FRONTAL SINUS APPROACH

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INTRODUCTION

- 1750
- 1884 – Alexander Ogstun
  - Trephination
  - Dilatated frontal recess
  - Curetted mucosa
  - Placement of “stent”
  - Ogstun-Luc procedure

INTRODUCTION

- 1898 – Lothrop

Lothrop H. Anatomy and surgery of the frontal sinus and anterior ethmoidal cells. 1898
INTRODUCTION

- Endoscopic frontal sinus surgery
- Last frontier
  - Difficult
  - Risky
  - Complications

Indiana Jones is a trademark of Universal Studios, USA

INTRODUCTION

- Uncapping the egg – H. Stammberger
- Building the blocks – P.J. Wormald
- Open – R. Meyers
- Draf concept – W. Draf
- VERTICAL BAR

INSTRUMENTS

DRAINAGE - CT

Stammberger H. 1988
ANATOMICAL LANDMARKS

- Middle turbinate
- Uncinate process
- Agger nasi
- Ethmoid bulla
- Orbit
- Anterior ethmoidal artery

AGGER NASI FLAP

Dissection
CT images show a tier of two type 2 frontal cells (arrows) sitting directly atop an agger nasi cell (x).
The type 3 cell extends superiorly from the frontal recess through the frontal ostium and into the frontal sinus.

Sagittal CT image obtained through the frontal recess shows a type 3 frontal cell (white arrow) sitting above an agger nasi cell (asterisk) and extending superiorly into the frontal sinus. Also note the frontal bullar cell (black arrow), which pneumatizes along the skull base from the posterior frontal recess into the frontal sinus.

The type 4 cell does not abut the agger nasi cell.

Supraorbital ethmoid cell
The purpose of this investigation was to determine whether BCD within the frontal recess is associated with reproducible patterns of fracture in bony lamellae, to characterize changes between pre- and postintervention measurements of the frontal sinus outflow tract, and to compare the degree of change seen with endoscopic Draf I dissection.

METHODS: Eight cadaver heads underwent pre- and postintervention endoscopic visualization and computed tomography (CT) of the frontal recess and frontal sinus outflow tract. Frontal recesses were assigned for either BCD or Draf I dissection.

RESULTS: Inter-rater reliability was strong for all measures (r = 0.77; p < 0.001). The sagittal and coronal dimensions of the frontal sinus outflow tract increased significantly after BCD and Draf I dissection (p < 0.028). Mean change in the sagittal dimension was significantly less after BCD compared with Draf I dissection (1.9 ± 0.8 mm versus 4.0 ± 1.2 mm; p = 0.018). The anterior face of the ethmoid bulla was the most frequently fractured lamella after BCD (58%).

CONCLUSION: The sagittal and coronal dimensions of the frontal sinus outflow tract increased significantly after BCD and Draf I dissection. A significantly greater change in dimensions of the frontal sinus outflow tract is observed after Draf I dissection compared with BCD. No orbital or skull base injury was noted with either technique.
CASE 1
Fem, 27 y/o
3 months post-operative

CASE 2
Male, 18 y/o – cerebral palsy


CASE 2

CASE 3

CASE 3

CASE 3

DRAF II

Female, 38 years old

Summary

- Frontal sinus surgery
- T.E.S.S.
- Anatomical landmarks
  - Uncinate process
  - Agger nasi
  - Ethmoid bulla
  - Anterior ethmoidal artery
- N.O.T.E.S. - Flexible