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Sphenopalatine Ganglion Block: A Revolutionary Treatment for Postdural Puncture Headaches

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Objectives

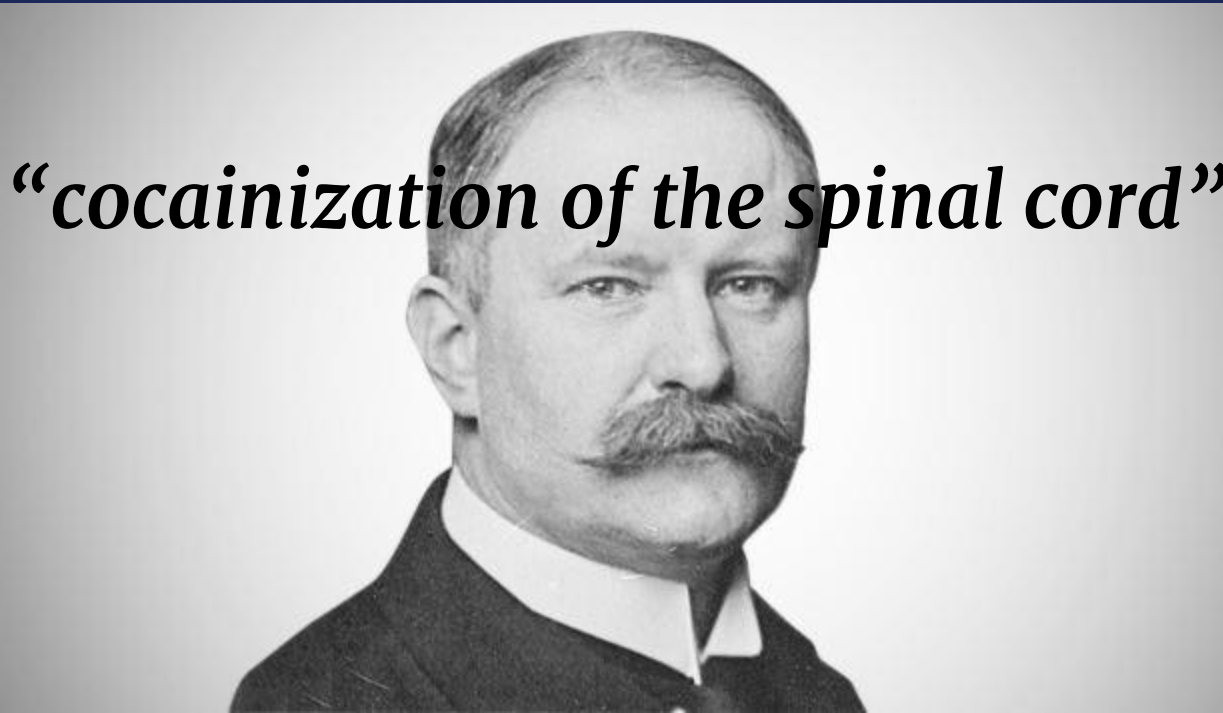
- Describe postdural puncture headache (PDPH)
- Discuss the available treatments for PDPH
- Introduce sphenopalatine ganglion block (SPG) and describe proposed mechanism of action
- Explain how to perform SPG block
- Discuss the risks, benefits, relative contraindications associated with the SPG block
- Compare the efficacy of Epidural Blood Patch to SPG Block
- Discuss clinical scenarios

Postdural puncture headache (PDPH)

- Complication of neuraxial technique
- Incidence low with smaller diameter, noncutting, pencil-point spinal needles
- Characteristic frontal or occipital headache
- N/V, blurred vision, tinnitus, vertigo
- Worsens in upright position, relieved by lying supine
- Symptoms begin within 3 days of procedure (66% within first 48 hours)



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Postdural Puncture Headache (PDPH)

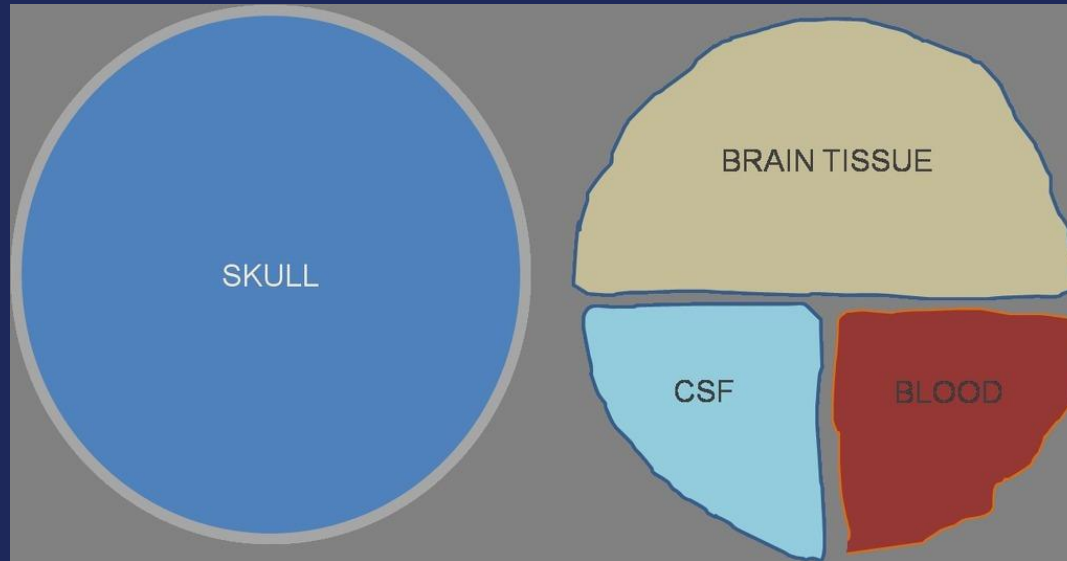
Decrease in CSF → Intracranial hypotension

1. Loss of hydraulic support, stretching of tentorium
2. Cerebral autoregulation and adenosine induced cerebral vasodilation



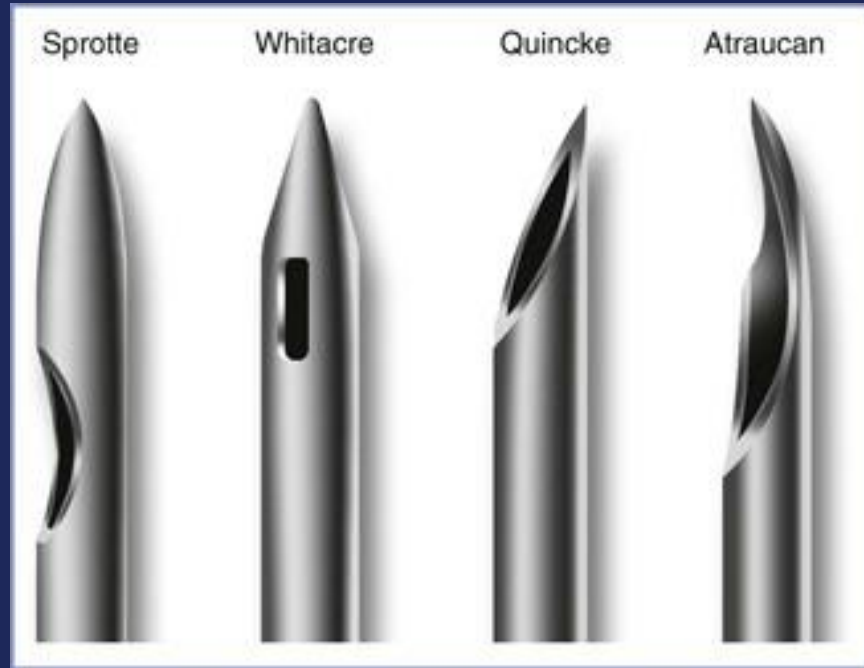
Postdural Puncture Headache (PDPH)

Monro-Kellie Hypothesis



Factors that increase PDPH Incidence

- Female
- Pregnancy
- Young age
- Hx of PDPH
- Larger needle size



Factors that increase PDPH Incidence

- Female
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- Young age
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- Hx of PDPH

Factors that do not increase PDPH Incidence

- Timing of ambulation
- Smoking
- Obesity?
- Loss of resistance technique

PDPH Treatment

- Supine
- Hydration
- Methylxanthines (caffeine)
- NSAIDS/analgesics
- Gabapentin, hydrocortisone

PDPH Treatment

Neuraxial

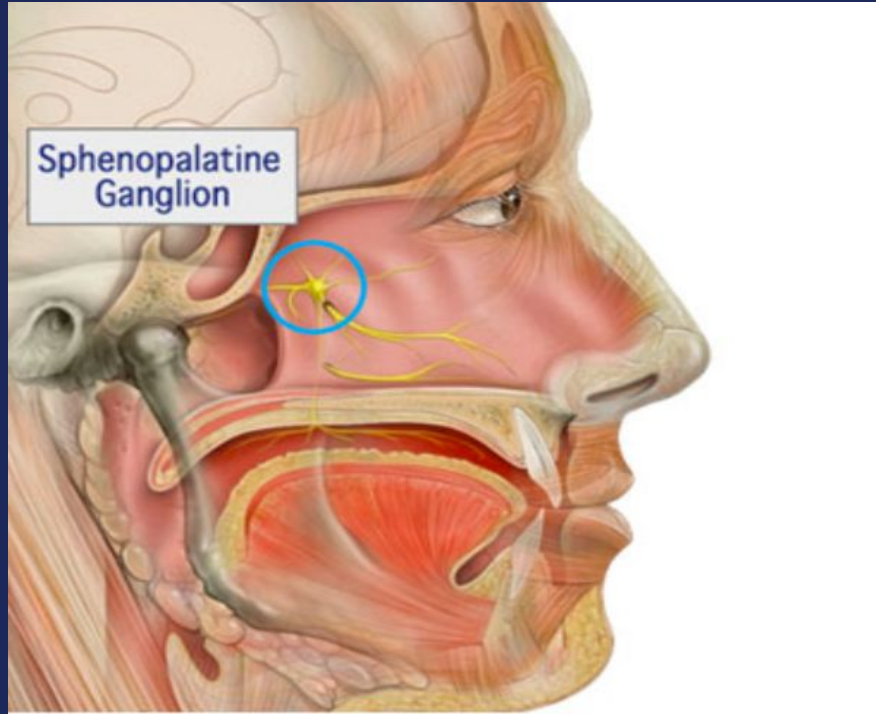
- Saline
- Morphine
- Catheters
- Epidural fibrin glue

PDPH Treatment

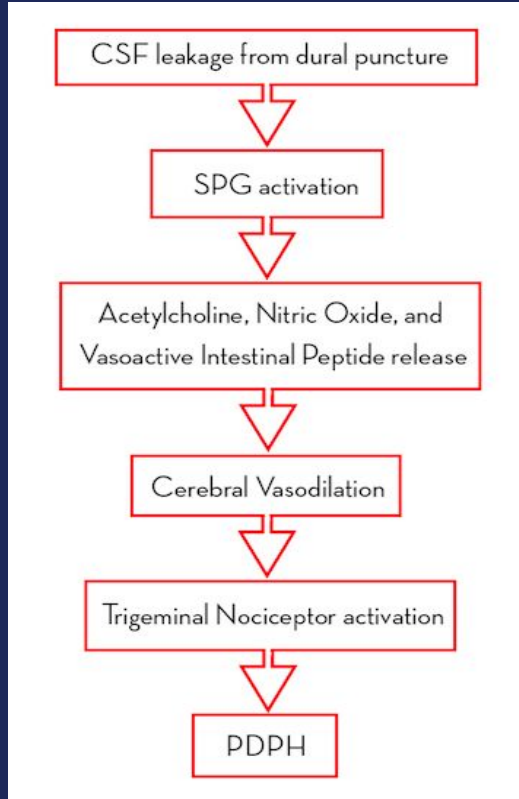
Definitive therapy: epidural blood patch

- 90% initial improvement
- Persistent resolution in 61-75% of cases
- May repeat 24-48 hours if first is ineffective
- Prophylactic blood patch not efficacious

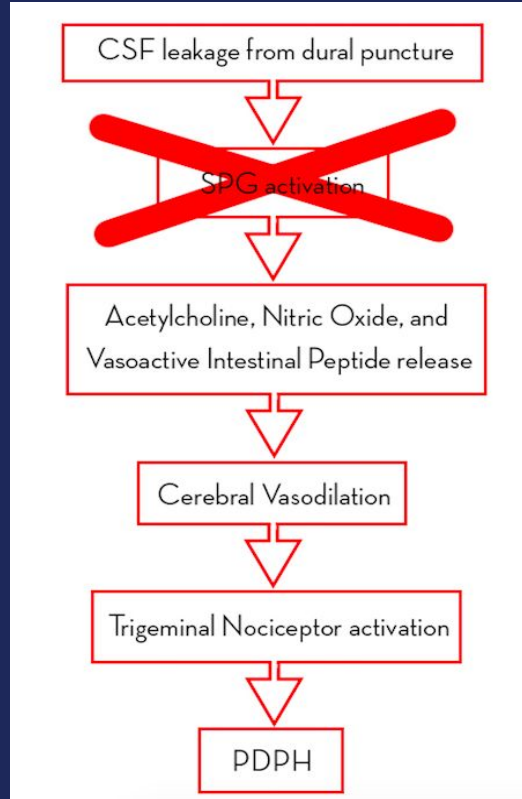
What is the Sphenopalatine Ganglion (SPG)?



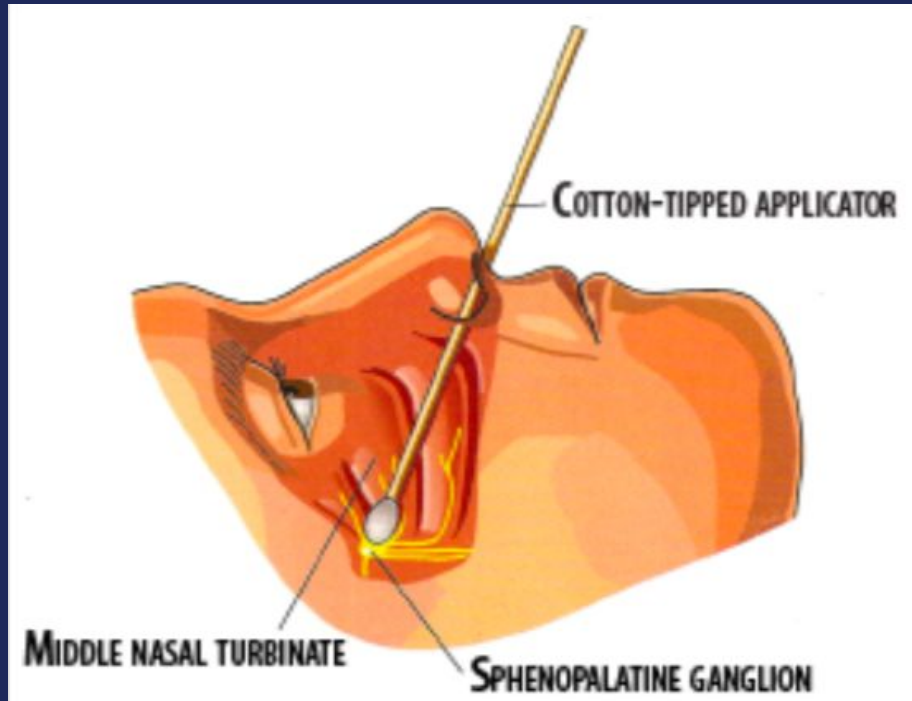
Block Mechanism



Block Mechanism



How do you perform the SPG?



SPGB tools and post-block monitoring

- Tools
 - 4% Lidocaine, 0.5-1.5mL
 - 10cm cotton-tipped applicator
- Monitoring
 - 40-60 minutes post-treatment
 - Epistaxis
 - Worsening of headache
 - Fever
 - Facial numbness

Benefits, Risks, Contraindications

Benefits

- Quick relief
- Faster hospital discharge
- No reported post-treatment complications
- Easy to perform
- Inexpensive

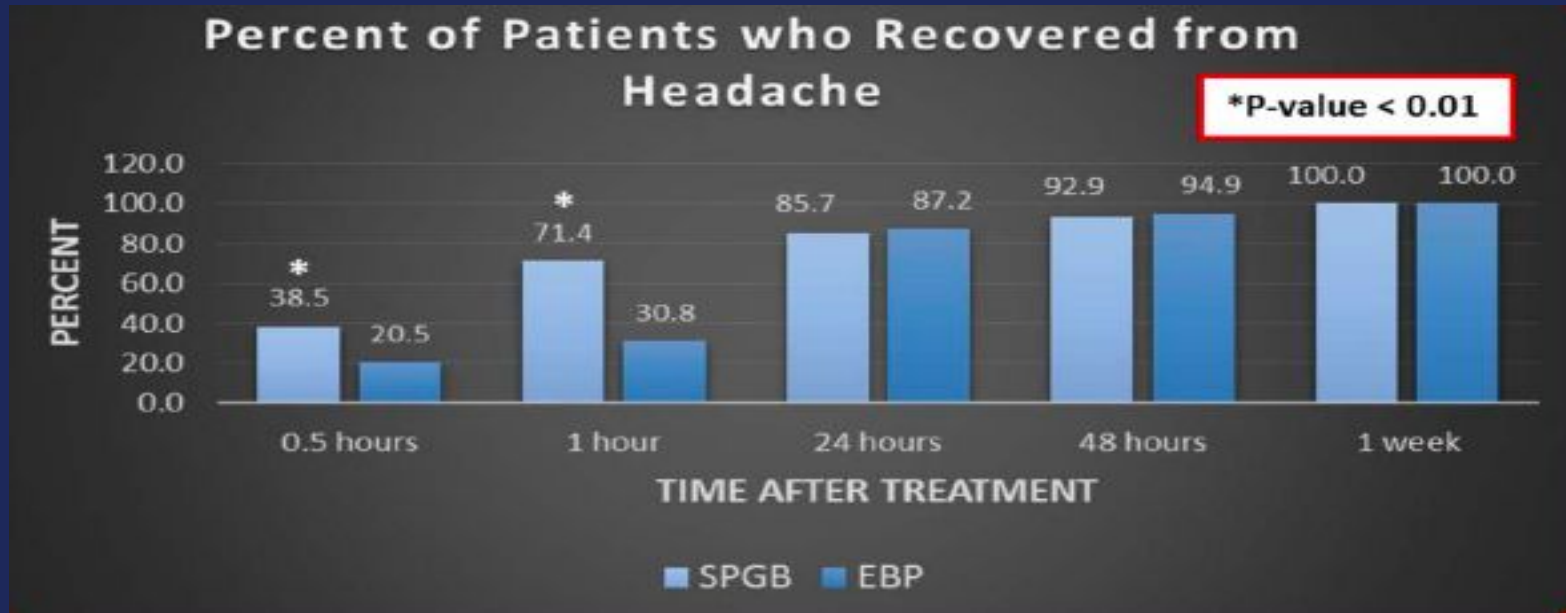
Risks

- Potential for nasopharyngeal bleeding
- Temporary patient discomfort

Relative Contraindications

- Facial malignancies, distorted facial or nasopharyngeal anatomy
- Thrombocytopenia and coagulopathy*

Epidural Blood Patch vs. SPGB



Cohen, S., Levin, D., Mellender, S., Zhao, R., Patel, P., Grubb, W., & Kiss, G. (2018). Topical Sphenopalatine Ganglion Block Compared With Epidural Blood Patch for Postdural Puncture Headache Management in Postpartum Patients. *Regional Anesthesia and Pain Medicine*, 43(8), 1-5. doi:10.1097/aap.0000000000000840

Clinical Scenarios

- University of Wisconsin: Successful PDPH relief for thrombocytopenic AML patient with SPG (2017)
- Portugal: Cardoso et. al describes relief for 41yo F with PDPH within 5 minutes of block treatment (2017)
- Korea: Nair & Rayani report success in 3 out of 3 patients with SPG (2017)
- RWJUH New Jersey: 11 out of 13 SPG recipients report relief (2011, 2018)
- Atlanticare Regional Medical Center: 2 out of 3 SPG recipients report relief (2018)

Questions?



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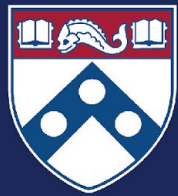
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