2 Comparing the mandibular (inferior) curves of these blades: the diameter of the curve of the #4 blade is longer and the "pocket" that accommodates the tongue is larger. This observation is probably a simplistic explanation why MIT or forward space encroachment is considerably less with the #4 blade.

The clinician may thus deduce:

- The #4 Macintosh blade should be the principal blade for intubation in normal and large-sized adults with teeth. It is far superior in difficult intubations and should be available on emergency trays, in emergency rooms and, most importantly, in the delivery suite.

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REPLY

The support of clinicians is welcome as the work was essentially theoretical. At present investigation of the view obtained at laryngoscopy is an inexact science because of the uncertainty about the number of variables that need to be taken into account. Anatomical variations between patients, differences in laryngoscopy technique and of course blade design all need to be considered. Only when all of these are apppropriately analysed will a satisfactory clinical proof of our model be possible. The obvious starting position is to study rigid blades which must be the most predictable of the variables.

A simplistic way to think of the analysis described is to consider a starting position of knowing the expected distance IT. The blade is then imagined to be inserted to that depth with its tip against the posterior pharyngeal wall and the incisor surface at distance IT touching the upper incisors. As far as the analysis is concerned the efficiency of the blade depends firstly on how far forward the tip can rotate if contact with the incisors is maintained. This is essentially determined by the mandible and reflected in the angle MIT. Secondly, the blade shape may block the eyeline view to the target which is reflected in angle EIT. As both these angles are measured from the upper incisors, for any given situation the simple combination MIE, the sum of the two angles, is a measure of the effective width of the blade relative to how far the mandible allows it to rotate forward. The relevance of incisor contact and mandibular recession or otherwise are obviously critical for this model.

An alternative model, when the blade tip is imagined to be stationary in contact with an optimally positioned hyoid, describes forward blade rotation up off the incisors.[1] This provides an appropriate description for what Dr. Relle describes as "using other dimensions" under his first comment. This modelling is less interesting for the blades in question because it relates to situations where difficult intubation is progressively more unlikely. It does, however, show that, where space in front of the blade is not a problem, the straight blade rapidly reaches a state where it cannot be bettered simply because its shape provides no obstruction to eyeline view.

There are very good reasons why we chose not to make much of the apparent advantage of the Mac #3 over the Mac #4 blade. Firstly, the differences shown are relatively small. A combined (EIT plus MIT) angular difference of 1° is worth about 2 mm of posterior displacement of the blade tip when IT is 11.5 cm. Secondly, it is important to remember that the traditional rigid blade shapes are not necessarily constructed to any specified standard and differences between manufacturers and possibly even the same manufacturers over a period of time may vary. We referred to this problem particularly in the article. Of the blades we have had available to test formally, the Mac #4 has generally had a slight advantage over its Mac #3 equivalent.

Finally, we would like to add a comment on the Editorial[2] relating to our paper, where McIntyre refers to "encouraging anaesthetists to select the most suitable blade for their purpose, not merely a blade they can just manage successfully." Our eventual goal is to be able to suggest the appropriate blade for a particular patient with whatever anatomical problem preoperative assessment determines.

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REFERENCES

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Spinal anaesthesia for Caesarean section in a patient with brain neoplasma

To the Editor:

A 19-year-old gravida I, para 0 came to hospital with nausea, vomiting, and swallowing disturbances at 31 wk gestation. She complained of frontal headaches, dysarthria and difficulty in walking. The patient showed symptoms of involvement of the cranial nerves V, VII, VIII, IX, X, and XII on her right. The tenth cranial nerve displayed signs of right-sided recurrent laryngeal nerve paresis and she repeatedly complained of regurgitation. First tomographic scannings and later histological results demonstrated a glioblastoma multiforme originating from the pontomedullary junction and extending to the cerebellum. The fourth ventricle was narrowed but not obstructed. At 34 wk, amniocentesis was performed to predict fetal lung maturity and bloody tinged amniotic fluid was found. At the same time the cardiotocogram displayed a decreasing fetal heart rate due to uteroplacental insufficiency. A partial placental abruption was suspected and an emergency Caesarean section was planned.