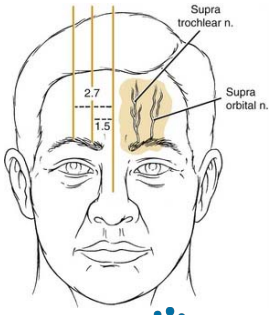
FRONTAL SINUS TREPHINATION

- Important anatomy
  - Supraorbital nerve (V1)
  - Supratrochlear nerve
- Common indications
  - Mucoceles
  - Acute complicated frontal sinusitis
  - Lateral recess pathology
  - Isolated Type IV frontal cell
  - In combination with Draf II and III approaches



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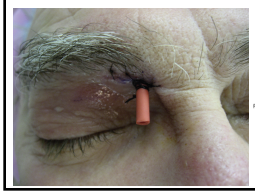
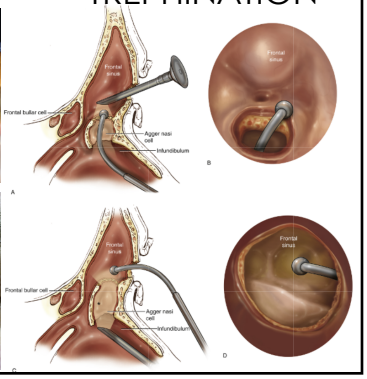
FRONTAL SINUS TREPHINATION

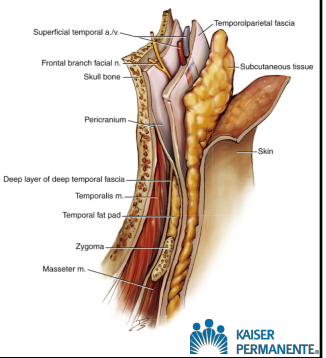




EXTERNAL FRONTOETHMOIDECTOMY

- **Lynch**: ethmoidectomy, +/- MT resection, removal floor frontal sinus
- **Reidel**: removal anterior wall & floor frontal sinus
- **Killian**: ethmoidectomy, removal anterior wall & floor frontal sinus, +/- MT resection, preservation of 1 cm of supraorbital rim
- **Lothrop**: ethmoidectomy, +/- MT resection, removal of inter frontal septum & superior septum

OSTEOPLASTIC FLAP

- Important anatomy
  - Layers of SCALP
  - Temporoparietal fascia
  - Frontal branch of facial nerve
  - Superficial layer of deep temporal fascia
- Common indications
  - Narrow nasal airway
  - Small frontal sinus
  - Deep nasion
  - Heavy thick nasofrontal break
  - Frontal sinus fractures
  - Extensive skull base pathology



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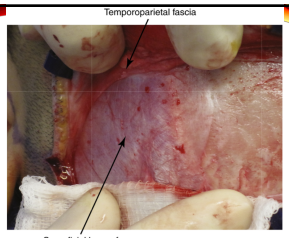
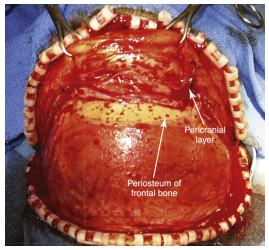
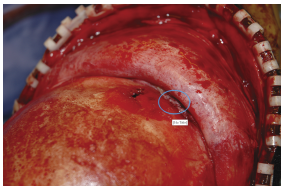
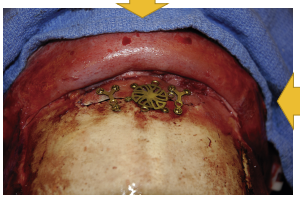






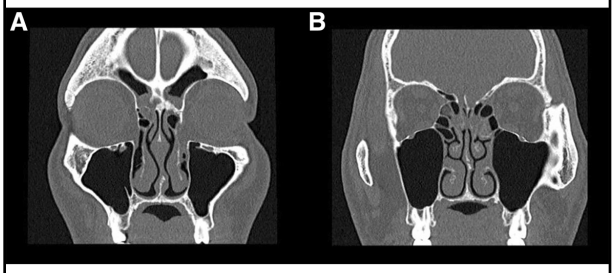

INDICATIONS

Table 2
Summary of clinical indications and contraindications for various approaches to the frontal sinus

Procedure	Indication	Contraindication
Frontal sinus balloon dilatation	Mild to moderate chronic frontal sinusitis	Dehiscence of the skull base, posterior table of frontal sinus, or orbit
Draf type I	Primary treatment of asymptomatic, mild chronic frontal sinusitis refractory to medical management	—
Draf type IIa	1. Primary acute or chronic frontal sinusitis 2. Failed Draf type I or balloon sinusotomy 3. Medially located benign tumors and mucoceles	—
Draf type IIb	1. All indications of Draf IIa 2. CRS with osteitic middle turbinate or frontal intersinus septal cell 3. Draf IIa with resulting ostia <5 mm	—
Draf type III/EMLP	1. Failed multiple surgical interventions (either endoscopic or open) 2. Primary CRS cases with polyposis, asthma, aspirin sensitivity, immunocompromised states, ciliary motility disorders 3. Unobliterated frontal sinus with medially located mucocele 4. Benign and select malignant tumors	1. Anterior-posterior dimension of nasal root to anterior cranial fossa <5 mm 2. Nasal beak >1 cm² 3. Hypoplastic frontal sinus or frontal recess
Transeptal frontal sinusotomy	All indications for Draf III but particularly useful for cases in which the frontal recess cannot be cannulated endonasally	Anterior-posterior dimension of nasal root to anterior cranial fossa <1.2 cm²
MMLP	Unilateral frontal CRS with inaccessible ipsilateral frontal sinus but accessible contralateral frontal sinus	—
MSLP	Unilateral frontal CRS with cells that cross midline and a normal contralateral frontal sinus	—
Frontal trephination	Complicated acute frontal sinusitis	—
Frontal trephination with endonasal approach	1. Laterally based mucoceles or frontal cells 2. Inability to easily identify frontal recess endonasally 3. Complicated acute frontal sinusitis (Draf I-III)	—
Osteoplastic flap	1. Failed multiple surgical interventions (either endoscopic or open) 2. Laterally based pathology (mucoceles, osteomas, tumors)	—

CASE 1

36 yo M, CRS without NP, persistent symptoms after maximal medical therapy. No prior sinus surgeries.



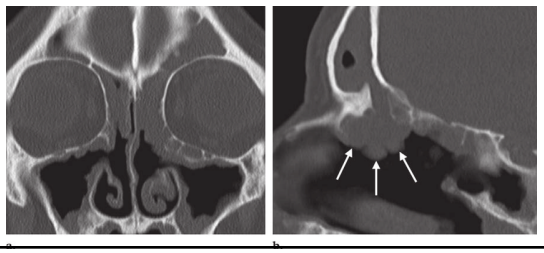
CASE 1

- Osteoplastic Flap
- External Frontoethmoidectomy
- Trephination
- Draf III Frontal Sinusotomy
- Draf II Frontal Sinusotomy
- Draf I Frontal Sinusotomy
- Balloon Sinuplasty
- Nothing

CASE 2

59 yo F, CRS with NP, recurrent polyps and persistent symptoms despite multiple courses of corticosteroids.

Prior ESS 10 years ago.



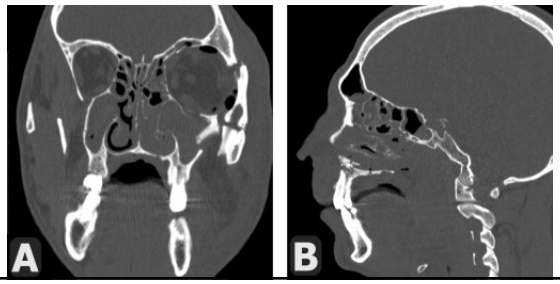
CASE 2

- Osteoplastic Flap
- External Frontoethmoidectomy
- Trephination
- Draf III Frontal Sinusotomy
- Draf II Frontal Sinusotomy
- Draf I Frontal Sinusotomy
- Balloon Sinuplasty
- Nothing

CASE 3

45 yo F, CRS with nasal polyps, asthma, aspirin-sensitivity.

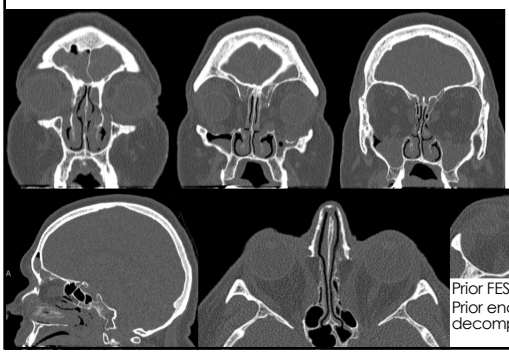
She has persistent symptoms after medical therapy. History of prior septoplasty, but no sinus surgery.



CASE 3

- Osteoplastic Flap
- External Frontoethmoidectomy
- Trephination
- Draf III Frontal Sinusotomy
- Draf II Frontal Sinusotomy
- Draf I Frontal Sinusotomy
- Balloon Sinuplasty
- Nothing

CASE 4



62yo F
CRS without NP

Graves disease

Frontal pain & pressure

Prior FESS
Prior endo orbital decompression

CASE 4

- Osteoplastic Flap
- External Frontoethmoidectomy
- Trephination
- Draf III Frontal Sinusotomy
- Draf II Frontal Sinusotomy
- Draf I Frontal Sinusotomy
- Balloon Sinuplasty
- Nothing

SUMMARY

- Frontal sinus cells along the infundibulum, ostium, and recess can narrow the frontal outflow tract. Traditional and updated nomenclature can be used to describe these cells.
- A stepwise approach to frontal sinus surgery should be employed based on pathology, previous intervention, and surgeon's experience.
- Draf III / EMLP is the maximum endoscopic frontal approach and is useful for frontal sinus tumors, mucoceles, and recalcitrant frontal sinusitis.
- Open/external frontal sinus surgery should be considered for pathology with significant osteocutaneous and/or intracranial involvement, or unfavorable anatomy.

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THANK YOU
AND
STAY SAFE!

Questions & Comments

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