



Treatment Options for Chronic Sinusitis

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Disclosures

- I have no financial relationship with any of the companies or products discussed in this presentation.

Sinusitis: Definition

- Chronic Sinusitis
 - Symptoms for more than 12 weeks
 - Nasal congestion
 - Post nasal drip
 - Facial pressure/fullness/headache
 - Decreased sense of smell
 - Evidence of inflammation on exam or imaging
- Recurrent Acute Sinusitis
 - More than four acute sinus infections per year
 - Patients feel fine in between episodes
 - May have normal exam and imaging between episodes

Sinusitis: Overview

Statistics

- 37 million afflicted in the US alone
- \$8.6 billion in healthcare costs
- Over 58 million days of restricted activity/year
- Accounts for 1 in 5 antibiotic Rx
- 525,000 sinus surgeries per year in the US

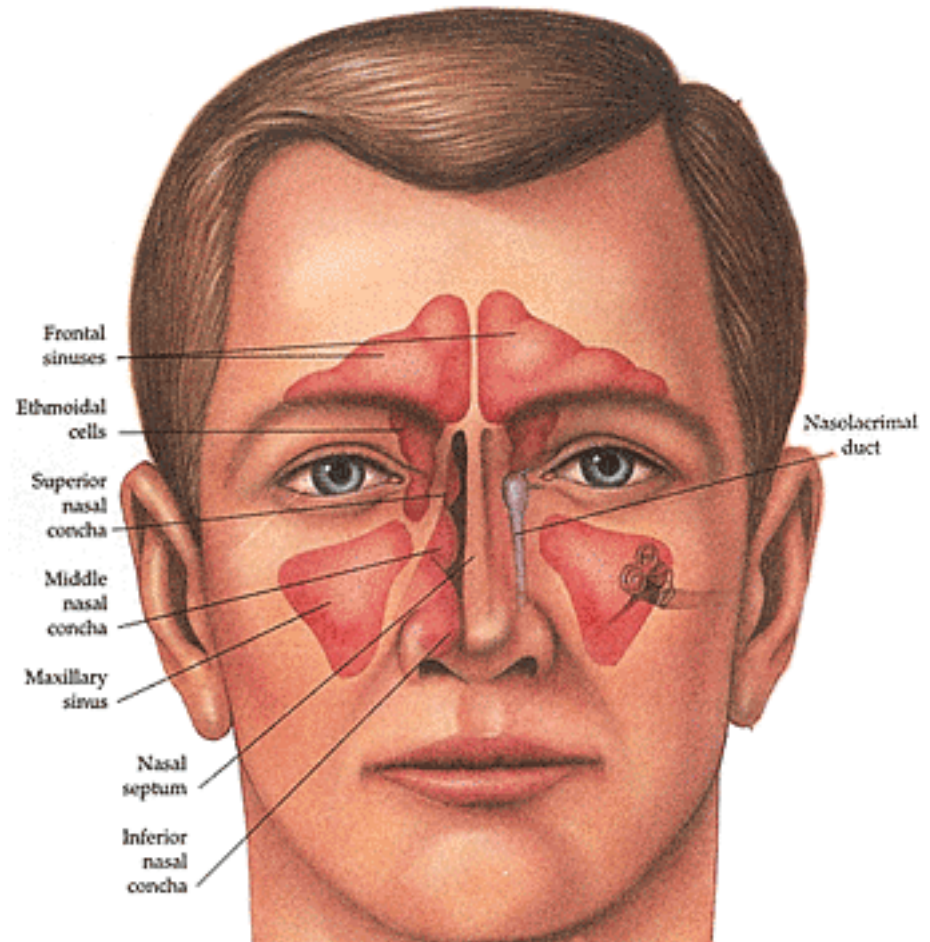
Common Symptoms

- Purulent drainage
- Facial pressure and fullness
- Nasal congestion
- Fatigue
- Facial or dental pain
- Headache

- Anatomy
- Historical Context
- Progression of Surgical Techniques

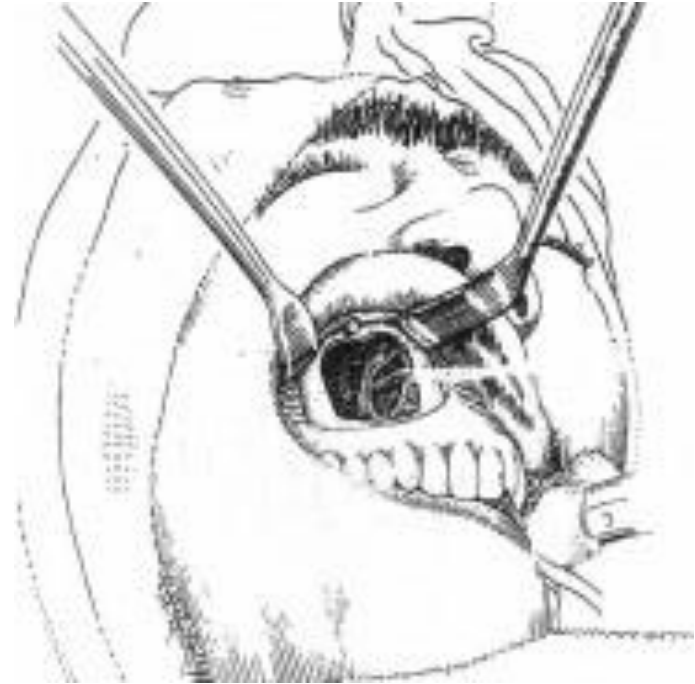
Anatomy

- 8 paired sinuses
- Development continues into adulthood
- Significant variability
- Drainage pathways
 - Anterior (Front)
 - Posterior (Back)



History

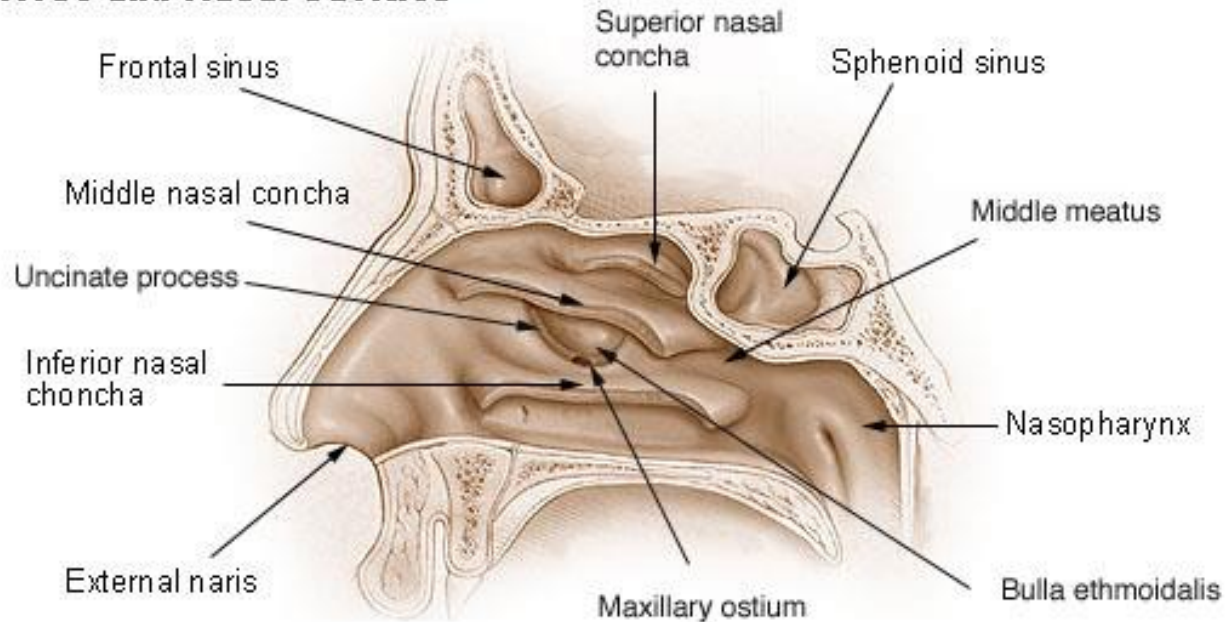
- Early sinus surgery was done through incisions in the skin or under the lip
- Today this approach is reserved for more complicated cases
 - Trauma
 - Tumors
 - Severe infections



History

- Technical advances
 - Use of flexible and rigid endoscopes – 1950s/60s

Nose and Nasal Cavities



Functional Endoscopic Sinus Surgery

- Acronym “FESS” - Dr. David Kennedy in 1985
- Telescopes/cameras looking through the nose - less invasive than making incisions in the skin
- Goal of “FESS” is to create openings into the sinuses
 - Incorporate natural drainage pathways
 - Remove inflammatory tissue
 - Preserve normal landmarks, mucosa (lining), and functional structures (turbinates) as much as possible

Functional Endoscopic Sinus Surgery

- Technological advances
 - High definition cameras
 - Refinement of surgical tools
- Image guided surgery
 - Mapping a CT scan to instruments used during surgery
- Dramatic changes over the past 10 – 15 years
- **But** – still a surgery in the operating room with general anesthesia and recovery (7 days)



Sinus Balloon Dilation

- Part of the overall evolution in medicine toward less-invasive approaches
- FDA approved in 2005
- Balloon tool has expanded ability to treat sinus disease safely, effectively, and less invasively
- Able to care for patients in the office setting, using local anesthesia
- Lower risks, less pain, faster recovery

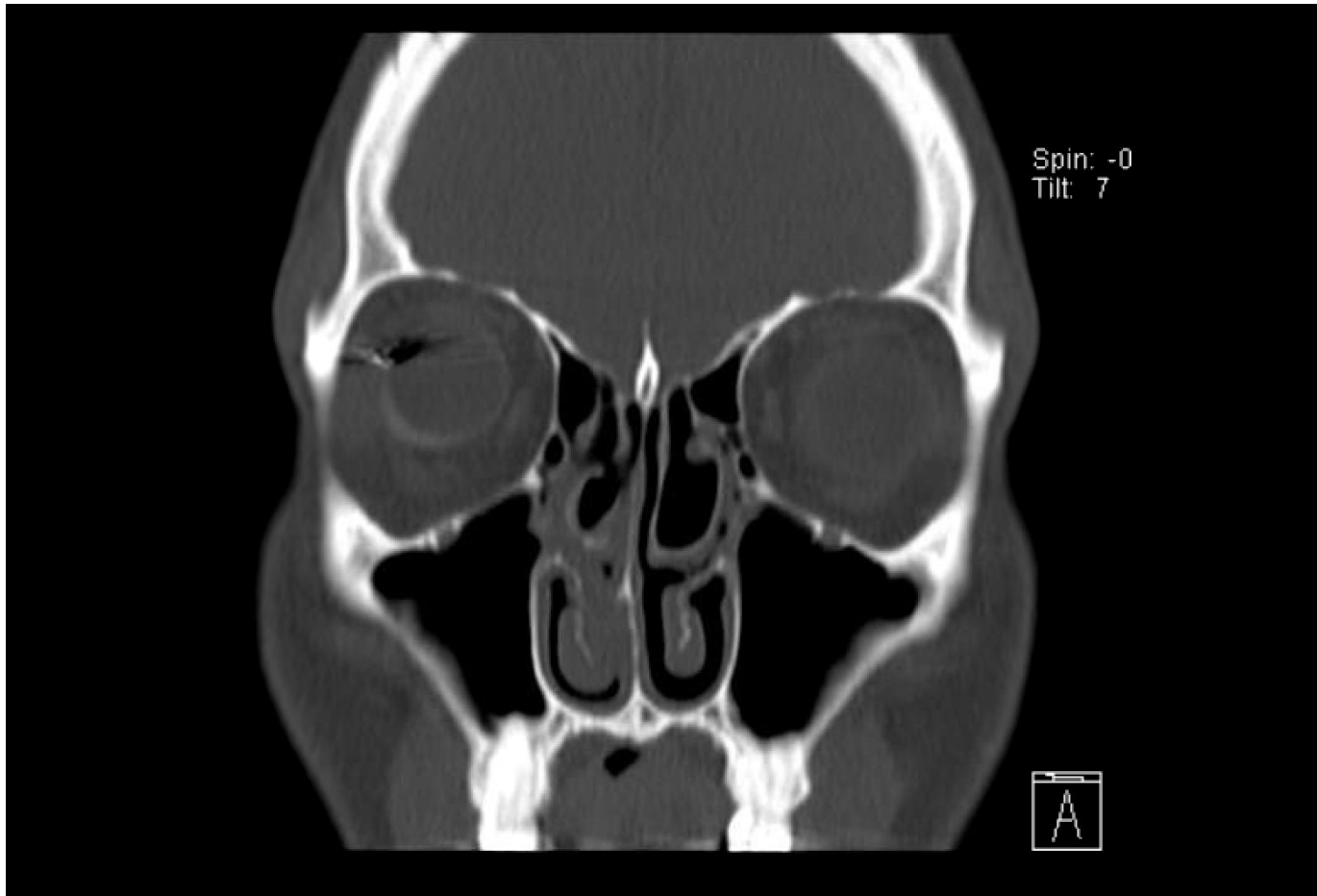
Case Presentation

- 55 year old male with greater than 6 months of nasal congestion, post nasal drip, sinus pressure
- His symptoms worsen several times per year
- Sometimes diagnosed with an acute infection and given antibiotics, which do help
- Has tried nasal steroids (flonase, nasonex), antihistamines (claritin, allegra, zyrtec) without relief
- Referred to ENT by his primary care physician

Case Presentation

- Exam in ENT office shows severe nasal congestion but otherwise not remarkable (no obvious infection, no polyps)
- Optimize medical management
 - Nasal steroid sprays
 - Nasal saline rinses
 - Consider longer course of antibiotics, possibly oral steroids
 - Consider allergy testing
- CT scan of the sinuses obtained after “maximal medical therapy”

Case 1



Knowing changes everything.™

Case Presentation

- What are the options for this patient?

Case Presentation

- What are the options for this patient?
- Continued medical management?

Case Presentation

- What are the options for this patient?
- Continued medical management?
- Sinus surgery in the operating room?

Case Presentation

- What are the options for this patient?
- Continued medical management
- Office-based intervention
- Sinus surgery (FESS) in the operating room

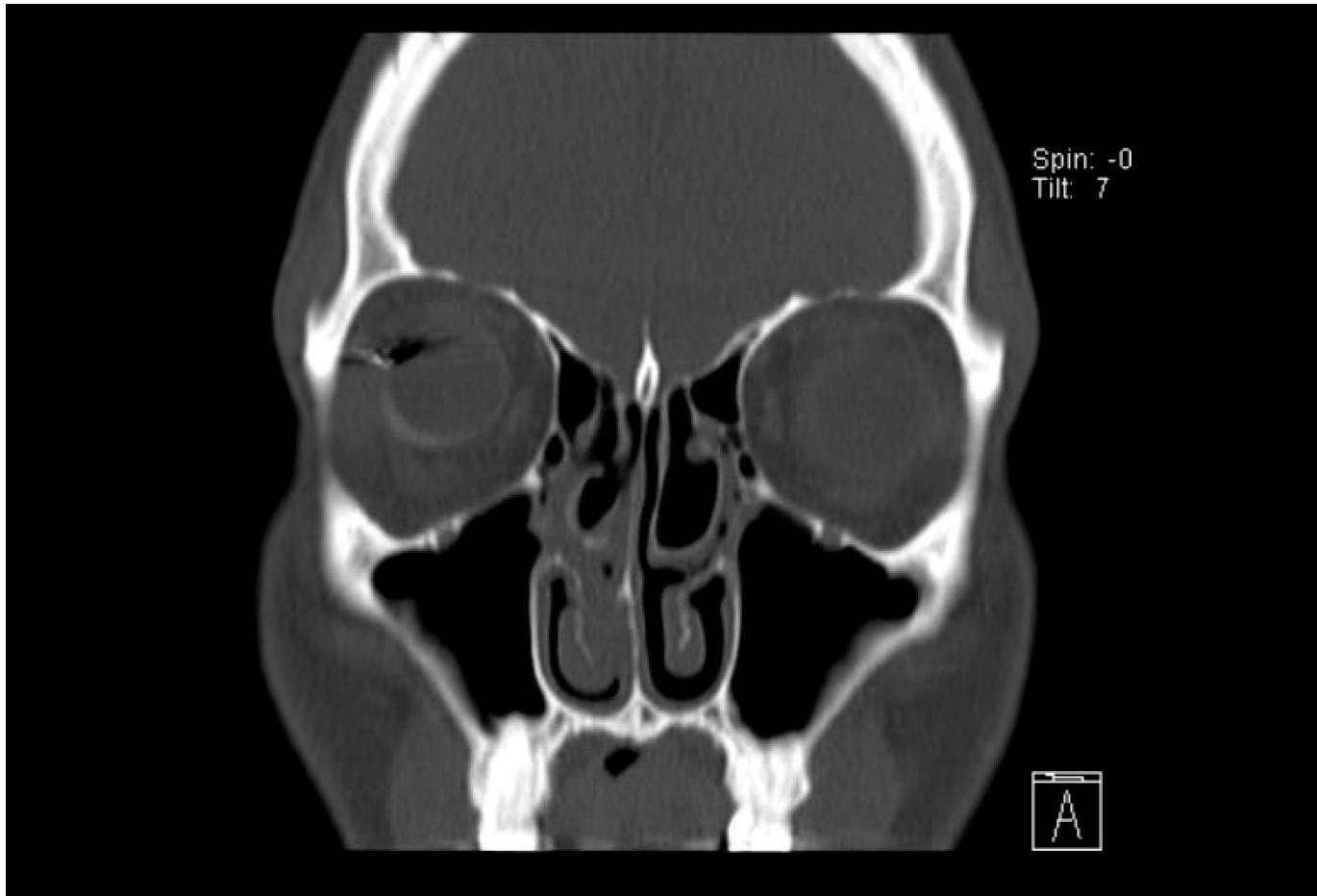
Evidence

- Multiple studies have been done comparing outcomes, cost, and safety of balloon dilation vs. traditional sinus surgery (FESS)

Balloon Sinus Dilation Data - Summary

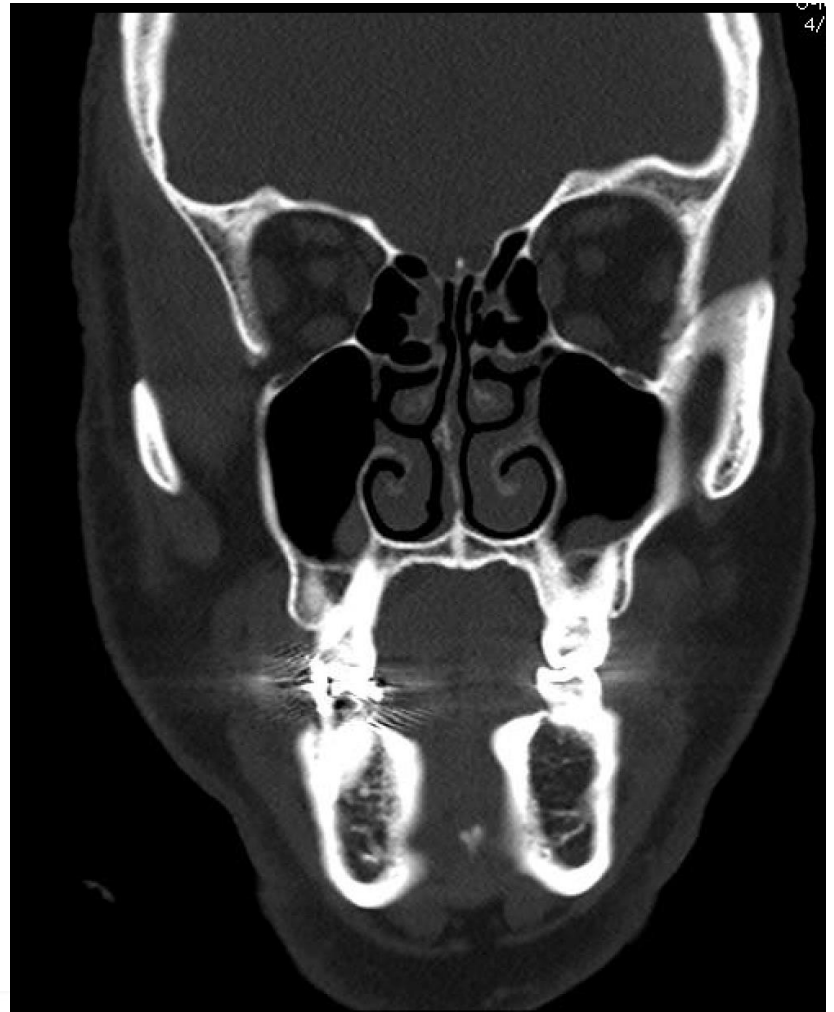
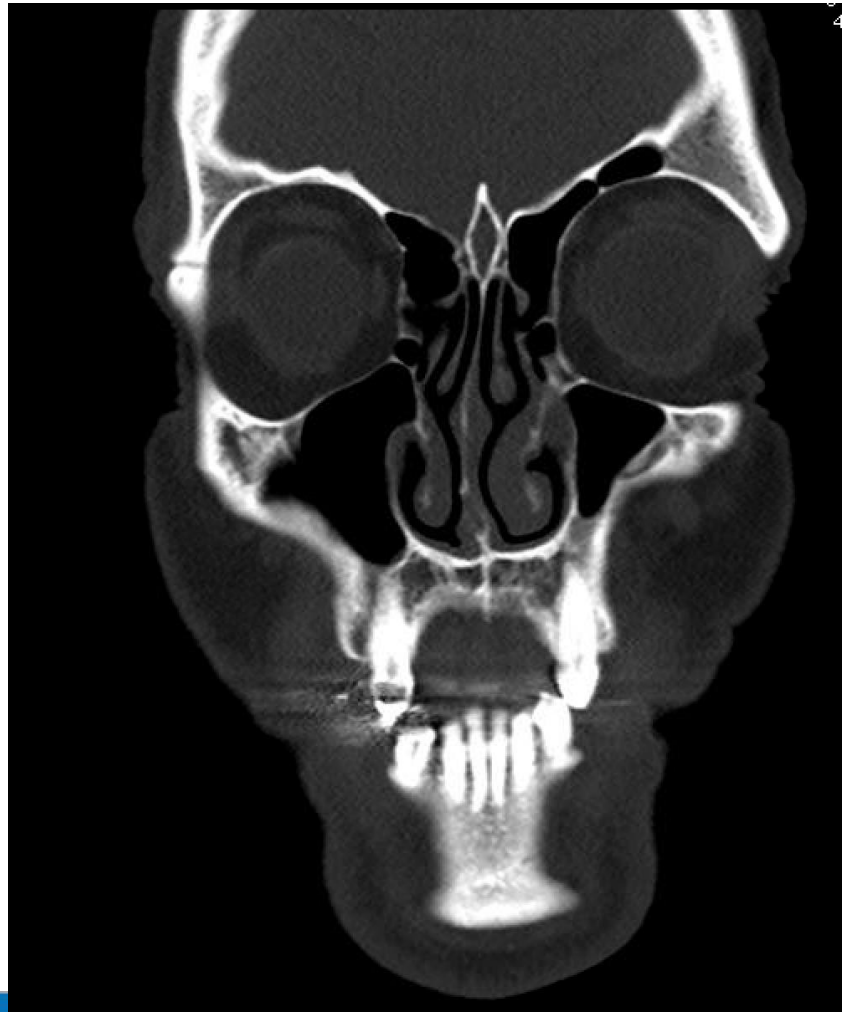
- High patient satisfaction, well tolerated in office setting
- Significant reduction in symptoms (similar to FESS)
- Low revision surgery rates (~ 5%)
- Faster return to normal activities (24-48 hours)
- Decreased costs to health care system
- Consistently good results across numerous clinical studies

Case 1



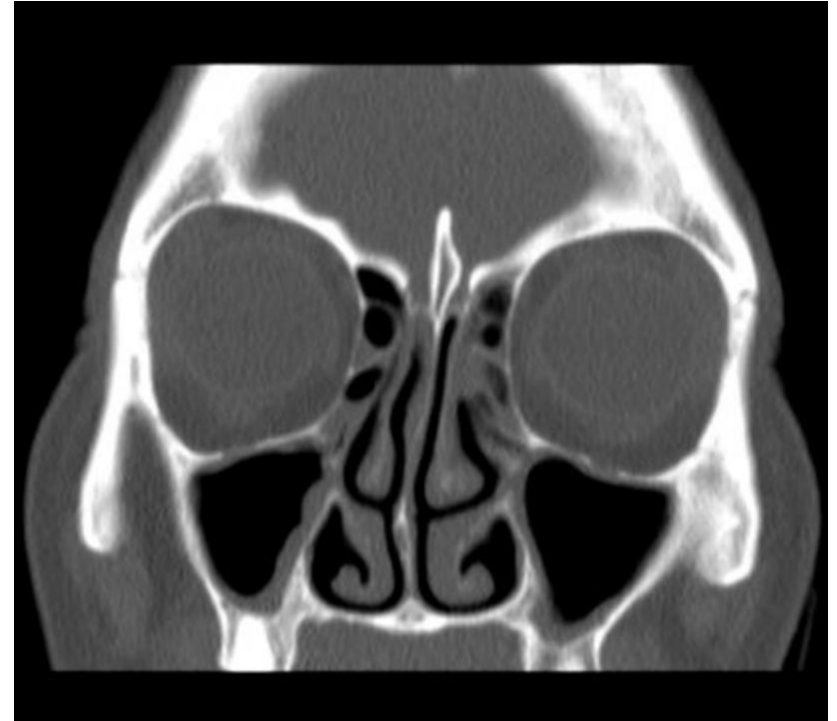
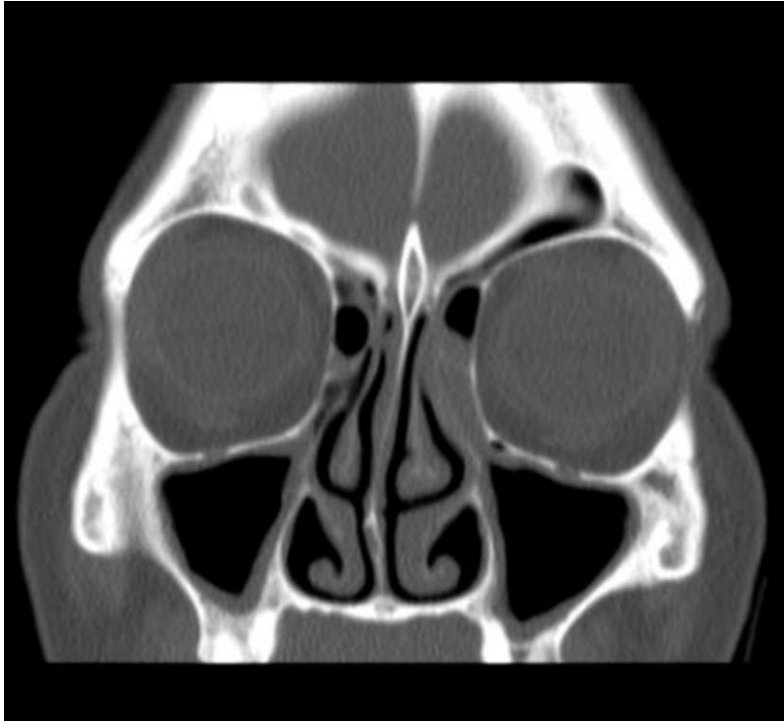
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Case 2



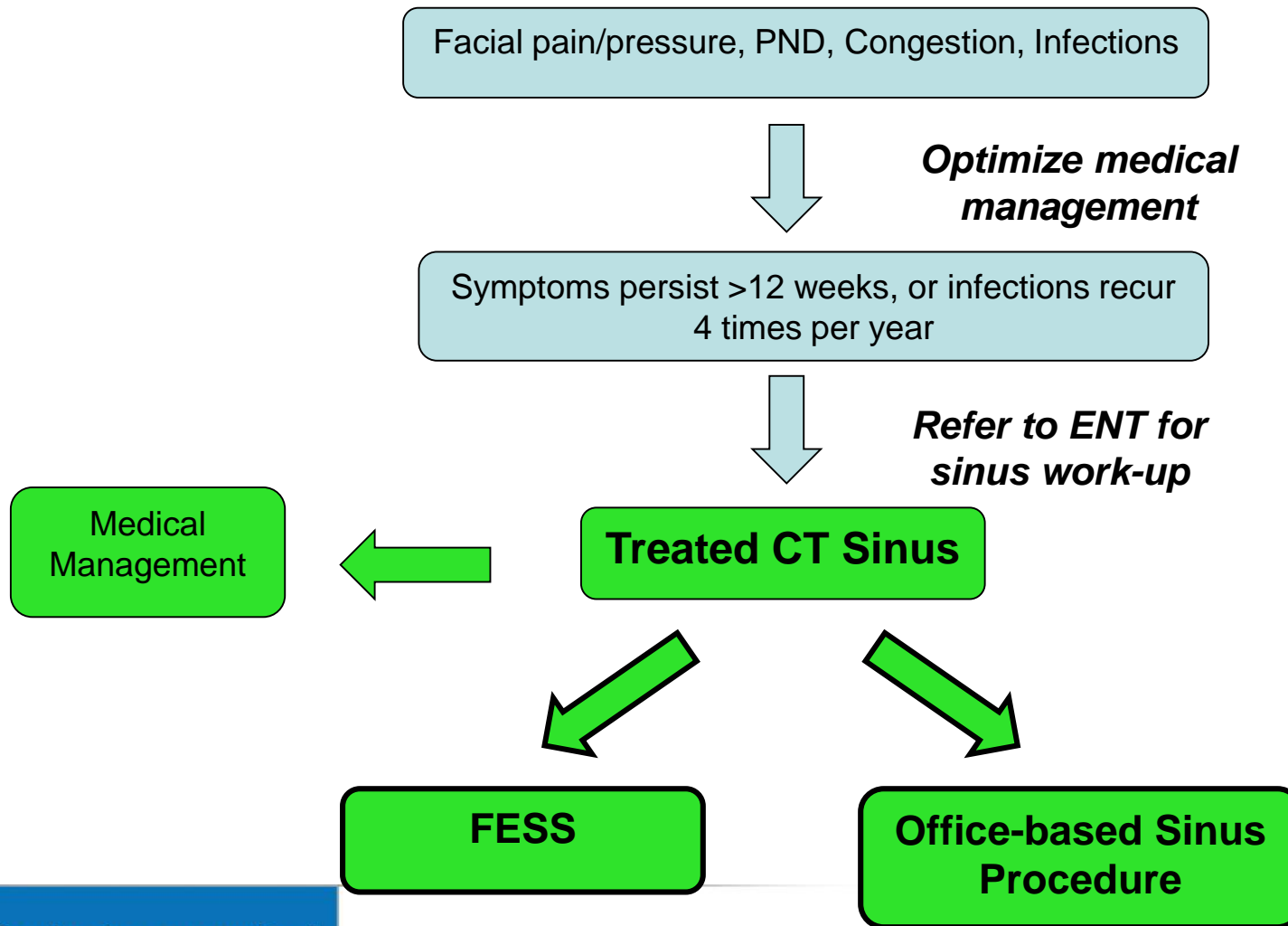
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Case 3



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Chronic Sinusitis Treatment Flow



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Sinusitis: Treatment options



Medical Therapy

Medicines commonly used to treat bacterial infection and allergies and provide symptomatic relief to the patient.

Limitations:

- Does not address underlying anatomy
- Side effects



Office Sinus Dilation

Ideal for patients who fail medical therapy but do not need, want, or are unable to have sinus surgery.

Limitations:

- May not be able to treat some complex sinus disease



Sinus Surgery

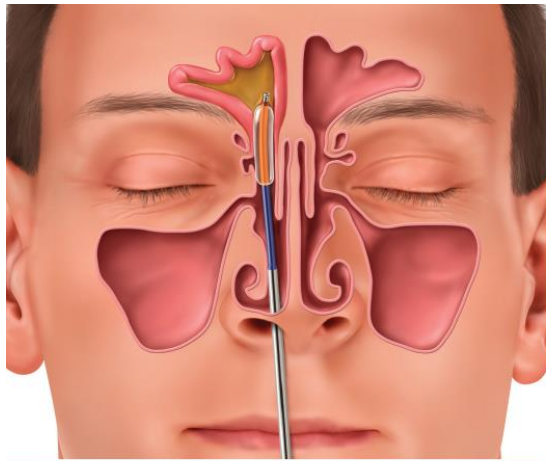
For patients who fail medical management and suffer from complex sinus disease. More invasive than balloon dilation.

Limitations:

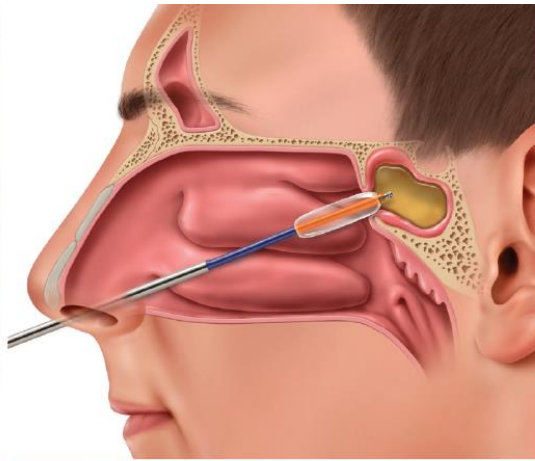
- Requires general anesthesia
- Longer recovery

How does it work?

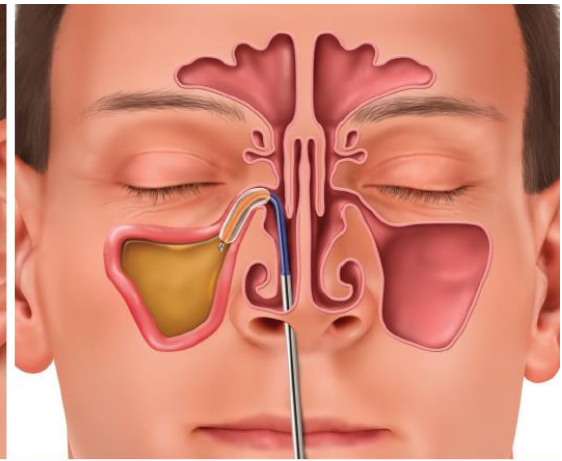
Treat frontal (forehead), maxillary (cheek), sphenoid and front part of the ethmoid sinuses by dilating/opening natural drainage pathways



FRONTAL SINUS



SPHENOID SINUS



MAXILLARY SINUS

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Courtesy of Entellus Medical

Procedure overview

- Office procedure – approximately 60 minutes
- Pre-procedure pain medication, anti-anxiety medication, topical/local anesthesia
- Balloon is gently inserted into natural drainage pathways of affected sinuses
- Expanded to dilate and remodel drainage pathways of the sinuses
- Can also remove polyps, shrink turbinates, and perform other procedures
- Image guidance

Sinus balloon example



XprESS LoProfile Multi-Sinus Dilation Tool with PathAssist LED Light Fiber

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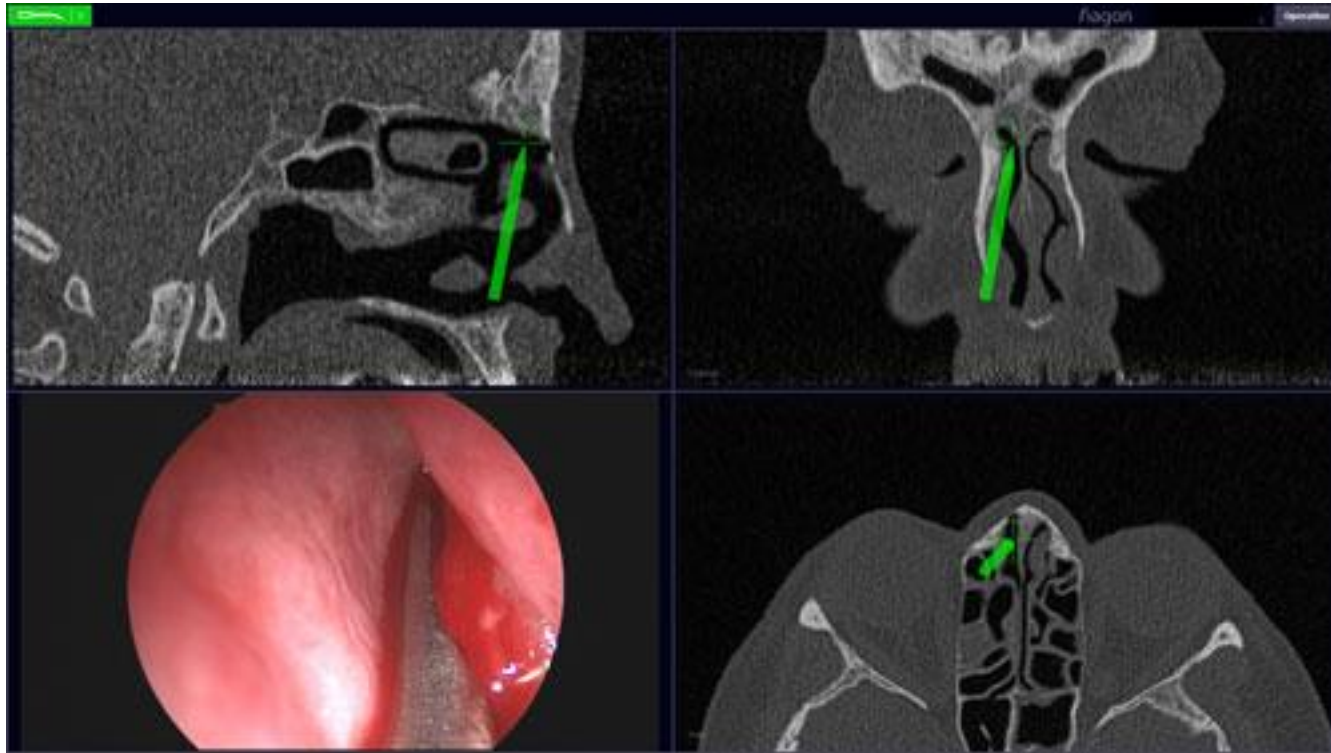
Courtesy of Entellus Medical

Sinus balloon example



Acclarent Relieva Scout Multi-Sinus

CT navigation for the office



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Other tools designed for office



Entellus shaver

Other tools designed for office



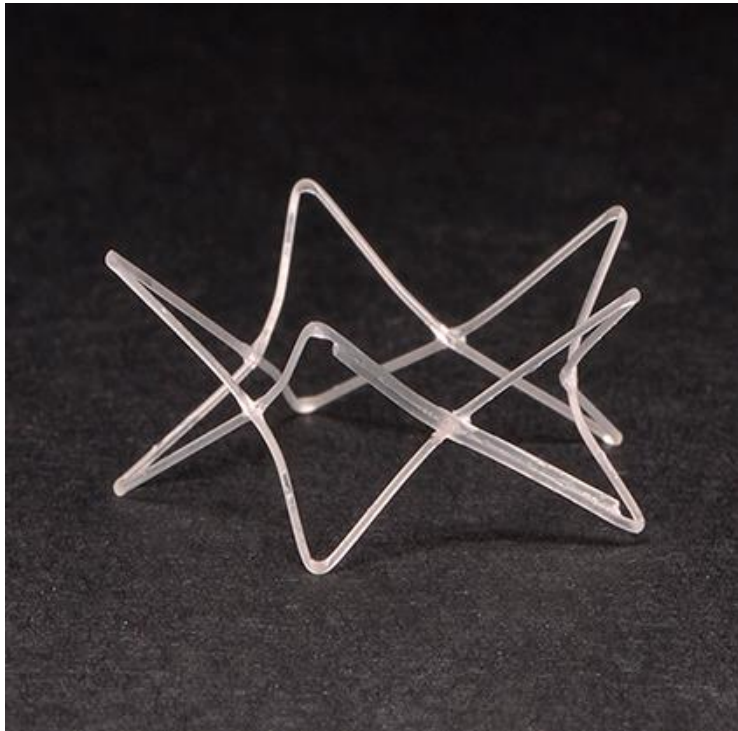
Entellus Cyclone

Sinus balloon example

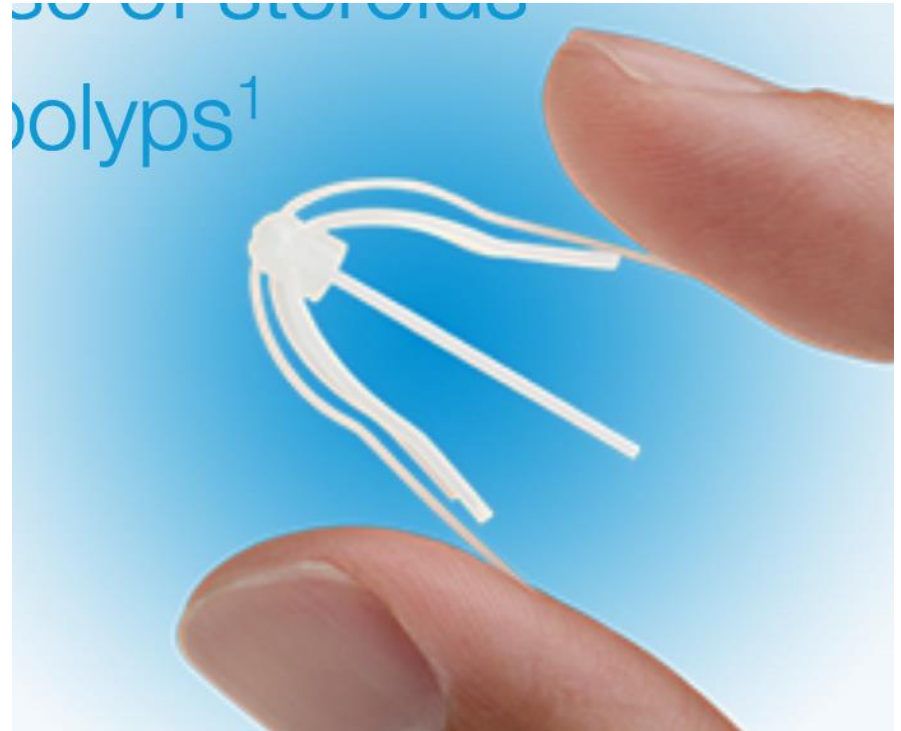


Medtronic NuVent compatible with
Fusion image guidance

Products for nasal polyps

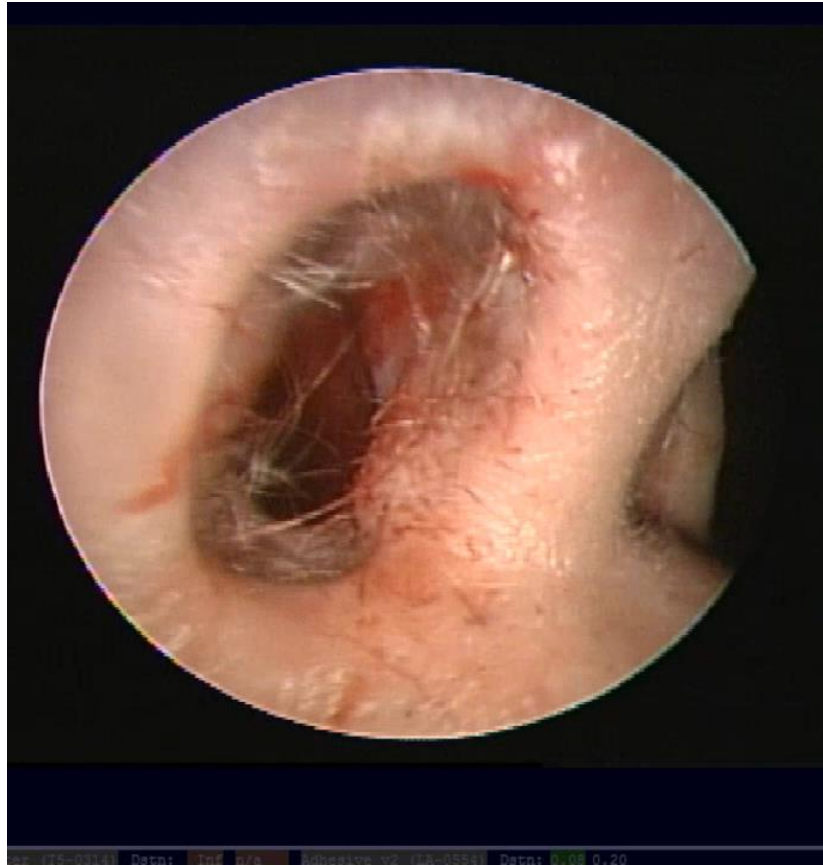


Propel Contour



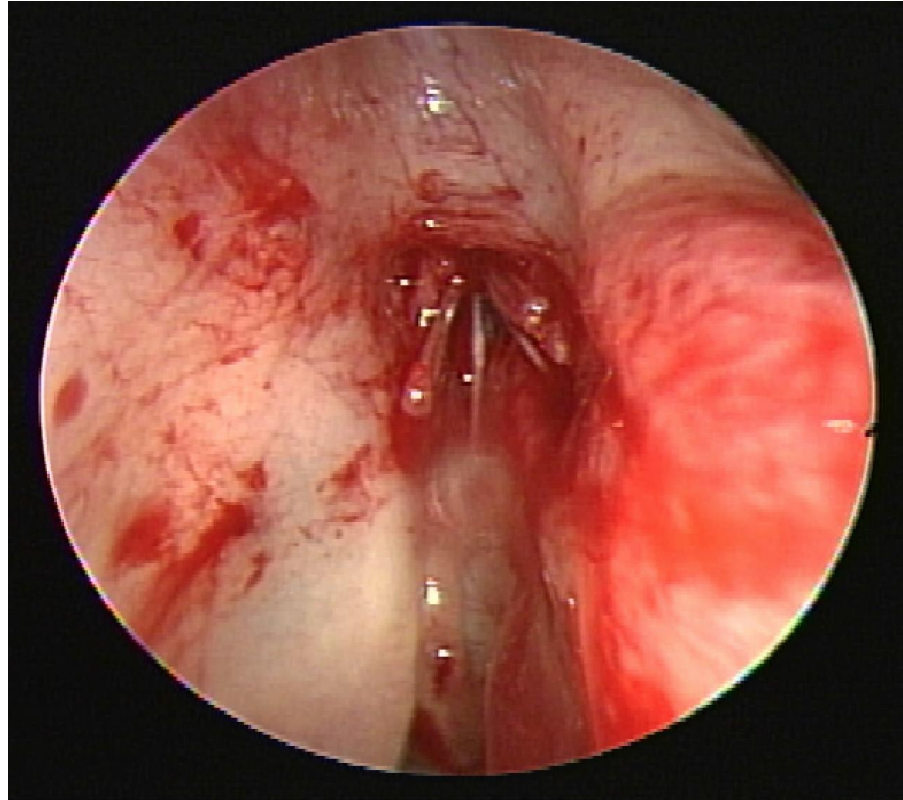
Sinuva

Dissolvable steroid implant placement



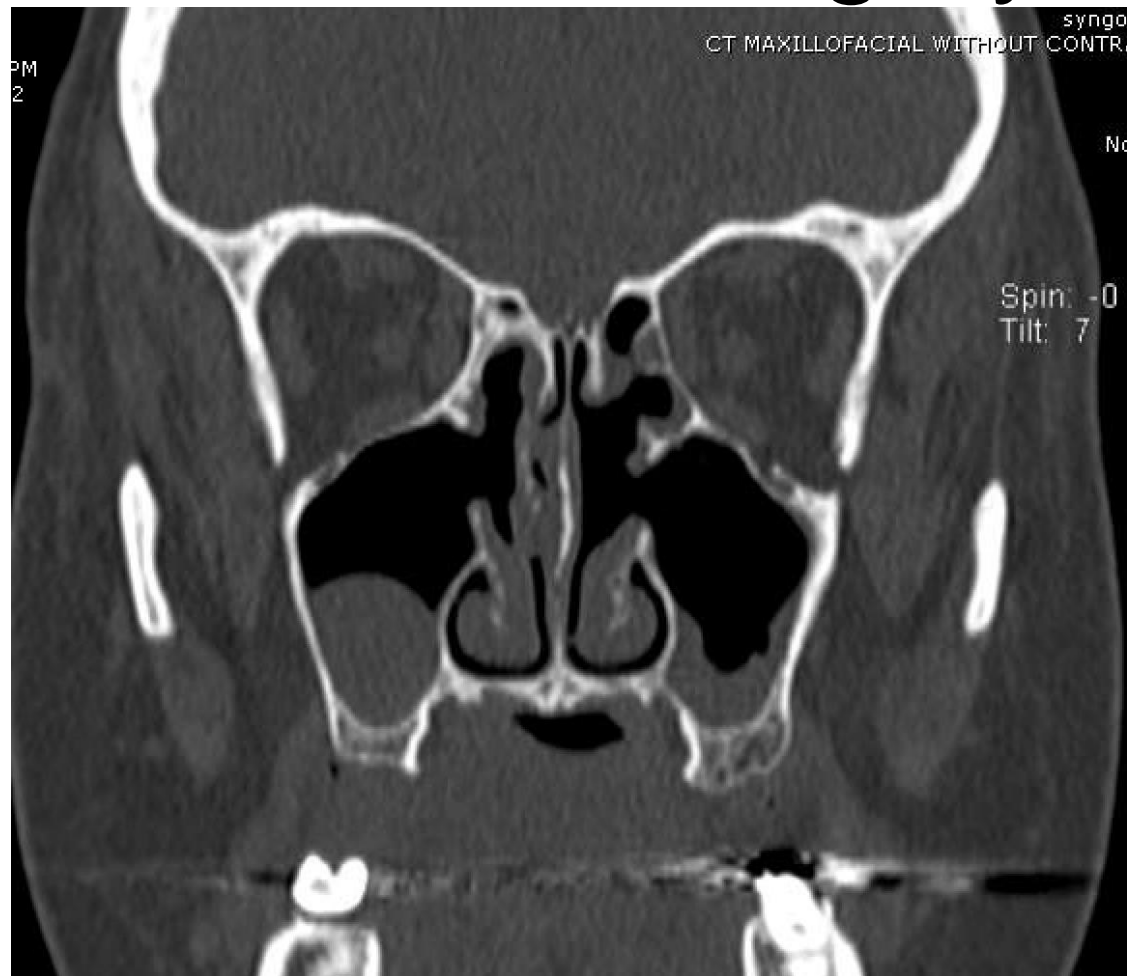
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Dissolvable steroid implant in frontal sinus outflow tract



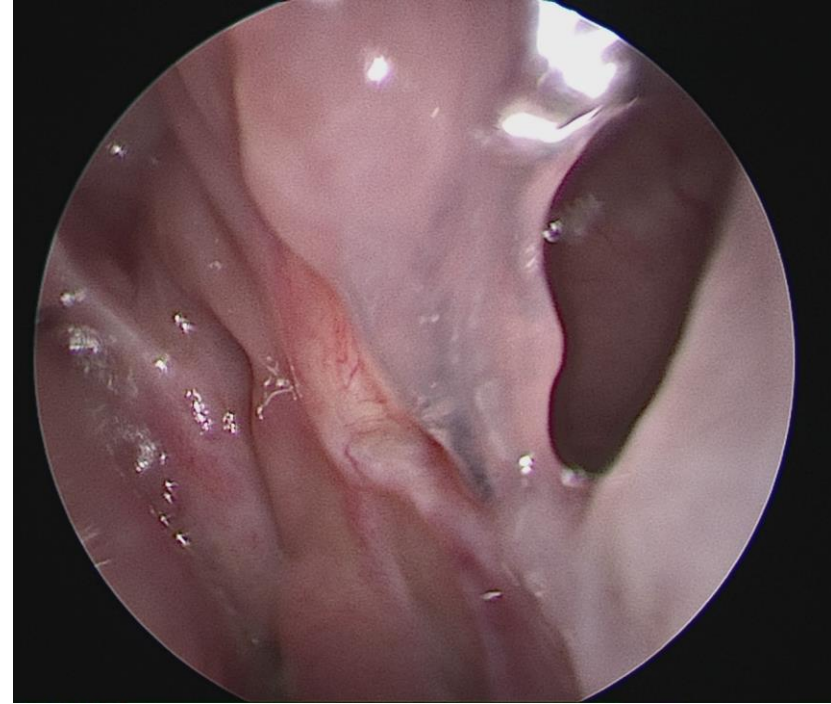
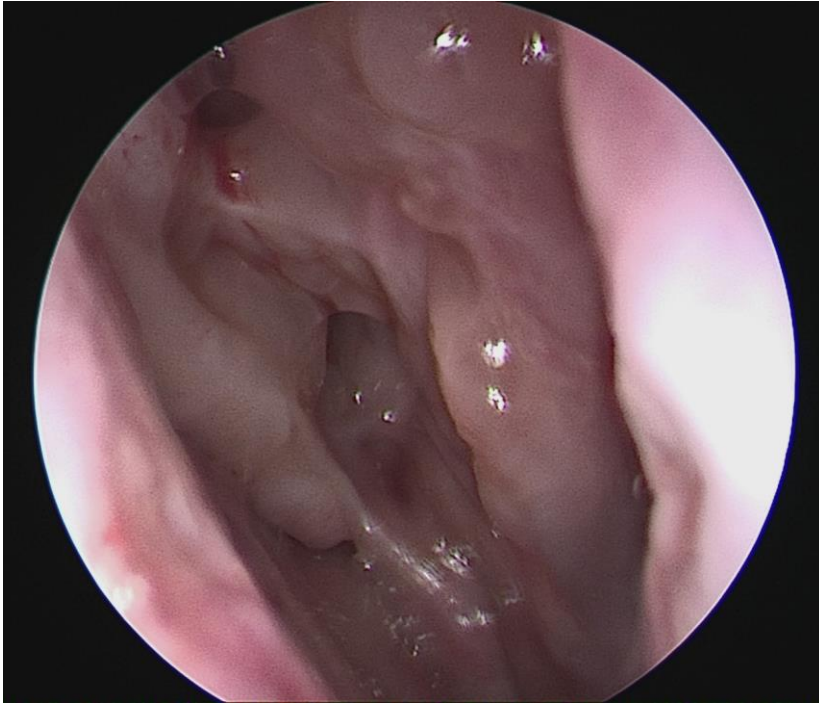
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Revision surgery



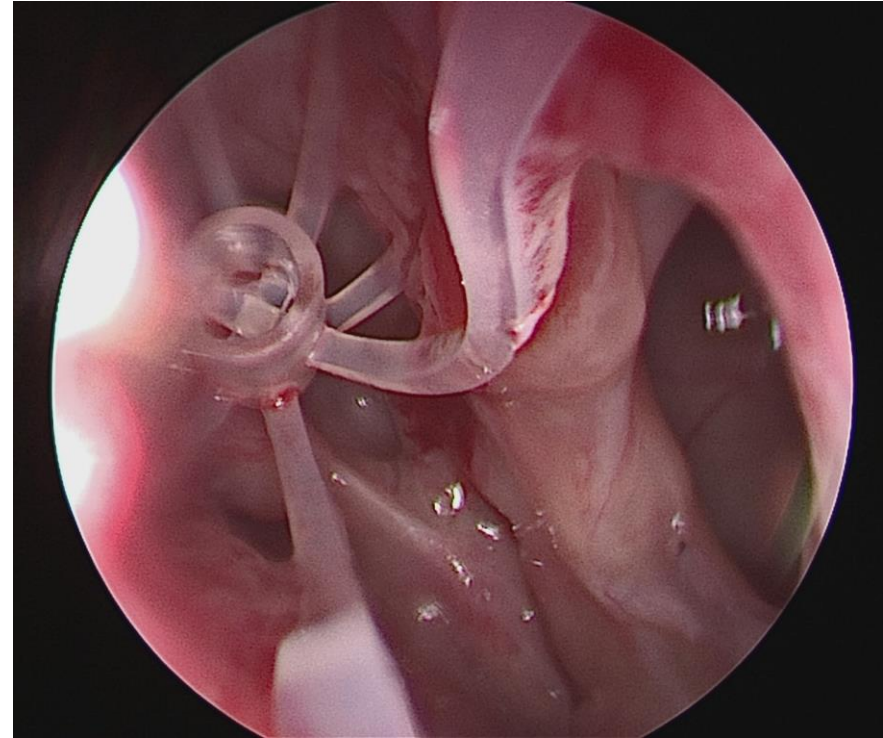
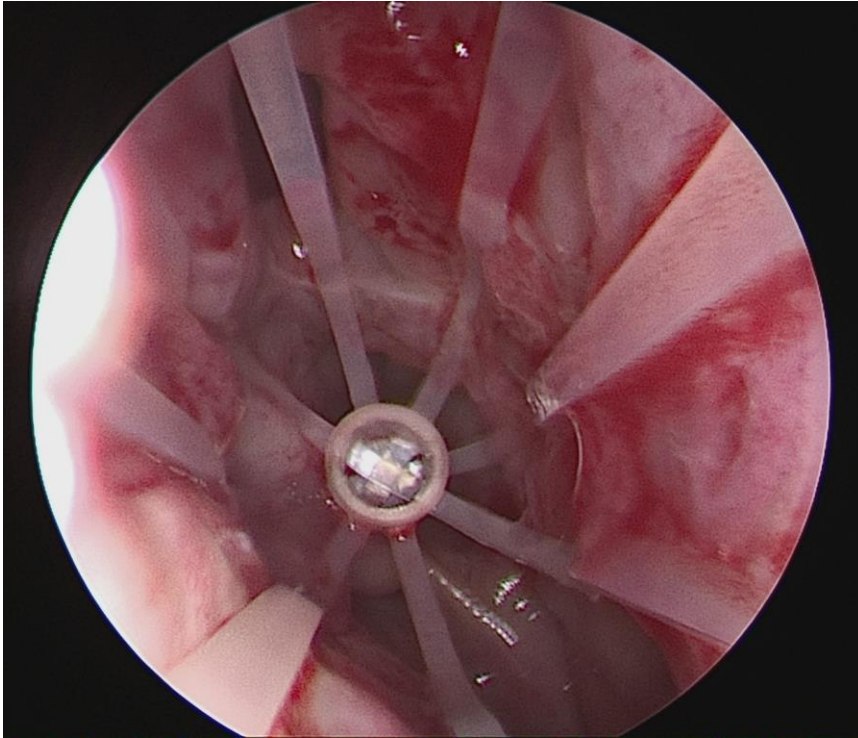
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Revision surgery



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Polyp removal; implant placement



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Office sinus dilation

- [Syracuse Channel 9 News Story](#)

Conclusions

- Balloon sinus dilation is a tool that enables a less invasive, office-based intervention for chronic sinusitis
- Has been shown to be safe and effective
- Part of the progression in medicine toward minimally invasive surgery and office-based procedures
- Decreased costs to the health care system

Conclusions

- New tools and improved local anesthesia techniques are expanding our ability to treat variety of conditions in the office setting under local anesthesia
- Revision procedures
 - Image guidance
 - Smaller instrumentation
- Polyp removal
 - Shaver
 - Long acting steroid implant
- Equipment often as good or better than what is in the operating room

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QUESTIONS?

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