"Diagnostic dilemmas in facial pain"

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"Listen to the patient.....he is telling you the diagnosis"

Galen - 179AD

Trigeminal Neuralgia

 - a sudden, unilateral, severe, brief stabbing, recurrent pain in the distribution of one or more branches of the fifth cranial nerve'
 IASP

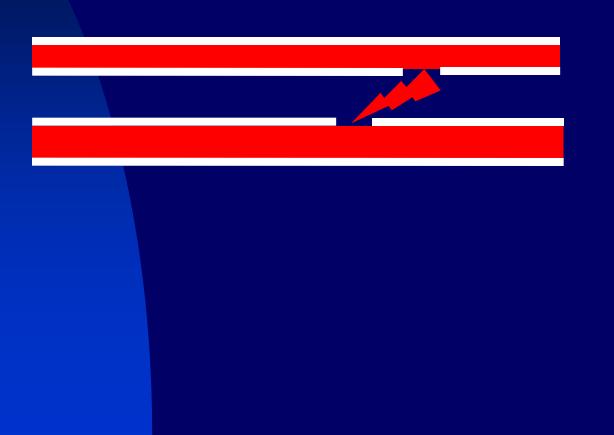
- Classical descriptions of trigeminal neuralgia by Locke in 1677
- Paroxysmal attacks of facial pain that last from a few seconds to a minute
 - Lightening
 - Knife being twisted
 - The worst pain imaginable
- Site often poorly defined unilateral within the trigeminal region
- Trigger
- Elderly

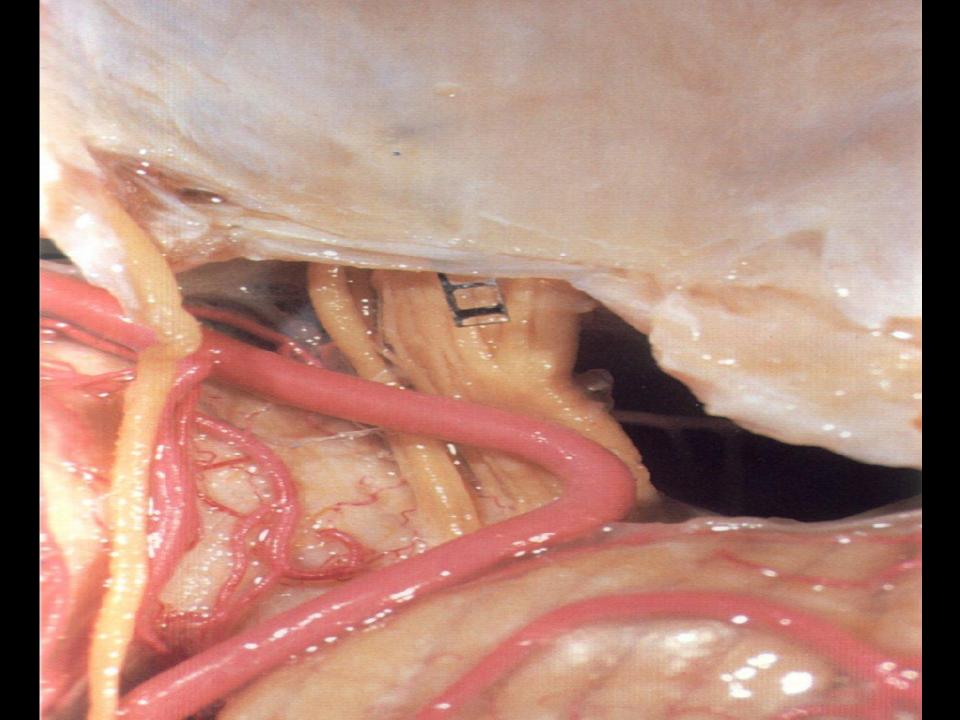




Pathophysiology

Local demyelination of the trigeminal root





Problems with vascular compression theory

 Vascular compression without pain (8% of the population)

Pain without a vessel

Secondary causes

Brain stem pathology

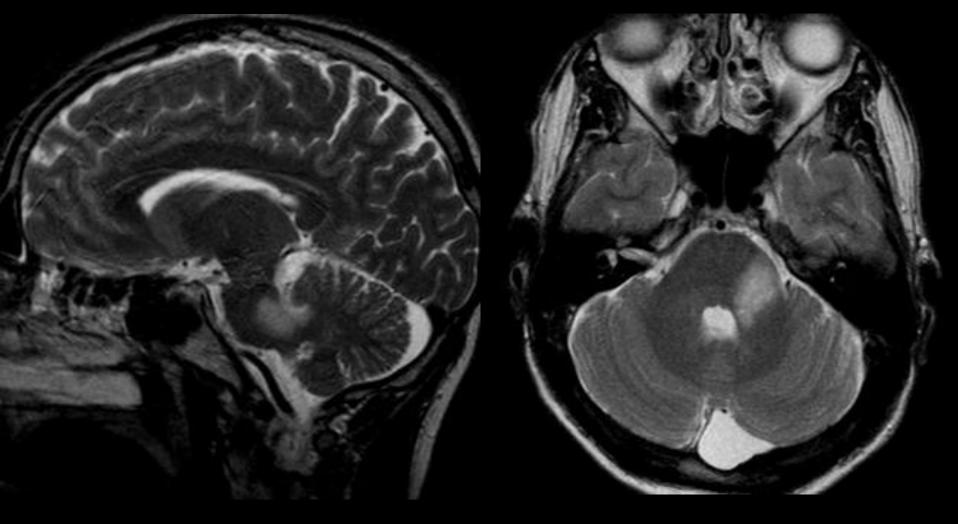
Demyelination

SE/M SLØ Meningioma

POST GAD

FH -6 fee

Multiple Sclerosis



Treatment

- Medication
- Cryoanalgesia/nerve section
- Ganglion injection/balloon compression
- Microvascular surgical decompression
- Gamma Knife Radiosurgery

Medication

Carbamazepine Oxcarbazepine Lamotrigine Gabapentin Phenytoin/valporate Topiromate

Side effects Drug interactions Failure of pain control



Cryoanalgesia/ nerve section

- Recovery and recurrence of the pain
- Fibrosis
- Sensory deficit
- General anaesthesia required to treat the inferior alveolar nerve

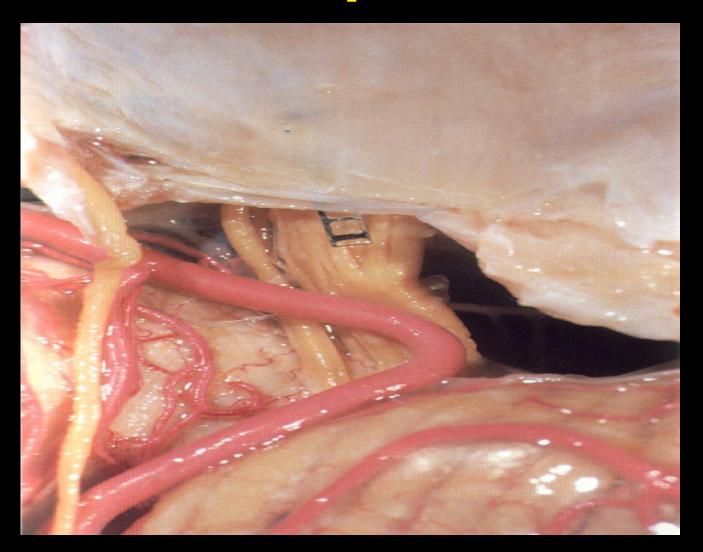
Ganglion injections / balloon compression



The needle is inserted through foramen ovale into the ganglion

- Compression
- Glycerol injection
- Thermo coagulation
- General anaesthesia
- Sensory deficit

Surgical Microvascular Decompression



Outcome after MVD

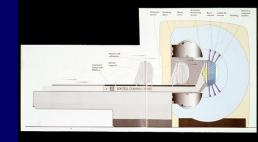


- >80% complete pain relief often life long
- 0.5-1% mortality
- Morbidity CSF leaks, meningitis cranial nerve deficits

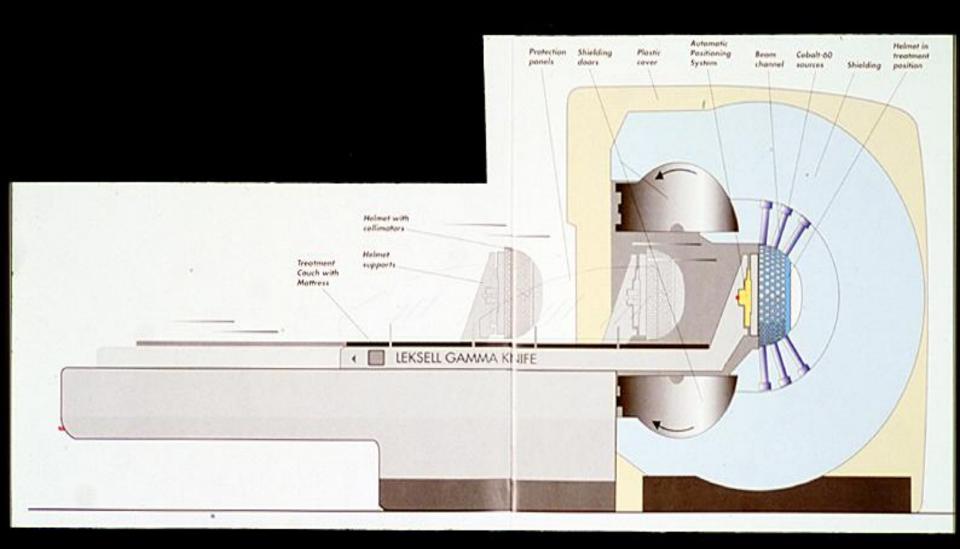
Gamma knife Stereotactic Radiosurgery

201 Co60 (1.2 MeV) isotope sources

 High precision beam delivery system



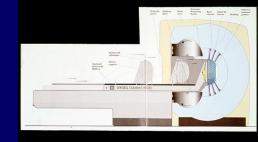
Localisation with stereotactic frame and MRI



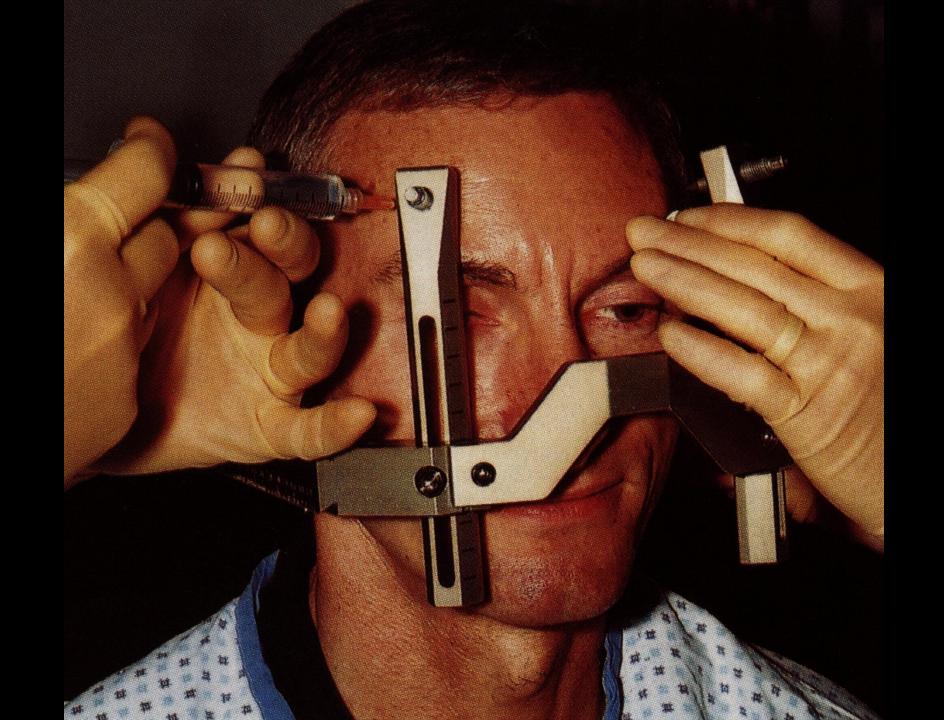
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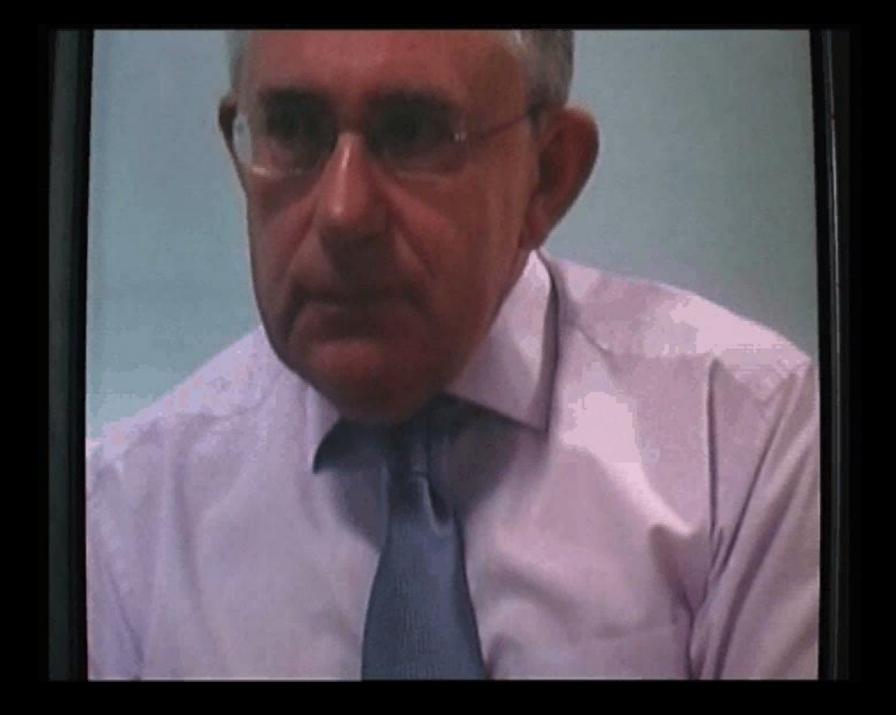


Localisation with stereotactic frame and MRI









Who do you treat with STRS?

Cost implications
Failure of previous treatments
Medical compromised

Design of the Audit

1985 First treatment in Sheffield 1996 First trigeminal neuralgia treatment

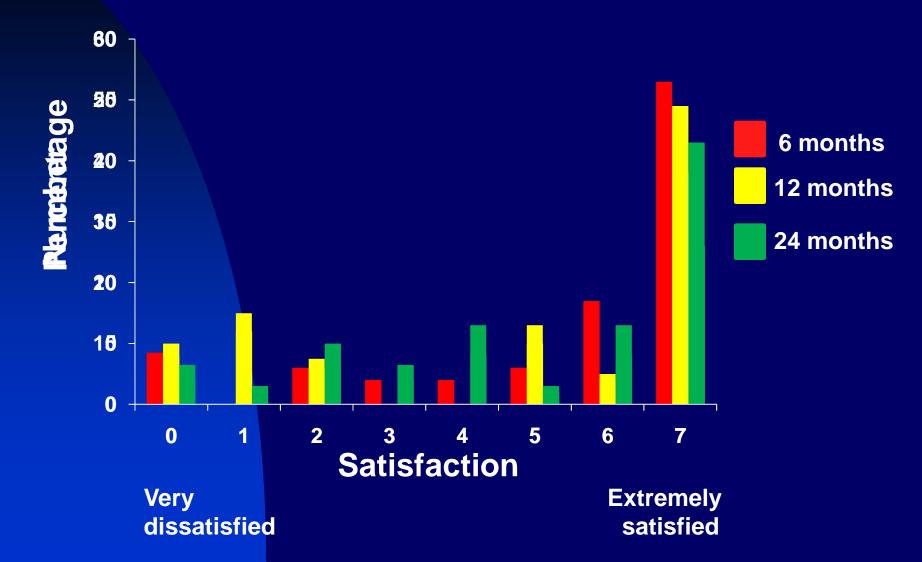
2004 Jan First patient treated as part of this study 2006 Jan Data collection started for this study 2008 September Analysis of Audit

- Data collected prospectively for 79 patients treated with gamma knife radiosurgery.
- Detailed questionnaire covering pain experience; satisfaction; side effects.
- Data captured
 - 49 6 months
 - 42 12 months
 - 30 24 months
- Response rate 81%

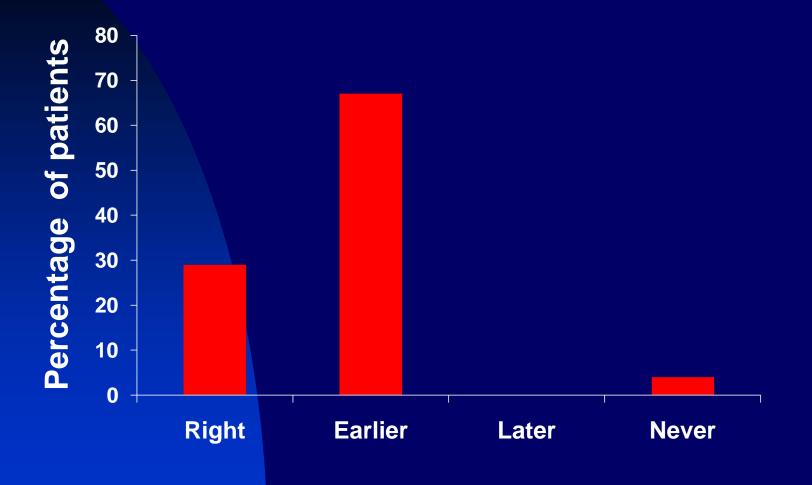
Mean age at time of treatment – 65 years

Trigeminal neuralgia
 Idiopathic - 80%
 Secondary - 20%

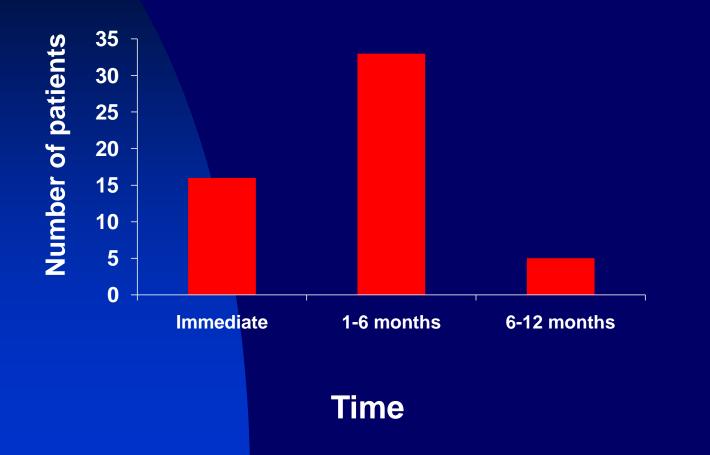
Satisfaction after Stereotactic Radiosurgery



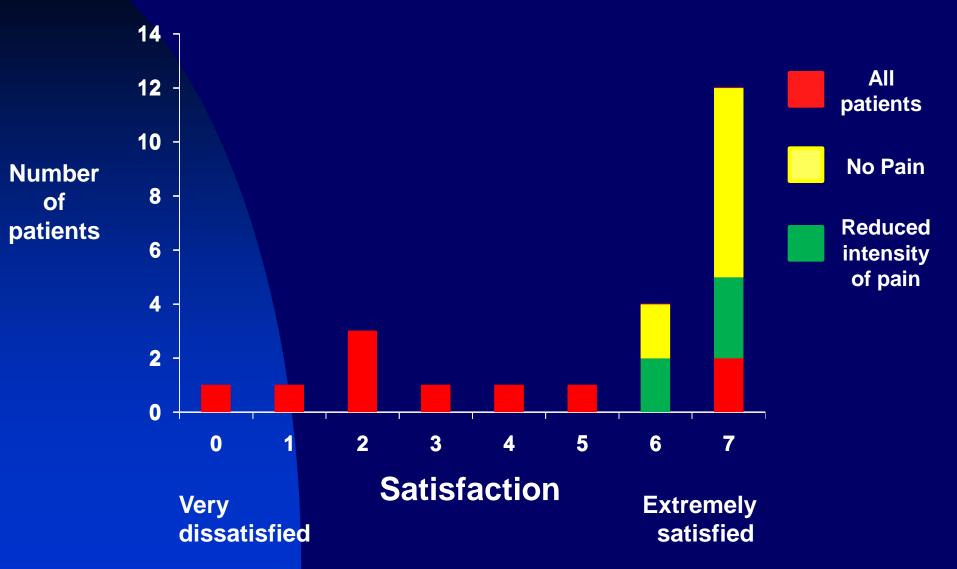
Timing of Surgery



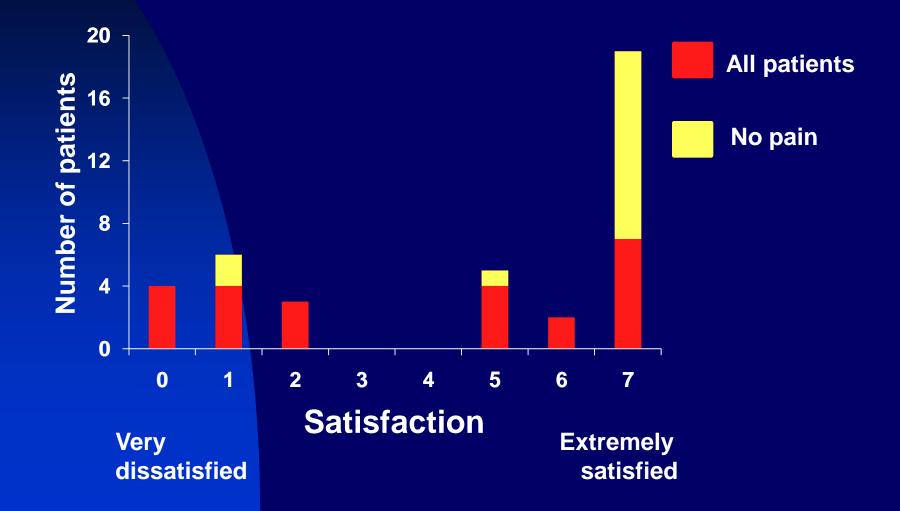
Onset of pain relief

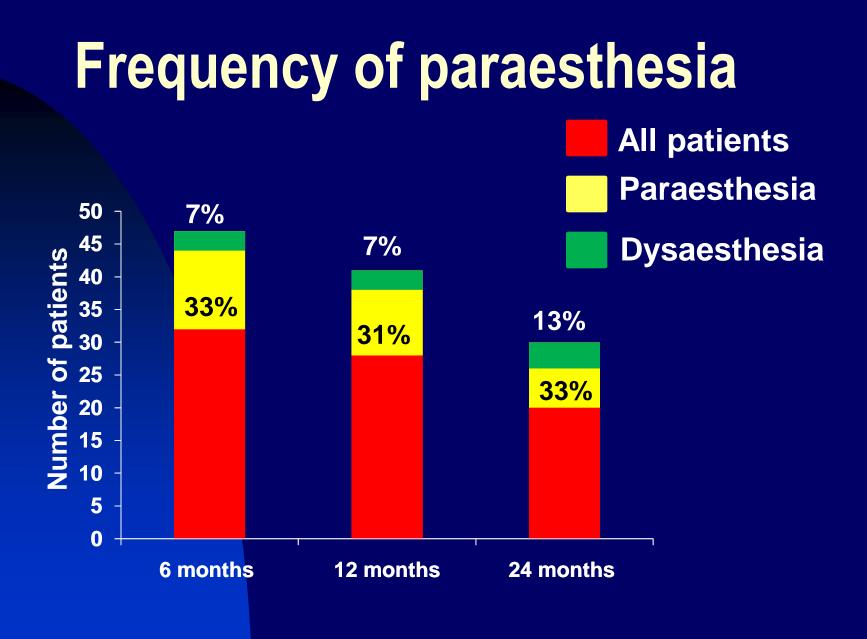


Patient satisfaction six months after Stereotactic Radiosurgery

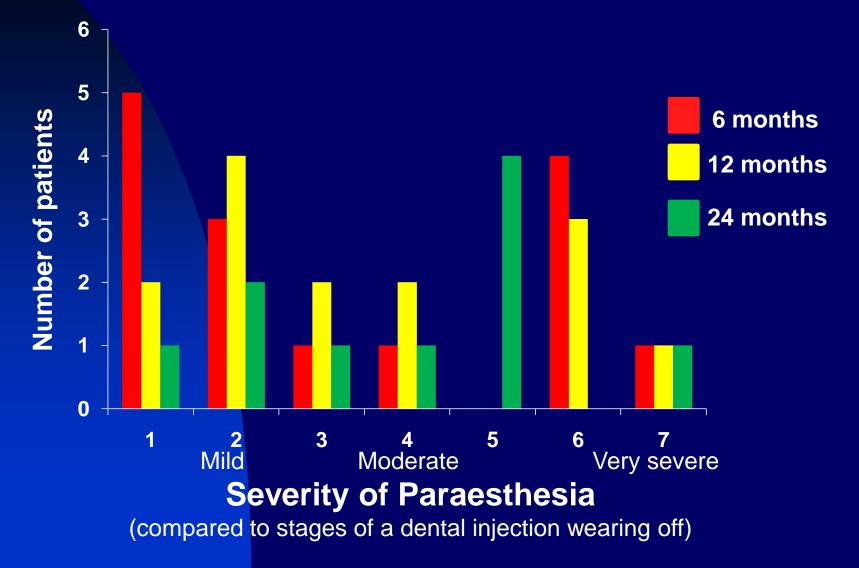


Satisfaction after 12 months

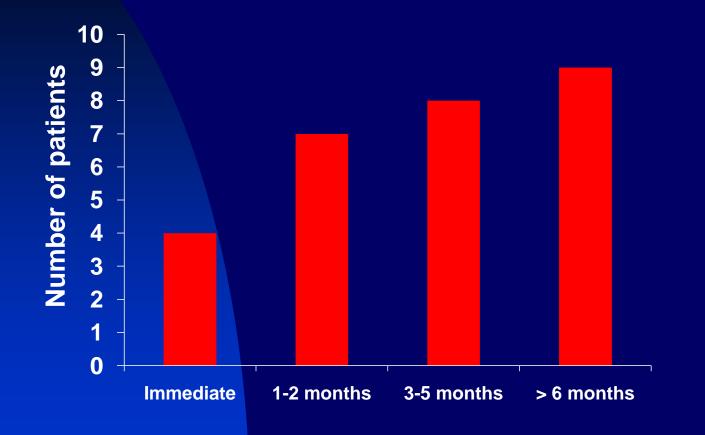




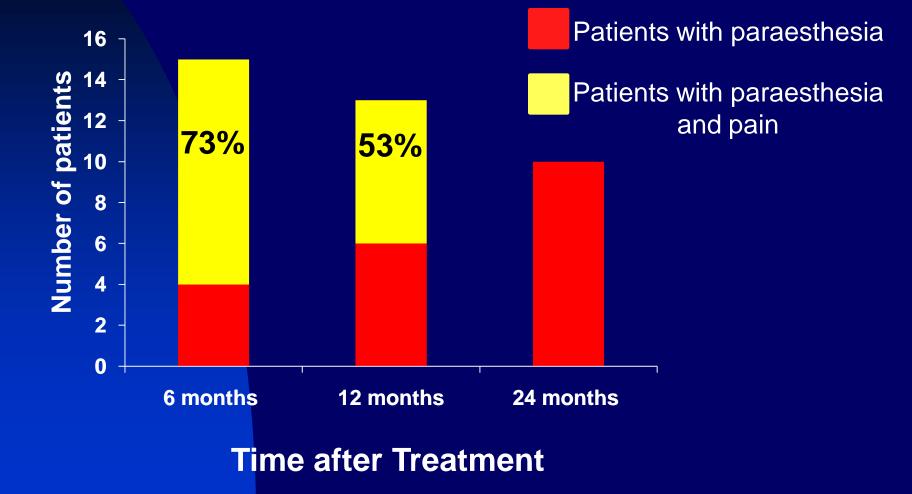
Severity of Paraesthesia



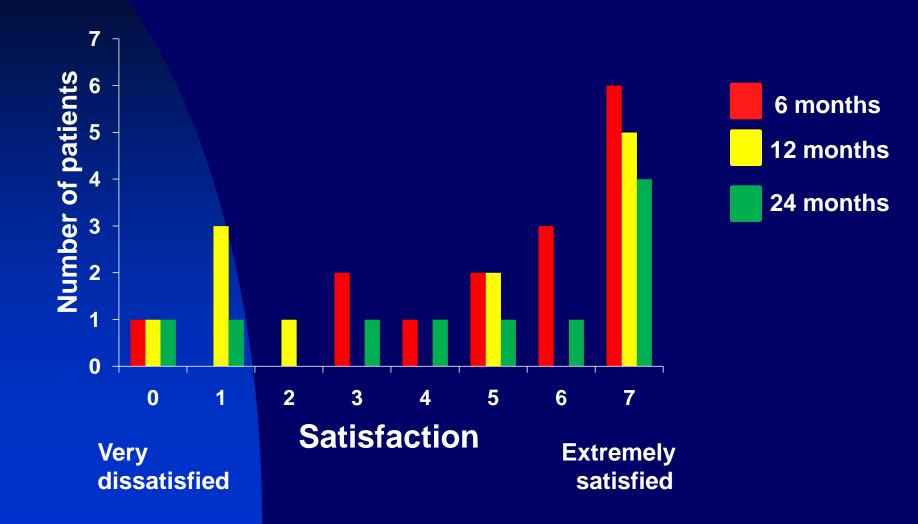
Onset of Paraesthesia



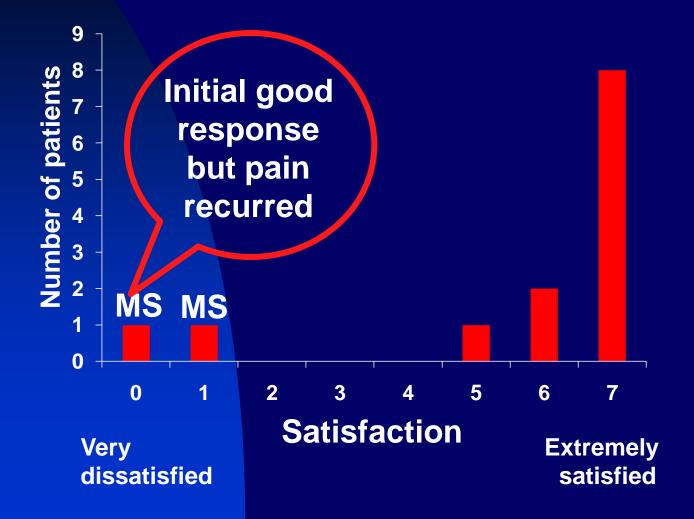
New onset Paraesthesia but still experiencing pain



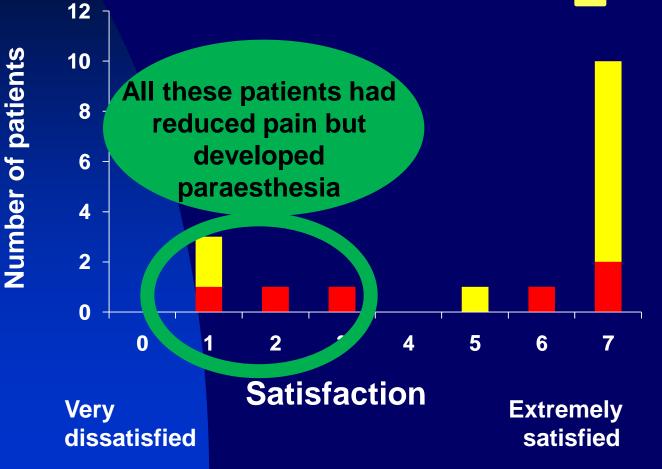
Satisfaction of all patients with Paraesthesia



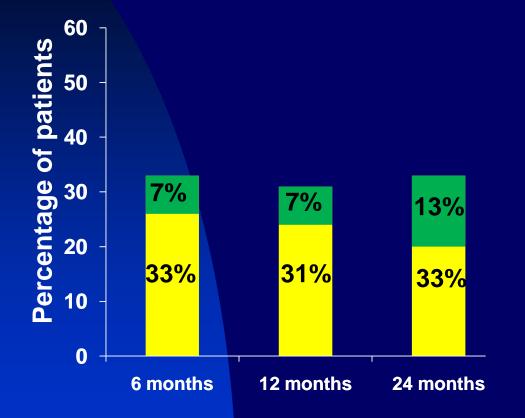
Secondary Trigeminal Neuralgia



Satisfaction after Retreatment All patients No pain

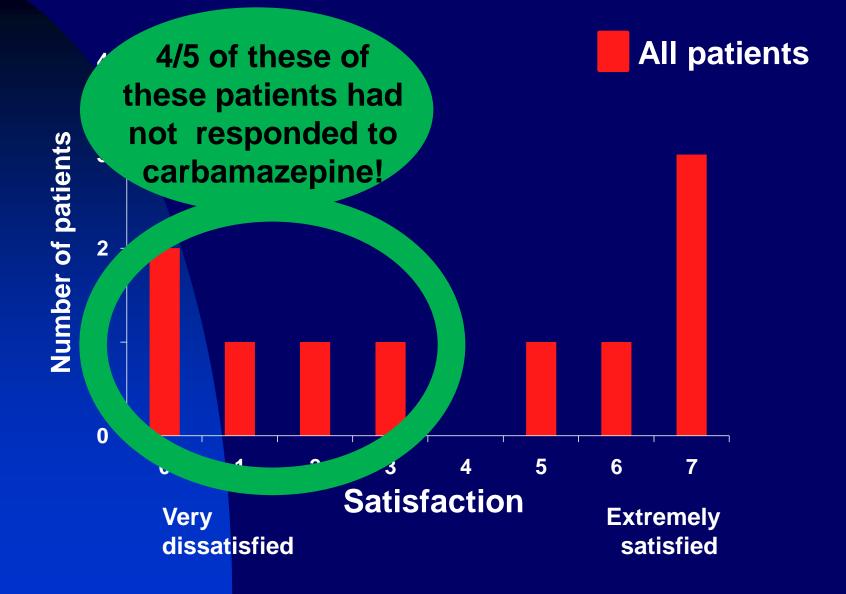


Percentage of patients with Paraesthesia after Retreatment



Paraesthesia Dysaesthesia

Previous MVD





SUNCT / SUNA

Short-lasting
Unilateral
Neuralgiform headaches
Conjunctival injection
Tearing

Duration

Trigger

Severity

Autonomic features

Response to carbamazepine

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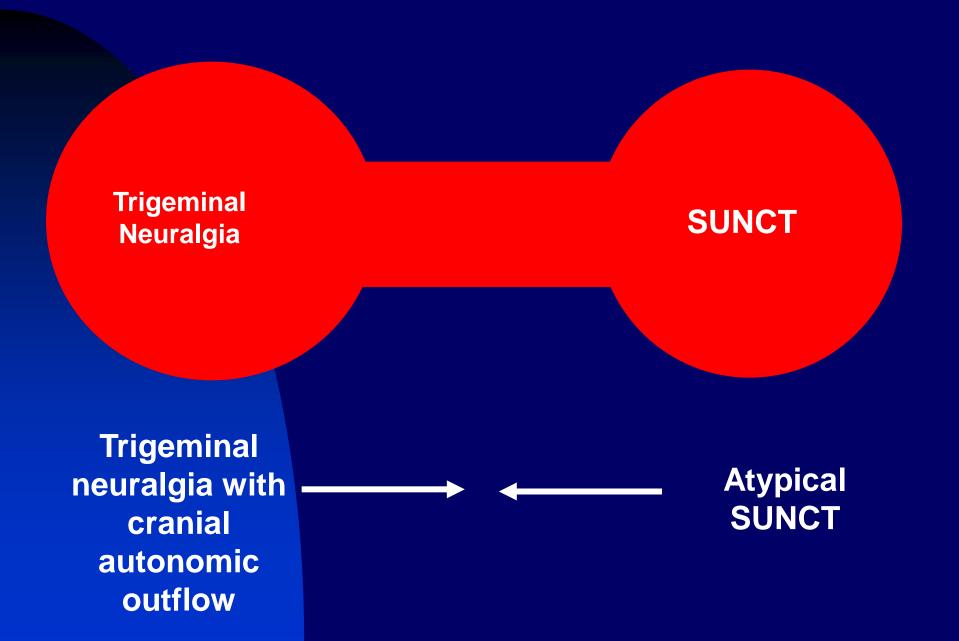
SUNCT or **TN**

HistoryAetiology

 Managementary compression associated with osteogenesis
 Masing transferrence











Trigeminal Neuralgia



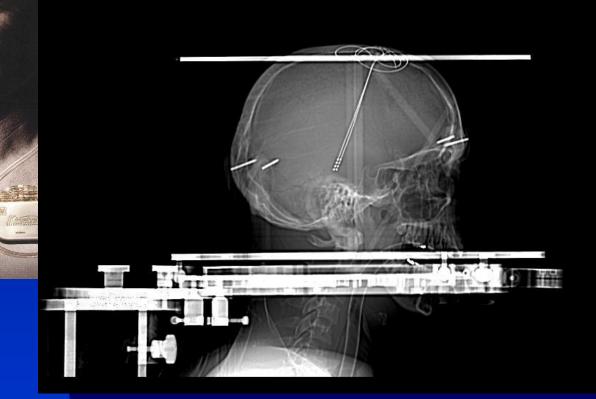


SUNCT

Trigeminal neuralgia with cranial autonomic outflow

Atypical SUNCT

The future.....



Thank you



Cluster Headaches or

Trigeminal Autonomic Cephalalgias

Unilateral pain principally in the ocular, frontal and temporal areas recurring in severe bouts with daily attacks for several months and usually with rhinorrhoea and lacrimation

IASP

 Cluster headaches Paroxysmal hemicrania - SUNCT-Short Unilateral headaches Neuralgiform Conjunctival injection Tearing

- Males (5:1), aged 18-40 years
- Precipitated by alcohol, caffeine and smoking
- Unilateral
- Throbbing, burning, severe pain. May wake patient from their sleep.
- Severity comparable with trigeminal neuralgia
- Associated factors;- lacrimation, rhinorrhoea, conjunctival injection, Horner's syndrome.



Trigger

Response to carbamazepine

Failure of nerve ablation

Severity





Treatment

Oxygen 100% 7-12 litres/minute

 Sumatriptan (5HT1 agonist) subcutaneous Intranasal

Prevention Avoid precipitating factors Verapamil Lithium Prednisolone Methylsergide Gabapentin GON

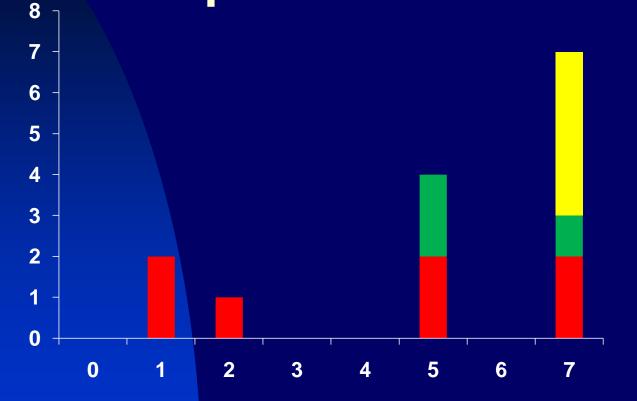
Hypothalamic
Circadian rhythm
Activation on fMRI
Pathology
Sympathetic fibres/internal carotid
Cervical spine







Prospective 12 months satisfaction and pain and reduced intensity of pain



Muscular pain/ Temporomandibular Joint Disorder

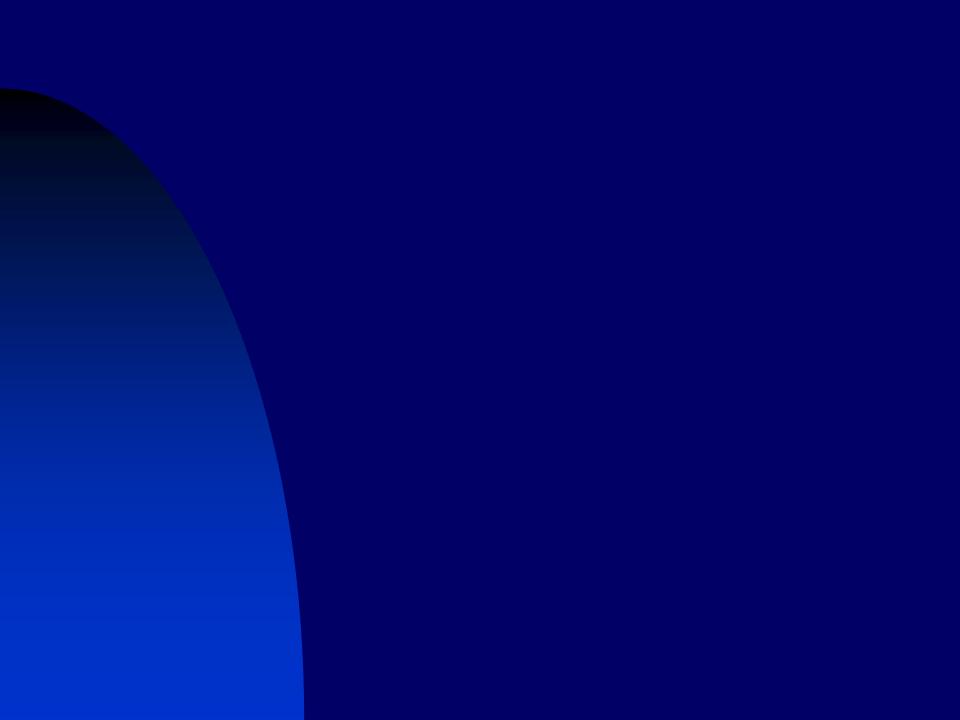
Dull, constant, aching pain

- Made worse by eating
- Site diffuse often in the cheek with radiation
- Feels swollen











Pattern of the pain

Continuous

- Dentoalveolar
- Atypical facial pain
- Burning mouth syndrome
- Temporal arteritis
- Recurring, regular
 - Cluster headache
- Recurring, irregular
 - Dentoalveolar
 - Chronic tension headache

Paroxysmal

Trigeminal neuralgia



