

## Ankle and Regional Blocks

## INDICATIONS



- ⌘ Pain relief
- ⌘ Procedural
- ⌘ Diagnostic
- ⌘ Increase blood flow
- ⌘ Increase joint ROM
- ⌘ Reduce inflammation

## Bupivocaine (Marcain)

- ⌘ Long acting LA (3-10 hours)
- ⌘ Doses of 0.125-0.75%
- ⌘ Most toxic of all LA's
- ⌘ Drug of choice in obstetrics

## Ropivocaine (Naropin)

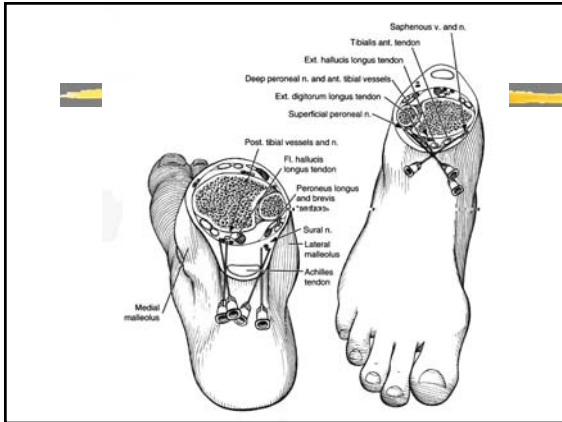
- ⌘ Similar duration to Bupivocaine but much safer (both cardiac & CNS toxicity)
- ⌘ 0.2% for analgesia
- ⌘ 0.75% for surgical anaesthesia
- ⌘ Cutaneous vasoconstriction occurs in field blocks

## Common Agents

Anaesthetic	pKa	Lipid sol	Prot. bound	onset	duration	MSD plain	MSD adren
Lignocaine	7.7	4	64	fast	moderate	200	500
Prilocaine	7.7	4	55	fast	moderate	400	600
Bupivocaine	8.1	30	95	slow	long	150	150
Ropivocaine	8.1	2.8	94	slow	long	200	200

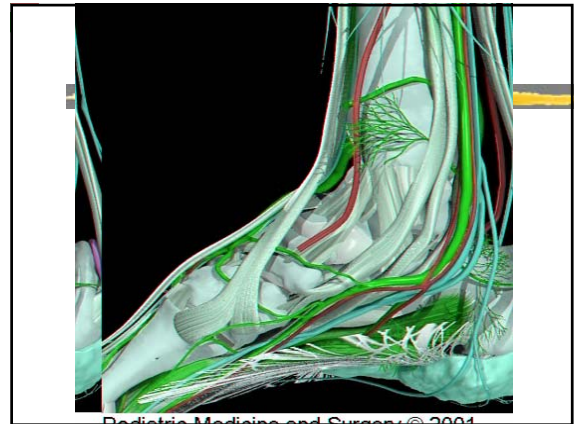
## Ankle Block

- ⌘ 5 terminal branches of the tibial, common peroneal, and femoral nerves.
- ⌘ Can be used for any type of foot and ankle surgery
- ⌘ Does not prevent tourniquet pain
- ⌘ Does not induce complete motor blockade



## Tibial Nerve

- ⌘ Diameter approximately 7mm
- ⌘ Inject at level of malleoli or inferior (3cm)
- ⌘ Patient may be supine, prone or supine with feet crossed
- ⌘ Induce parasthesia?
- ⌘ Volume 5ml
- ⌘ **Must** aspirate



## Saphenous Nerve

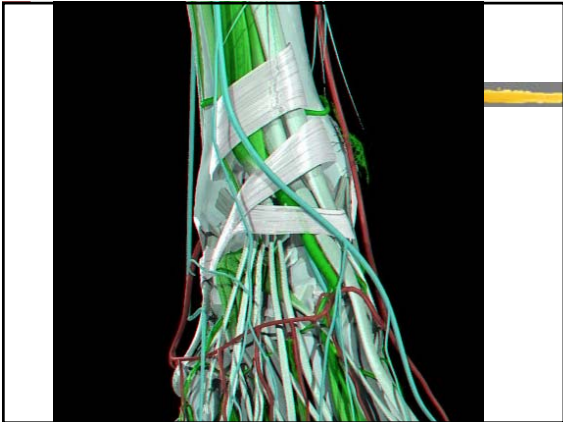
- ⌘ Branch of the femoral nerve that lies adjacent to great saphenous vein
- ⌘ Inject 3ml perivenous area 1-2cm proximal & anterior to medial malleolus (sausage shape)
- ⌘ **Must** aspirate
- ⌘ Alternative is to inject on the medial aspect of arch





## Deep Peroneal Nerve

- ⌘ Crosses the ankle between the EHL tendon and Tibialis anterior.
- ⌘ Adjacent to anterior tibial artery
- ⌘ Inject 3-5ml between tendons Just superficial to the talus/tibia
- ⌘ Alternative is to inject just distal to metatarsal-cuneiform joint
- ⌘ **Must** aspirate



## Superficial Peroneal Nerve

- ⌘ Exits the deep fascia 10cm proximal and slightly anterior to lateral malleolus
- ⌘ Divides into branches
- ⌘ Branches to foot
- ⌘ Anaesthetic



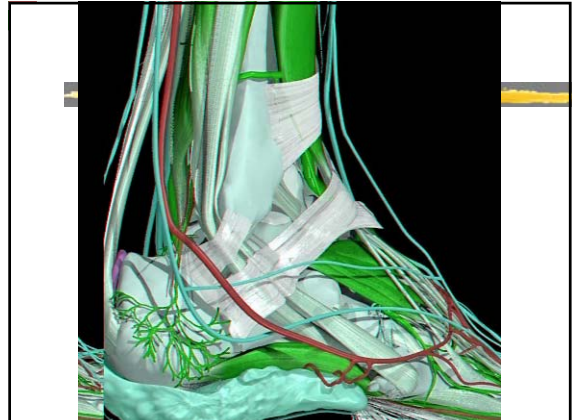
## Superficial Peroneal Nerve cont.

- ⌘ Where it pierces fascia (3ml)
- ⌘ Intra-malleolar (5-7ml)
- ⌘ Dorsum of midfoot (3-5ml)



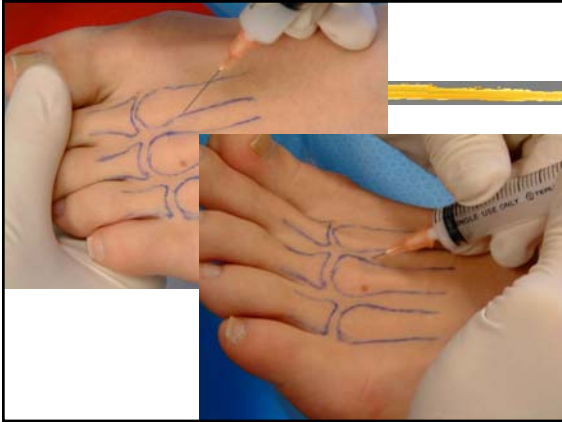
## Sural Nerve

- ⌘ Superficial nerve adjacent to short saphenous vein
- ⌘ Passes close to Achilles tendon and inferior to lateral malleoli
- ⌘ Inject either between TA and malleoli or calcaneal wall.
- ⌘ Volume 3-5ml
- ⌘ **Must** aspirate



## Injections for Morton's Neuroma

- ⌘ Diagnostic: 1-2ml LA only
- ⌘ Therapeutic: LA/steroid 50:50 mix, up to 3 injections (1 month apart)
- ⌘ Combine with other treatment
- ⌘ Success rate 30-81%
- ⌘ Technique: induce symptoms with needle, withdraw slightly & inject



### Complications of Steroid Injections

- ⌘ Steroid flair (7%)
- ⌘ Tissue atrophy
- ⌘ Precipitate deposit
- ⌘ Tendon damage

### Injections for Plantar Fasciitis

- ⌘ Corticosteroid : anaesthetic (50:50)
- ⌘ Long acting anaesthetic
- ⌘ Vitamin B12
- ⌘ Alcohol

### Injection technique



## Pavier & Liggins 2001

- ⌘ 5ml 0.5% bupivocaine injected for plantar fasciitis under post tib block
- ⌘ Injections given weekly (<5 injections)
- ⌘ 25 patients with long standing plantar fasciitis
- ⌘ 78% improvement in symptoms
- ⌘ 44% pain free at 12 months

## Plantar fasciitis treatment: Weil (1994): 248 patients. 85% success rate

Visit	Treatment
initail	Rest, stretches, ice, NSAID, OTC orthoses
4 weeks	Steroid, stretches, orthoses,
8 weeks	Steroid, night splints
12 weeks	BK cast
18 weeks	Surgery

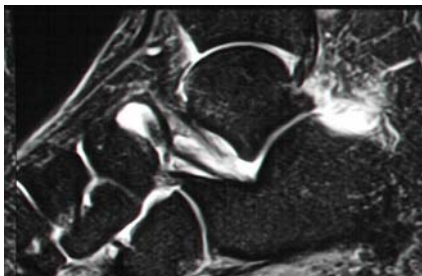
## Johnston et al. 1997

- ⌘ 5ml of 0.25% bupivocaine injected into Achilles paratenon
- ⌘ 9 patients with Achilles Paratenonitis
- ⌘ 3 patients achieved permanent resolution

## Potential Mechanism

- ⌘ Mechanical "brisement" of tissues
- ⌘ Breaking the pain cycle
- ⌘ Vasodilatory action of bupivocaine

## Sinus Tarsi Syndrome



- ⌘ First described by O'Connor in 1958
- ⌘ 200 cases in the literature
- ⌘ Often misdiagnosed as ankle instability or arthritis

## Anatomy

- ⌘ Divides the subtalar and talar-calcaneo-navicular joints
- ⌘ Contains the intraosseus talar-calcaneal ligament, synovial membrane, synovium, arteries
- ⌘ The ligament is tight with supination and relaxed in pronation

## Aetiology

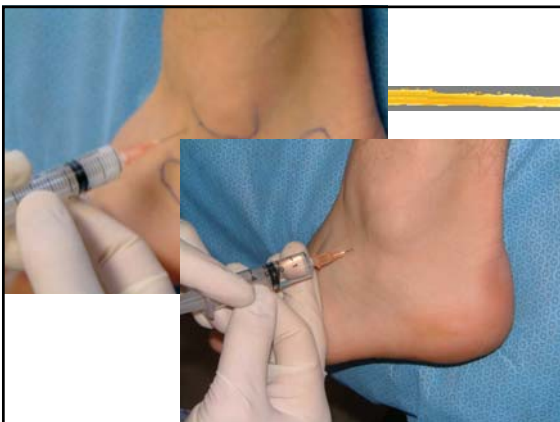
- ⌘ 70% have history of single or multiple lateral ankle sprain
- ⌘ 30% may have history of: localised osteoarthritis, sero-negative arthritis, gout, chronic localised inflammation

## Diagnosis

- ⌘ History
- ⌘ Lateral rearfoot pain
- ⌘ Palpation
- ⌘ Instability (especially on uneven ground)
- ⌘ LA injection
- ⌘ Negative x-rays
- ⌘ Arthrography, MRI

## Treatment

- ⌘ Orthoses
- ⌘ LA/steroid injections
- ⌘ Exercises
- ⌘ Surgical excision



## Other Intra-articular injections

- ⌘ Diagnostic or therapeutic
- ⌘ Most common lesser MTPJ's, sesamoids
- ⌘ Must know your anatomy
- ⌘ Must distract the joint
- ⌘ Avoid plantar infiltrations where possible

