

Clinical Reports

Changing Mallampati score during labour

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We present the case of a changing Mallampati score during the course of labour in a healthy primigravida. On admission to hospital, the airway was assessed as Mallampati class I-II. At 5 cm cervical dilation, the woman began to bear down strenuously and continued this despite being advised of the inherent hazard. At 8 cm dilation, Caesarean delivery was contemplated because of fetal heart rate decelerations. Repeat airway evaluation revealed marked oedema of the lower pharynx giving rise to a Mallampati score of III-IV. Improvement of the fetal heart rate tracing permitted vaginal delivery under local infiltration. Postpartum, the Mallampati score was still III-IV. However, 12 hr later it had returned to the admission classification of I-II. We recommend that, in addition to the usual airway evaluation on admission, the assessment be repeated in the obstetric patient before induction of general anaesthesia.

Nous présentons un cas de variation du score de Mallampati pendant le travail d'une primigeste bien portante. A l'admission, son airway est classé I-II sur l'échelle de Mallampati. Avec une dilatation cervicale de 5 cm, la patiente se met à pousser vigoureusement malgré sa connaissance du danger inhérent à un tel effort. A 8 cm de dilatation, on envisage une césarienne pour cause de décélérations du coeur foetal. Des évaluations répétées de l'airway révèlent un oedème important du pharynx inférieur qui fait passer le score de Mallampati à III-IV. Finalement, avec l'amélioration du tracé foetal, on accouche la patiente par voie vaginale sous infiltration locale. Au postpartum, le Mallampati est toujours à III-IV. Cependant, 12 heures

plus tard, on constate que le score de Mallampati redevient I-II comme à l'admission. Nous recommandons de toujours réévaluer l'airway d'une parturiente avant l'induction de l'anesthésie générale, même si cet examen a déjà été fait à l'admission.

Failure to achieve tracheal intubation has evolved as the primary cause of anaesthesia-related maternal mortality.¹ For this reason, a Mallampati evaluation of the airway² with or without the Samssoon-Young additions³ is performed in many obstetrical units on admission of the pregnant woman to hospital. The result of such early assessments, however, may no longer be valid after a period of active labour as evidenced by the following case report.

Case report

A 28-yr-old healthy primigravida entered the obstetric unit in early labour stressing that she desired "natural" childbirth and would not accept regional anaesthesia. There was no previous anaesthetic history. Physical examination, including facial and neck anatomy, was unremarkable and the airway, assessed by the anaesthesia resident with the patient in the sitting position, was judged to be Mallampati class I-II. Labour progressed satisfactorily and, at approximately 5 cm dilation of the cervix, the woman began to bear down strenuously with every contraction. Advised that early pushing was hazardous, she alternated screaming with continued bearing down. At 8 cm cervical dilation, fetal heart rate decelerations appeared with the contractions leading to preparation for a possible Caesarean section. A repeat airway evaluation by the same resident and again in the sitting position revealed marked oedema of the lower pharynx giving rise to a Mallampati score of III-IV, a finding which was confirmed by the attending anaesthetist. A change from the right semilateral to the left lateral position relieved the decelerations. Spontaneous delivery of a vigorous infant, weighing 3080 g, occurred 50 min later, after a 4½ hr period of bearing-down activity. A laceration was repaired with local infiltration. The now cooperative woman willingly agreed to another Mallampati assessment which

Key words

AIRWAY: assessment;
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was still class III–IV. Twelve hours later, airway evaluation was repeated, independently, by the resident and two attending staff; all three gave a score of I–II.

Discussion

The importance of airway assessment prior to obstetric anaesthesia has only recently been emphasized. Samssoon and Young² undertook a retrospective study of seven women whose tracheas could not be intubated during a previous parturition-related anaesthetic. The evaluation was based on their own modification of the method of Mallampati *et al.*³ Six of the seven women were found to have a class IV airway. It was concluded that “any screening test which adds to our ability to predict difficulty in intubation must be welcomed.” Diemunsch *et al.*⁴ proposed that the problem of difficult intubation at emergency Caesarean section anaesthesia may be prevented by scoring the airway according to Mallampati² and Wilson.⁵ Using a modified Mallampati test, Rocke *et al.*⁶ performed a preoperative airway assessment in 1500 women undergoing elective or emergency Caesarean section under general anaesthesia and confirmed the correlation between the oropharyngeal structures and the view at laryngoscopy and difficulty in intubation. In none of these publications were labour and its possible effects on the airway considered. A Medline search (1985–1993) failed to reveal any description of airway evaluation during the course of labour. However, there have been reports of difficult intubation in cases of pharyngolaryngeal oedema consequent to pregnancy-induced hypertension,^{7,8} fluid overload in conjunction with the antidiuretic properties of oxytocin,^{9,10} and prolonged strenuous bearing-down efforts.^{11,12} In the latter cases, the laryngeal oedema was explained on the basis of the intermittently raised venous pressure in the upper body upsetting the osmotic balance within the tissues.

All airway evaluations in our patient were performed in the sitting position which not only produces a better view of the pharyngeal structures than the supine posture¹³ but also reduces the risk of aortocaval compression. Phonation was not encouraged to minimize added anxiety.

Airway assessment on admission to the obstetric suite will provide an early indication of a potential intubation problem, but will not guarantee maintenance of a satisfactory condition. Based on the findings in our case and those described in the literature, we recommend that airway assessment be repeated prior to initiation of any major obstetric anaesthesia.

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