for obstructive sleep apnoea and sudden infant death syndrome through a familial tendency towards maxillary retroposition. As neonates are obligate nasal breathers, however, fundamental differences exist between the sudden infant death syndrome and obstructive sleep apnoea. Investigation of the effect of facial form by use of recognised bony and soft tissue lateral cephalometric landmarks would be valuable in the evaluation of nasopharyngeal airway patency.

Methodological errors may result from the use of lateral cephalography at necropsy; these include difficulty in ensuring a consistent mandibular position and the subsequent unreliability of the recording of cephalometric landmarks, resulting in systematic and random methodological errors.³ In the assessment of facial form, modern geometric morphometrics is more rigorous and takes into account both shape and size difference.⁴

Maxillary and mandibular retroposition may depend on deficient orthocephalisation of the cranial base.⁵ The sella-nasion-subspinale and sella-nasion-supramentale angles are highly correlated, so that the finding of a reduction in one means that there is more likely to be a reduction in the other, as in this study. Rees et al's study suggests a lower sella-nasion-subspinale angle in the sudden infant death syndrome, although this finding must be interpreted with caution as the confidence intervals in the group who died of the syndrome and the control group overlap.

This paper indicates the need for more extensive analysis when testing the association between facial hard tissue morphology and the related soft tissues in the sudden infant death syndrome. Further study of craniofacial morphometrics and dysmorphology in the syndrome would benefit from collaboration.

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