

separate ward at No. 3 RAAF Hospital, Richmond. This would not be feasible in the general community.

All the members were tested serologically for IgM and IgG antibodies specific to Rubella. In addition each patient was asked to participated in a questionnaire to determine their symptoms., their likely contact with pregnant women and the number of working days lost.

A confirmed case is one in which the patient demonstrated Rubella specific IgM antibodies.

The member was considered to have clinical rubella if their symptoms comprised of rash and fever and one or more of arthralgia, lymphadenopathy or conjunctivitis. The patients were also asked if they had been in contact with any other rubella cases. A further two questions related to the presence of a sore throat and nausea and vomiting. The patients were asked if their illness had been correctly diagnosed on first presentation.

Results

The following figures were derived from the questionnaire and serological testing:

Antibodies - 94% (33/35) were Rubella IgM positive

Symptom	Percentage	Number
Rash	100	35
Sore Throat	54	19
Lymphadenopathy	49	17
Arthralgia	34	12
Fever	31	11
Conjunctivitis	29	10
Nausea/Vomiting	6	2
Other Symptoms	6	2

(one patient had abdominal pain and the other generalised pruritus).

All the cases except one, were epidemiologically linked. Of the 35 cases, two patients stated they had been in contact with pregnant women. The cases were correctly diagnosed initially in 77% of cases. The remaining 23% were treated for other illnesses.

The total number of lost working days was 153 days with an average of 4.4 lost working days per patient.

Conclusions

The rapid outbreak of rubella is demonstrated by the appearance of 35 cases within a 3 week interval. All people entering the armed services, invariably live in close quarters during their training and whilst on exercise. In view of the large number of lost working days, rubella vaccination should be given to all new service members as it would prove cost effective.

References

1. Canadian Communicable Disease Surveillance Methods. Vol.1753.1991.

Acute Airway Management

by

Wing Commander William M. Griggs

Disclaimer

This series of articles on acute trauma management is intended as an aid memoire only. Physicians who are likely to have to treat acutely injured patients are advised to apply to the Royal Australasian College of Surgeons to attend a EMST course. While this series is specifically about the trauma patient, many of the principles of care also apply to the non-trauma patient

Introduction

After ensuring your own and the patient's safety, airway management takes absolute precedence in the acute management of the trauma patient. It is

important that anyone who may have to manage an acutely injured patient has a good understanding of the principles and practice of airway care.

At all times during assessment and management of the airway consideration must be given to the possibility of cervical spinal injury. This is particularly true in the presence of neck pain, neurological signs or symptoms, or any injury above the level of the clavicles. Most airway manoeuvres can be managed with the cervical spine immobilised as much as possible. However, an intact cervical cord is of no value to a person who dies from airway obstruction and each case should be judged on its own merits.

Virtually all assessment and management assumes that any helmet if present has been removed.

Methods for safely doing this will be discussed in a later article.

Assessment

Initial assessment of airway patency can be as simple as getting the patient to answer a question. A lucid response to the question "How are you?" indicates not only airway patency, but also tells you about ventilation and circulation to the extent that the brain is getting enough oxygenated blood to enable thought processes to occur. However, if there is not a lucid response, further investigation of the airway is essential. Early application of high flow oxygen (12L/Min) should be used wherever available.

A hand placed in front of the mouth and nose may detect warmth or moisture from exhaled gases. It is important to determine whether or not there is evidence of respiratory movement as absent respirations obviate many of the signs of airway obstruction. The mouth should be opened and a visual inspection made to see if any foreign bodies are pre-

sent such as vomitus, false and/or broken teeth, chewing gum etc are present. Any obvious foreign bodies should be removed with the exception that correctly sited false teeth may be left in-situ.

If breathing is present, the presence of noisy respirations indicates a degree of respiratory obstruction. Total obstruction, of course, results in no flow and therefore no noise. It may not always be easy to hear respiratory noises particularly when loud noises are nearby. In these circumstances, a hand placed over the larynx may detect vibrations due to partial obstruction. This can be quite a useful technique.

Management

Removal of any foreign bodies is important. Opening the mouth and clearing large pieces with a gloved finger is the first option. If suction is available a wide bore sucker can be used for material out of reach of the finger.

Simple manoeuvres should always be tried first. The correct positioning of the jaw should be done to eliminate possible obstruction from the tongue lying against the back of the pharynx. This can be either by the chin-lift or the jaw-thrust. It is easiest to translate the jaw forward with it slightly open.

Either oropharyngeal or nasopharyngeal airways can be tried. Oropharyngeal (Geudel) airways are inserted upside-down and then rotated 180° at the midpoint of insertion. This avoids the problem of sliding under the tongue which can occur if they are inserted the correct way up. Insertion of an oropharyngeal airway may not be tolerated by a patient with an intact gag reflex. Nasopharyngeal airways can be difficult to insert although they stimulate the gag reflex less. The nasal turbinates can physically obstruct passage through the nose. and they may frac-

ture during insertion. It is also possible to push them submucosally into the retro pharynx if excessive force is used for insertion. This usually causes significant bleeding and further airway problems and is ideally avoided !

Endotracheal intubation should be considered if the above are all unsuccessful. Either nasal or oral routes can be used. The nasal route is preferred for blind intubation as the tube is firmly supported.

However, all the problems of the naso-pharyngeal airway can occur with the nasotracheal tube. Also, there have been reported cases of intracranial insertion of nasal tubes in the presence of a fractured skull (in particular the cribriform plate). Whilst these reports have been due to attempted nasogastric insertion, the problem has also occurred with nasotracheal tubes. Care should be exercised in the presence of head injuries. Oral endotracheal intubation can not usually be performed blind and requires a laryngoscope and direct laryngoscopy. Correct positioning of the endotracheal tube MUST always be confirmed by auscultation of both sides of the chest AND epigastrium. Air rushing up and down the oesophagus can simulate normal breath sounds and therefore it is important to listen over the epigastrium in all cases. If the ambient noise is too high, visual chest wall movement is helpful. An endotracheal tube should be inserted to about 21 mm mark in the average sized adult. This will position the cuff below the vocal cords and still leave the tip of the tube above the carina. During laryngoscopy the tube should be inserted until the cuff is just below the cords. A tube inserted too far will usually go down the right main bronchus resulting in unequal ventilation. The endotracheal tube may become obstructed by secretions, blood or by the cuff herniating over the end. Consideration should be given to removing/replacing the endotracheal tube in cases of inability to ventilate or adequately oxygenate a pa-

tient. Re-laryngoscopy may be useful to confirm that the tube has not become dislodged and is still passing through the vocal cords. Severe bronchospasm can simulate airway obstruction in the intubated patient.

If intubation is impossible and airway access is urgently required consideration must be given to the creation of a surgical airway.

Cricothyroid insufflation has been advocated as a temporising measure to provide oxygenation although it is not adequate for carbon dioxide clearance. A large bore (16 gauge at least) cannula is passed through the cricothyroid membrane and the cannula connected to a high flow oxygen source. The source must be intermittent to allow exhalation. This can be achieved by using a special injector, or by using a constant flow with a Y - piece which is occluded for inspiration to occur. The value of technique in the field is questionable.

Cricothyrotomy is the making of a formal incision through the cricothyroid membrane. This membrane lies very superficial and can usually be easily felt between the thyroid cartilage and the cricoid ring. A scalpel is used to make an incision through the skin and the membrane. A tube is then passed into the trachea. An endotracheal tube may be used, but care must be taken not to pass it into the right main bronchus (check for equal chest movement and breath sounds).

Summary

Good airway assessment is important and includes visual inspection, listening and even palpation of the airway. If obstruction is identified the steps to be considered are:-

- Manual clearance
- Chin lift / Jaw thrust

Oro- or naso-pharyngeal airway insertion
Endotracheal intubation
Surgical Airway

As far as possible always attempt to keep the cervical spine immobilised by use of a second pair of hands and/or a cervical collar.

Associate Membership

The last council meeting passed a resolution to include a new membership category. This will be associate membership, open to anyone with a genuine interest in military medicine who does not fulfil the criteria for full membership. Associate members will have no voting rights and will not have a place in the council, but in all other ways may be involved in the associations' functions. These members who know of people without tertiary qualifications or the equivalent who would be interested in joining the association, please get them to conduct the Secretary for a membership form. Joining fee for associate membership is \$20, annual fees \$10, the same as student membership.

The medical Care of Iraqi Enemy Prisoners of War by Longmire A. and N. Desnukh

Military Medicine. Vol.156.No.12.1991.p645-648.

During operation Desert Storm approximately 62,000 enemy prisoners of war were captured by the coalition. From January 27 to February 23 1991 approximately 300 patients were treated. From the beginning of the ground war on February 24, though March 30 approximately 8,979 patients were treated.

The most commonly treated conditions seen was dental disease (24.0%). Other commonly treated conditions were upper respiratory tract infection (12.4%), headache (11.7%) and urinary tract infections (9.6%). The unique problem of the language barrier and security requirements increased the difficulty and the time required to conduct sick call for Iraqi EPWs.

Comment: The work load for medical personnel could have been horrendous, if coalition casualties were higher. How was there such a high number of UTIs among male prisoners of war?

Treatment of Malaria Acquired in Southeast Asia by Shanks D. and J. Boslego

Military Medicine. Vol.157.No.1.1992.p4-6.

Falciparum malaria will continue to be a major threat to military operations in Southeast Asia. The continued advance of multiple drug resistant strains will make the selection of effective chemotherapy increasingly difficult. Chloroquine and pyrimethamine/Sulphadoxine have been severely compromised and mefloquine resistance is no longer rare. Although new antimalarials such as qinghaosu are being developed, quinine remains the basic drug for severe malaria. Despite its complexities as a disease, malaria is a readily treatable infection once medical officers are aware of the potential pitfalls. Military physicians must stay abreast of the constant evolution of drug - resistant malaria.

Comment: Cambodian UNTAC forces must be a major source of concern for those who provide their medical care.