WIDE AWAKE HAND SURGERY

WALANT- WIDE AWAKE LOCAL ANAESTHESIA NO TOURNIQUET

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CASE 1: # OLECRANON AND CLAVICLE RT UPPER LIMB

- M 45 years Diabetic type 2 uncontrolled with RBS 315 mg
- Hypertensive
- Cirrhosis of liver and portal hypertension
- H/o hematemesis before 1 year
- Bilateral pneumonia and interstitial fibrosis with respiratory failure
- Anemia Hb 8 gms, cytopenia and prolonged PT/APTT
- Sputum showed candida albicans
Physician, gastroenterologist and hematologist involved
Extensively investigated
Plan 6 units cryoprecipitate stat and 2 units FFP and 6 units PRP prior to surgery
6 units CRP, 4 FFP, 6 PRP per op
FFP/CRP AND PRP 2 units each 6 hours after surgery
Major concern was anaesthesia – GA/ Regional?

MANAGEMENT PRE AND POST OP
TRADITIONALLY, HAND SURGERY HAS BEEN PERFORMED UNDER TOURNIQUET CONTROL
WHICH REQUIRES ANESTHESIA AND THAT IS EXPENSIVE

- Pre-op consultation
- Pharmacy
- IV
- Pre-testing – EKG, CXR, Labs
- Recovery room
- Total cost = RS.....
11TH COMMANDMENT OF HAND SURGERY
THOU SHALT NOT USE EPINEPHRINE IN THE HAND

The use of epinephrine obviates the need for a tourniquet
STERLING BUNNELL
Father of Hand Surgery

- Injected a local anesthetic with epinephrine
- The finger died
- 60+ years of absolute obedience to #11
- Phentolamine described as antidote
- #11 is disproved
- Bunnell probably used procaine, which has a short shelf life
Cost

• Patient satisfaction > 90%
• Patient safety – no anesthesia side effects
• Patient safety – no stopping anticoagulants
• Patient safety – no stopping diet, insulin, etc.
• Quality – intra-operative assessment of tension of tendon repairs and transfers
• Quality – assessment of adequacy of release
• Increased compliance when patients watch

ADVANTAGES OF WALANT
> 1,000 cases
• Age range 12 to 100
• Excellent patient acceptance
• Some cases are just better this way

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WALANT TECHNIQUE

- Buffer the medication
- Slow injection
- Adequate time to “soak in”
- Pre-op and intra-op coaching

- Level I evidence from humans 2013
- It takes a mean of 26 minutes for maximal vasoconstriction after injection of 1:100,000 epinephrine with lidocaine beneath human skin (NOT 7 minutes –1987 pig study)
- Helpful to inject the local anesthesia before bringing the patient into the operating room.
How to inject local anesthesia so that it hardly hurts at all

Sept 2013 PRS with movies

1. A critical look at the evidence for and against elective epinephrine use in the finger.


1mg phentolamine in 1-5cc of saline and inject it everywhere epi has been injected in small volumes.
There are 2 problems with lidocaine and epinephrine
• Epinephrine “jitters or shakes”
  – Solution Warn patients after each injection – “may feel shakier like you have had a little too much coffee, nervous, temporary, normal and will go away in 15-20 minutes, you are not allergic to it”
• Fainting – vasovagal attack (always inject patients laying down)
  – Recognize it Patient says “I’m not feeling well”
  – or “I think I’m going to be sick”
  – Patient yawns or gets pale between the eyes
  – Solution get more blood to brain - Flex hips and knees, put pillow under feet, lower head of bed
Calculation of safe dose of lidocaine + epinephrine

7mg/kg is more than safe; Dr Vasconez and colleagues showed 35mg/kg is safe. *Plast Reconstr Surg.* 1996 Jun;97(7):1379-1384.
• 70 kg lady X 7 mg/kg = 490 mg of lidocaine with 1:100,000 epinephrine
• 490 mg of lidocaine is 49cc of 1% lidocaine with epi is extremely safe
• I stay at 50cc of 1% lidocaine with epi to always stay out of trouble without monitoring
Dosage of Local Anesthesia in Wide Awake Hand Surgery

Donald H. Lalonde, MD, Alison Wong, MD

One of the more notable recent changes in hand surgery is the method of delivery of the anesthesia. Similar to when they are having a dental procedure, patients who understand and are offered the wide awake alternative like the idea of (1) no preoperative testing, (2) no tourniquet pain, (3) less time at the hospital to have the surgery, (4) the ability to speak to their surgeon during the surgery, and (5) no sedation to cloud their head when they get home from their surgery.

The principle of minimal pain injection tumescent local anesthesia

Tumescent local anesthesia is like a tourniquet-free extravascular Bier block in which lidocaine with epinephrine is injected subcutaneously only where it is needed; everywhere the surgeon will be dissecting, moving fractures, or inserting K-wires (see...
Contraindications to epinephrine in the finger

• If they have a nice pink finger before I inject, they will have a nice pink finger after I inject unless I hurt the blood supply to the finger with my surgery
• Patients who don’t have good perfusion in the finger before I inject such as Buerger's disease Bad renal failure
WALANT flexor tendon repair

- Less rupture
- Less tenolysis
- Better patient assessment and education during the surgery
- Know if superficialis should be repaired or not
- Comfortable starting true active movement after surgery
WALANT tendon transfers

• Can adjust the tension of the transfer before you close the skin so you get it not too tight or too loose
• Patient can see transfer works with his own eyes
THANK YOU
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