Training model for nasal packing

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SUMMARY

A model is described for practising packing of the nose with ribbon gauze in the treatment of epistaxis. The model was constructed from accurate casts of a cadaveric nasal cavity. The value of the model as a practical teaching aid is shown by a trial on a group of 15 accident and emergency (A&E) doctors. After training on the model, there was a significant improvement in the confidence of the doctors to pack a nose, the amount of gauze packed and the visual appearance of the pack. Use of the model should raise the generally poor standard of nasal packing by doctors working in A&E departments.

Key words: epistaxis, nasal packing, training

INTRODUCTION

Patients with epistaxis often present to accident and emergency (A&E) departments. Many may be treated successfully with simple compression or cautery of a bleeding point. Some will require a nasal pack to obtain haemostasis; A&E doctors have been shown to be very poor at performing this procedure.¹ We present a training model for nasal packing which was simply made from readily available dental materials. We describe briefly the model and give the results of a trial showing its validity as a teaching aid.

MATERIALS AND METHODS

The model

A mid-sagittal section of a cadaveric head was used to obtain anatomically accurate impressions of the nasal cavity and face. A mould was constructed from these impressions and filled with dental plaster. The finished cast was painted

with sealant and acrylics and mounted in clear Perspex with a removable opaque plate to cover the medial surface (Figs 1 and 2).

Validation of the model

Accident and emergency doctors from three district hospitals around Manchester volunteered to be trained on the model. They were asked initially to pack the nasal cavity with the medial surface covered. They were then taught how to pack the nose

Fig 1. Packing the nose model, with the opaque, black, Perspex plate covering the medial surface.

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and were allowed to practise with the opaque plate removed. They were then asked to attempt a second packing with the opaque plate covering the medial surface. Before and after training, each subject was asked to give a numerical score of their confidence in their ability to perform the procedure. The length of ribbon gauze packed at each

attempt was recorded. Each trial nasal pack was photographed and later scored, by an independent assessor, for coverage of the septum, density, layering of the gauze and absence of prolapse of the pack into the oro-pharynx.

RESULTS

Seventeen A&E doctors (16 senior house officers and one senior registrar) volunteered for training on the model. Two were excluded because they had recently completed ear, nose and throat posts. There was a significant increase in subjective confidence, length of gauze packed and the visual appearance of the pack (Table 1). The model sustained no significant damage as a result of this intensive use.

CONCLUSIONS

The finished model may be used to provide a reasonably accurate simulation of nasal packing and allows inspection and assessment of the pack by removal of the opaque plate. The model is stationary and does not actually 'bleed'. Some anatomical features, such as the friction of the mucosal surface and elasticity of the nares, are not adequately reproduced. Use of more sophisticated materials and methods of construction may improve the model and simple developments would allow other procedures to be practised. Nevertheless, the current model has been shown to be a useful new teaching aid and its use is supported by the current trend towards initial learning of skills on models rather than patients.

Fig 2. Inspecting the half-completed pack.

	Before training	After training
Confidence in own ability (1-10)		
Mean	3.33	8.00*
Range	1-6	5-10
Length of ribbon gauze packed (cm)		
Mean	173	321*
Range	61-328	232-412
Visual score of pack (1-4)		
Mean	2.20	3.40*
Range	1-3	3-4

* $P < 0.001$ (normal distribution, paired t -test).

Table 1. Changes in confidence score, length of gauze pack inserted and visual appearance score before and after training of 15 doctors on the model

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