

鼻竇炎之評估和處置  
Chronic Rhinosinusitis  
&  
Nasal Polyposis

# Introduction

- 鼻竇炎分有跟沒有鼻息肉的兩種
  - 鼻息肉通常是一個發炎反應，而通常不是因為感染，是nonspecific edematous，通常是 eosinophilic
  - 沒有鼻息肉的鼻竇炎是rarely eosinophilic，但80%有鼻息肉的鼻竇炎都有EG2+ (activated) eosinophils，所以有鼻息肉的鼻竇炎可分為eosinophilic跟非eosinophilic兩種

# Incidence

- 鼻息肉好發於50歲以上，14%有family history(uncontrolled study)
- 容易引起鼻息肉的狀況有: asthma(尤其是adult-onset asthma並且對aspirin過敏); ciliary dyskinesia syndromes (Kartagener syndrome/Young syndrome); cystic fibrosis (CF); Churg-Strauss syndrome; **allergic fungal sinusitis(單側)**; and bacterial rhinosinusitis(單側)
- 單側的polyp要懷疑: inverting papilloma, antral-choanal polyp, neoplasm, or encephalocele(先image再biopsy)。所以單側的要biopsy
- NA可能跟polyp有關，但很多NA永不會有polyp

# Clinical Presentation

- 鼻塞、anosmia、rhinorrhea
- 而沒有polyp的CRS比較常pain跟反覆急性感染
- 跟NP有關的anosmia通常對steroid有反應
- 通常pale，因為mucosa跟stroma的transudative edema，通常是雙側的
- 通常從middle meatal cleft長出來，也可能從sphenethmoidal recess或甚至MT內側
- **Rarely**從septum來，要切片
- CT (C-)看到Bone remodeling不算少見

# Histology

- NP的特徵是edematous stroma, goblet cells的hypertrophy, 跟 intense inflammatory cell infiltrate
- Fibroblasts, epithelial, and endothelial cells佔了NP組成的絕大部分
- 但inflammatory cells裡面，eosinophil是most predominant
- 這些eosinophil主要是在lamina propria裡面，還有一些lymphocyte，以T cell為主(TH1 TH2都有)，B lymphocyte很少很少
- NP會產生很多cytokine跟inflammatory mediator去幫助eosinophil survive，fibroblasts, epithelial, and endothelial cells都會分泌IL-1跟TNF去促進eosinophil從血液中migrate出來，這些被活化的eosinophil會分泌IL-3跟IL-5，來抑制eosinophil apoptosis跟促進survival
- Eosinophil的角色主要是在過敏反應的late phase，但也能跟IgE-mediated過敏單獨存在。
- NP的上皮主要是pseudostratified ciliated columnar epithelium，但接觸airflow處可能是transitional或squamous
- **antral choanal polyp**則沒有eosinophil而又有增加的IL-5

- **Noneosinophilic Chronic Rhinosinusitis**
  - **Cystic Fibrosis**
  - **Ciliary Dyskinesia Syndromes**
  - **Antral Choanal Polyp**
- **Eosinophilic Chronic Rhinosinusitis**
  - **Asthma**
  - **Aspirin-Exacerbated Respiratory Disease (AERD)**
  - **Allergy**

# Medication - steroid

- FDA針對NP唯一核准的藥物是nasal steroid spray
- 主流是steroid，可抑制cell proliferation而導致apoptosis，降低inflammatory mediators濃度與減少發炎細胞的數目
- 對lymphocytes, eosinophils, epithelial跟fibroblast cells都有效
- 鼻噴類固醇對防止disease進展，變慢或預防術後的復發都有效果
- SE是septal bleeding，注意不要對septum噴可避免
- 鼻噴類固醇可被吸收，因此小孩的長期或高劑量使用要注意
- 系統性類固醇可能比鼻噴劑更有效
- 但長期或高劑量使用，SE一大堆，例如immunosuppression, impaired wound healing, peptic ulcer, easy bruising, elevation of blood glucose, elevation of blood pressure and intraocular pressure, adrenal suppression, cataracts, body fat distribution changes, water retention, potassium and calcium loss, decrease in bone density, muscle weakness, hirsutism, and emotional lability or, rarely, psychosis
- 即使短期使用也可能hip跟shoulder的aseptic necrosis

# Medication - Antihistamine

- 對CRS-NP的效果minimal，因為主要症狀是鼻塞, hyposmia, and mucus production，但antihistamine的效果主要是針對鼻癢跟打噴嚏。
- Azelastine，噴的histamine-1 receptor antagonist，可治vasomotor rhinitis跟AR，對鼻塞鼻癢都有效，但對CRS跟NP效果不明



# Medicataion - Antibiotic

- 對CRS-NP controversial
- 最常見的CRS致病菌是coagulase-negative Staphylococcus (CNS)。而厭氧菌的比例是0-100%
- 一般而言，CRS with neutrophilia比較像是因感染造成的，然而大部分CRS都是eosinophilia infiltrate(代表細菌感染在CRS的角色不大)
- 但有些underline的CRS有acute exacerbation時就與bacteria有關，
- 可用macrolide(erythromycin, clarithromycin, roxithromycin)，既殺菌又抗發炎，可以抑制neutrophil的migration, adhesion跟action，可以降低eosinophilic inflammation,增加mucociliary transport, 減少goblet cell secretion

# Medication - LT receptor antagonists

- 部分阻塞Cys-LTs的receptor
- Montelukast跟zafirlukast都可用來治療氣喘
- Zileuton，則是去antagonize製造Cys-LT的5-lipoxygenase

# Surgical Treatment

- 主流，但若只單純用手術，長時間而言對病患最後的結果可能沒幫助
- 術前減輕發炎反應，例如抗生素，鼻噴類固醇或口服類固醇，對手術有幫助
- 記得polyp會bone remodeling尤其是薄的骨頭。血流太多就要停
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# Take home message

- Incidence of nasal polyps varies from 0.6% to 4% of the population and the highest frequency occurs after the fourth and fifth decades.
- A nasal polyp in a child should prompt investigation for possible underlying cystic fibrosis.
- A unilateral nasal polyp may represent an inverting papilloma, neoplasm, antral choanal polyp, allergic fungal sinusitis, or encephalocele, and imaging and possible biopsy should be strongly considered.
- Most bilateral nasal polyps associated with chronic rhinosinusitis are rich in eosinophils.
- Surgical therapy alone for bilateral nasal polyps is rarely curative, and the majority of patients require ongoing medical management primarily using topical steroids.
- Aspirin-associated respiratory disease is also known as aspirin hypersensitivity and Samter's triad and represents one of the most refractory eosinophilic chronic rhinosinusitis nasal polyp subgroups.
- The most useful single medication for the control of hyperplastic chronic rhinosinusitis with nasal polyps is a topical steroid spray.