ENDOSCOPIC DACRYOCYSTORHINOSTOMY WITH LARYNGEAL MASK AIRWAY: CASE SERIES

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SUMMARY

Endoscopic Dacryocystorhinostomy (End – DCR) done under general anaesthesia (GA) usually uses an endotracheal tube (ETT) to maintain and protect airway during the procedure. However the ETT associated airway complications can produce considerable morbidity in the patients following extubation, which include laryngospasm, aspiration and significant bleeding with straining and coughing. In order to reduce the incidence of such post operative complications, laryngeal mask airway (LMA) was used in a group of patients selected carefully to maintain and protect airway during End – DCR.

Keywords : Endoscopic Dacryocystorhinostomy, Laryngeal mask airway.

Methods

Twenty one adult patients underwent Endo – DCR under GA during the period from June 2005 to March 2007. Adrenaline 1 in 1000 was used topically as a nasal decongestant, immediately prior to induction of anaesthesia. Following induction, LMA of appropriate size was inserted and achieved an air tight seal at the inlet of larynx. 30 – 45^0 head up tilt was maintained throughout surgery to help drainage of blood, irrigation fluids and secretions into the oesophagus. Oro and nasopharynx was cleared of secretions at the end of surgery and the LMA was removed in the lateral position under awake conditions.

Results

All the patients had a very smooth recovery from the anaesthetic and had not developed complications related to the LMA in the peri operative period. Significant bleeding was not a problem as there was no straining or bucking at the time of emergence. Post operative nausea and vomiting (PONV) was not a problem in the immediate post operative period nor the respiratory complications due to the possible aspiration. Patients were fed orally within 30 to 45 min of gaining full recovery and were discharged with in 24 hours of surgery in the absence of untoward problems.

Conclusion

In the hands of experienced anaesthetists with due attention to appropriate selection of patients, the use of LMA to maintain and protect airway during Endo –DCR is a safe technique and have the benefits of reduced incidence of post operative airway complications, bleeding and also faster recovery and shorter stay in the hospital.

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Endoscopic Dacryocystorhinostomy (Endo – DCR) usually uses an endotracheal tube (ETT) to maintain and protect airway when done under a general anaesthetic[1] (GA). However the ETT related post operative complications can produce significant morbidity in the patients. Those include laryngospasm with extubation under lighter planes of anaesthesia and the risk of aspiration of blood and secretions into the airway with extubation under deeper planes .Post operative bleeding and significant oozing is another problem seen due to excessive coughing and straining following extubation, in the susceptible individuals. Such problems while increasing the incidence of post operative morbidity also increase the duration of hospital stay after surgery.

In this case series, ETT was substituted by laryngeal mask airway (LMA) in carefully selected group of patients to maintain and protect airway from aspiration of secretions and blood during the procedure. LMA was used in place of ETT to reduce the incidence of airway complications and bleeding in the immediate post operative period and thereby to hasten recovery.

Methods

All the patients in the case series had their surgery at Nawaloka hospital, Colombo, Sri Lanka. Adrenaline 1 in 1000 dilution was used topically as a nasal decongestant immediately prior to induction of anaethesia. Pre operatively, airway was assessed to identify and exclude the patients with distorted anatomy of upper airway, who are unsuitable for LMA. Among the patients selected, further suitability for LMA was assessed after insertion of LMA under anaesthesia following induction with fentanyl and propofol intravenously. Those patients whose airway could be maintained with an airtight seal at the laryngeal inlet were considered suitable for LMA and those who were unsuitable,

were intubated. Head up tilt of 30-45^0 was maintained throughout the procedure to help drainage of blood, irrigation fluids and secretions into the oesophagus and to promote venous drainage from head and neck area. In the majority of patients, hypotensive anaesthesia was achieved with intermittent positive pressure ventilation (IPPV), isoflurane and morphine 0.1 mg / kg intravenously without the use of muscle relaxants. Halothane and atracurium were used in patients whose blood pressure could not be brought down to the required levels to control bleeding.

The surgery was done as a combined procedure with the participation of a consultant ophthalmologist and an ENT surgeon. The average duration of surgery was ranged between 30 to 60 minutes. A throat pack was not used in any of the patients but due attention was paid to haemostasis throughout surgery. The oro and nasopharynx was cleared of secretions and blood at the end of surgery and the LMA was removed in the lateral position when fully awake. Metoclopramide 10 mg was given intravenously for all the patients at the commencement of surgery, in order to achieve its anti emetic effect in the post operative period. Post operative analgesia was provided with diclofenac sodium 100 mg given per rectum following induction and subsequently orally in combination with paracetamol. Nurses' and doctors' notes were looked up to identify the adequacy of pain relief, incidence of PONV and bleeding in the immediate 24 hours following surgery. Feeding was commenced within 30 – 45 minutes of full recovery from the anaesthetic.

Results

Twenty one adult patients underwent Endo – DCR during the period from June 2005 to March 2007. Eighteen were females and three were males between the ages of 25 to 70 years in the ASA Group 1 & 2. During the case study period, there was only one patient with a short neck whose airway could not be maintained with the LMA and needed intubation. None of the patients in the case series has developed LMA related problems during surgery, such as air leaks, under ventilation due to the displacement of LMA and respiratory problems as a result of aspiration. Though an increased incidence of PONV and regurgitation of contents with hyperinflation of stomach, is a theoretical possibility with IPPV using LMA, this was not observed in any of the patients in the case series. Bleeding was also not a problem in the post operative period. Oral feeds were well tolerated and patients were able to go home within 24 hours of surgery.

Discussion

In my experience, reinforced LMA was far superior to ordinary LMA, especially in head and neck procedures as the flexibility of tube permit the user to tape it away from the surgical field and thereby to lower the incidence of displacement in the event of relative movement of head, neck or the main tube of LMA. However due to the non availability of reinforced version, ordinary LMAs were used in the case series.

The incidence of extubation related post operative airway complications can be kept to a minimum by using a LMA as they are better tolerated until the time of full recovery and also the laryngospasm is very unlikely. Well fitted LMA at the laryngeal inlet also provides a certain protection against aspiration until the time of gaining full recovery from the anaeshetic.

The surgical bleeding was minimal due to the absence of straining and coughing in the post operative period. Moreover, the LMA kept until the time of full recovery from the anaesthetic was also helpful in maintaining airway and ventilation in the presence of an oedematous nasal passage.

The topical use of 1:1000 adrenaline packs intra nasally helped to minimize bleeding from capillaries in the peri operative period. IPPV maintained with or without relaxants was beneficial in minimizing arterial bleeding in the presence of mild hypocarbia.

In the majority of patients, morphine facilitated the use of IPPV without a relaxant due to its depressant effects on respiration, in addition to being a good hypotensive agent.

The patients had a faster recovery from the anaesthetic as the depth of anaesthesia needed to suppress airway reflexes was less with the substitution of ETT with LMA.

Lower incidence of post operative airway complications, bleeding, nausea and vomiting together with a good pain relief hastened recovery following surgery and thereby shortened the stay in the hospital.

Conclusion

The main conclusion in this case series was that the LMA can be used safely in Endo – DCR in a carefully selected group of patients, in order to lower the incidence of post operative airway problems and surgical bleeding to a minimum. The technique also has the advantage of faster recovery and shorter hospital stay with cost benefits to the patients.

References

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