

# Diagnostic accuracy of intra-operative assessment of de-epithelisation of the malleus, mortality and epistaxis, the left-sidedness of Zenker's diverticulae, and laryngeal stenosis and three-dimensional printing

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## Editorial

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The surgeon's assessment of the state of the malleus during tympanoplasty is usually based on observation through an operating microscope or an otoendoscope. Azeez and Letha<sup>1</sup> have demonstrated the inaccuracy of microscopic assessment in detecting epithelial remnants over the malleus when compared to histological examination. Although the numbers studied were small, the level of inaccuracy was such that this cannot be ignored. The use of an endoscope was not covered in the paper and the issue remains unanswered for this particular condition in the published literature.

Corr *et al.*<sup>2</sup> studied all cases of epistaxis ( $n = 338$ ) admitted to their tertiary hospital over a 12-month period and found a 1-year mortality rate of 9.8 per cent. Their analysis showed that patients who died were older, had a higher cumulative illness rating score and lower levels of haemoglobin on admission. A strong case for the risk stratification of patients at the time of admission for epistaxis seems appropriate.<sup>3</sup> When one considers these results, and the national study by the Integrate network on epistaxis and mortality,<sup>4</sup> which looked at a 30-day outcome in mortality, the underlying factors were not dissimilar. The Integrate paper reported a mortality rate of 3.4 per cent. The change in mortality rate from 3.4 to 9.85 per cent indicates that mortality is not confined to the first month.

Fitchat *et al.*<sup>5</sup> studied 109 Caucasian cadavers to explore the reason behind the clinical observation of a Zenker's diverticulum being more common on the left side. The authors' found a significant difference in muscle thickness between left and right sides of Killian's dehiscence, irrespective of patients' age, sex, length or stature. They attribute the predominance of left-sidedness to this difference.

Gradenigo's syndrome, a triad of peri-orbital unilateral pain, diplopia and otorrhoea, is an adult condition that is rarely seen in children; hence, the case report<sup>6</sup> included in this issue is instructive. The symptoms arose from petrous apicitis, which responded to conservative treatment.

The use of three-dimensional (3D) printing as a tool for virtual surgical 3D simulation and planning has been shown to increase efficiency and accuracy in various clinical scenarios. Richard *et al.*<sup>7</sup> have demonstrated the feasibility of using 3D printing in paediatric laryngotracheal stenosis and described its potential. An earlier study,<sup>8</sup> from Italy, had examined the use of 3D printing in upper airway stenosis in seven patients and found it useful. The authors had concerns regarding the fidelity level of 3D models and suggested confirmation by future studies. The current paper helps to answer some of the questions raised.

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