Anaesthesia for Middle Ear Surgery
(Tympanoplasty, mastoidectomy, reconstruction)

Introduction

International Nepal fellowship (INF) have been conducting ear camps in Nepal for over 20 years. Surgery is carried out in very basic surroundings with limited equipment yet achieving outstanding results. Regional anaesthesia is preferred since general anaesthetic and recovery facilities are limited yet surgical requirements can be fulfilled, it is well tolerated by patients, bleeding is less as is postoperative nausea and vomiting and recovery is faster. Additionally, local anaesthetics and sedation are both widely available nationally and are economical.

Anaesthetic Technique

Check the patient and operative site
Secure intravenous cannula in hand opposite operative ear
Sedation  
Adults  30mg Pentazocine
& 5mg Diazepam
Children  1-2mg/kg Ketamine
Antibiotics  
Gentamicin  160mg
Amoxiclox  500mg/500mg
BenzathinePenicillin  1gm
Needle  27G 1 ½ Inch
Local Anaesthetic (LA)  
5ml Lidocaine 2%
& 5ml Bupivacaine 0.5%
& 1:80,000 Adrenaline
Analgesia  Diclofenac  75mg (i.m.)

Ear Block

- Begin at the top of the ear, behind the pinna
- Infiltrate over the temporalis fascia to cover the donor graft
- Infiltrate over the line of a post aural approach and over the surface of the mastoid and its tip to block:
  - The greater auricular nerve (C3)
  - The lesser occipital nerve (C2-3)
  - The auricular and tympanic branch of vagus (X)
  - These supply the skin of the mastoid and of the pinna

- From posterior, infiltrate anteriorly towards the incisura, then redirect to deposit LA to the posterior wall of the meatus
- Infiltrate in front of the tragus and posterior to the temporomandibular joint and neck of mandible to block the auricular branch of the auriculo-temporal nerve ($V_{mandibular}$)
- This often leads to a facial nerve block
- Lastly perform four intra aural EAC injections
  - Anterior (V)
  - Posterior (C3)
  - Posterosuperior (VII)
  - Inferior (X)
- If you can’t inject easily you are probably in the right place!
- The glossopharyngeal nerve supplying the mucous membranes of the middle ear is very difficult to block directly

Conclusion

Regional anaesthesia ensures middle ear surgery may be performed safely, effectively and efficiently in this resource limited environment. With only a 1-2% conversion to general anaesthesia, associated risks of general anaesthesia are significantly reduced. All patients who had facial nerve palsy made full recovery within 24 hours. Both surgeons and patients were happy with the experience and the results!

References


With Special Thanks to:
International Nepal Fellowship
Ellen Finlay
Tristram Lesser (Liverpool)
B Braun (for their donation of 27G needles for the April 2012 camp)