



Rhinologic Emergencies

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هرگونه ضایعه، توده یا حادثه ای که باعث افتراق همودینامیک بیمار شود:

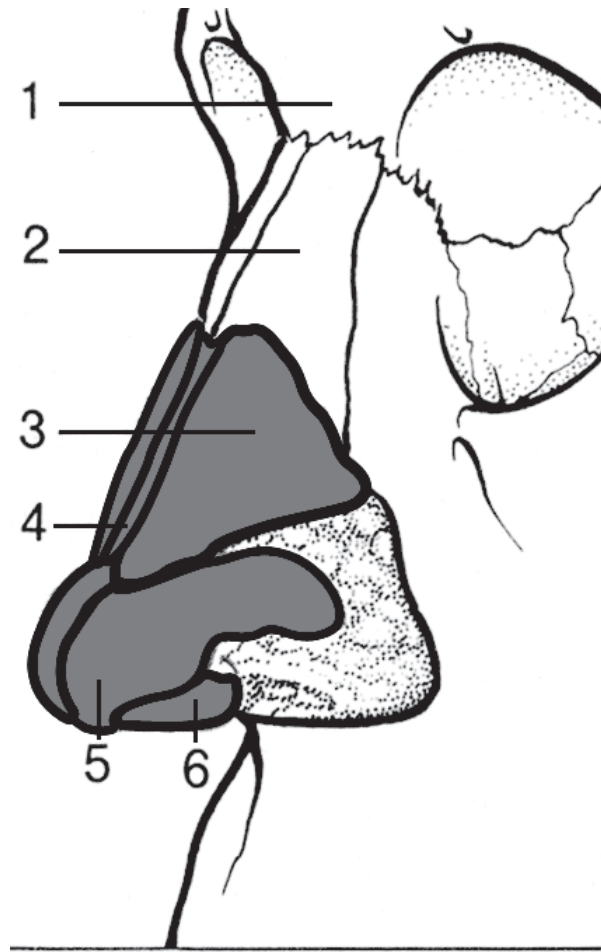
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urgent=immediate

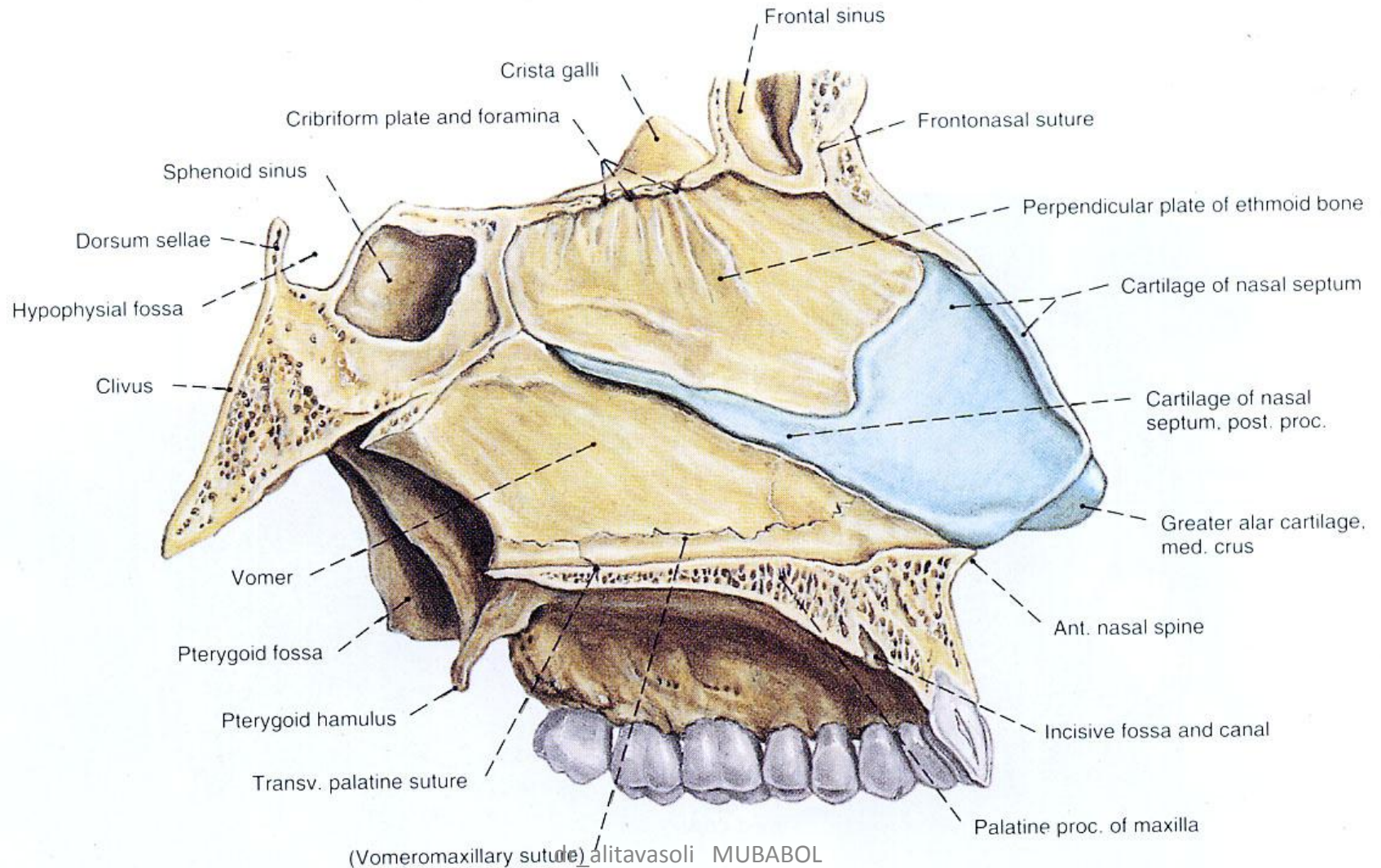
emergent

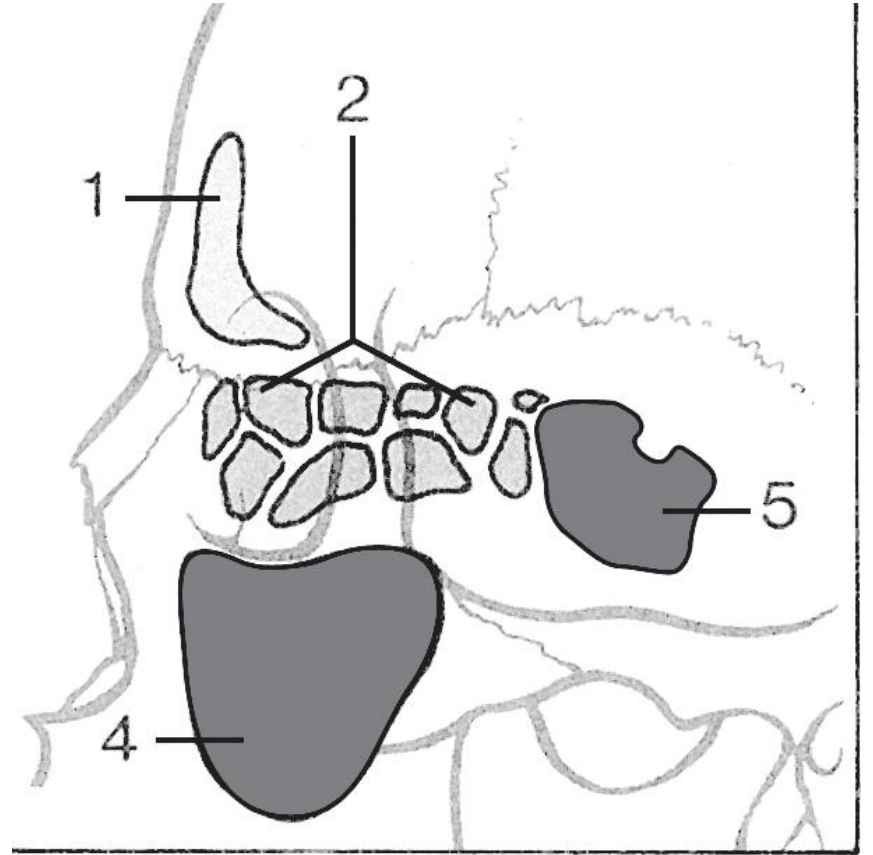
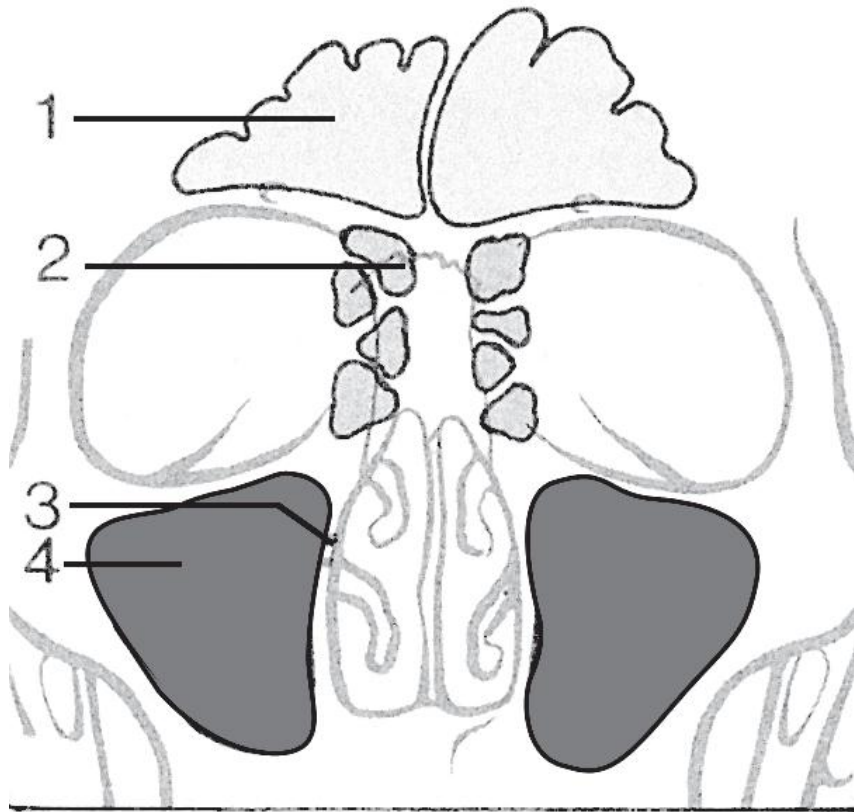
(مثل: آنژیوادم، ترومای سروگردن، تومور و...)

Anatomy and Physiology of the Nose and Paranasal Sinuses



دو حفره بینی توسط سینتوم بینی از هم جدا شده اند





Possible Physiologic Functions of the Paranasal Sinuses

Phonetic

Resonance

Protection from bone conduction of own speech

Respiratory

Humidification

Buffer pressure changes

Local immunologic defense

Olfactory

Supply olfactory mucosa

Air reservoir of stimuli

Static

Reduce skull weight

Mechanical

Trauma protection

Thermal

Heat insulation

Nasal Fractures



- • Nasal fractures are the most common head and neck fracture.
- • They have aesthetic and functional implications.

- Pain, edema, epistaxis, change in external nasal appearance, nasal airway obstruction, and infraorbital ecchymosis.
 - Visual inspection, Manual palpation, and Anterior rhinoscopy are essential.

- • **Septal hematoma** should be recognized early and managed immediately.
- • Closed reduction may reduce the need for delayed treatment.
- • Open reduction may be necessary.

- • Even if no surgical intervention is initially planned, the patient should be reevaluated in 1 to 2 weeks after any traumatic swelling has resolved.
- • Cartilaginous injury, persistent deformity, or persistent nasal obstruction may require delayed functional septorhinoplasty.

هماتوم سپتوم:

در عرض ۳ روز

: نگر روز غضروف

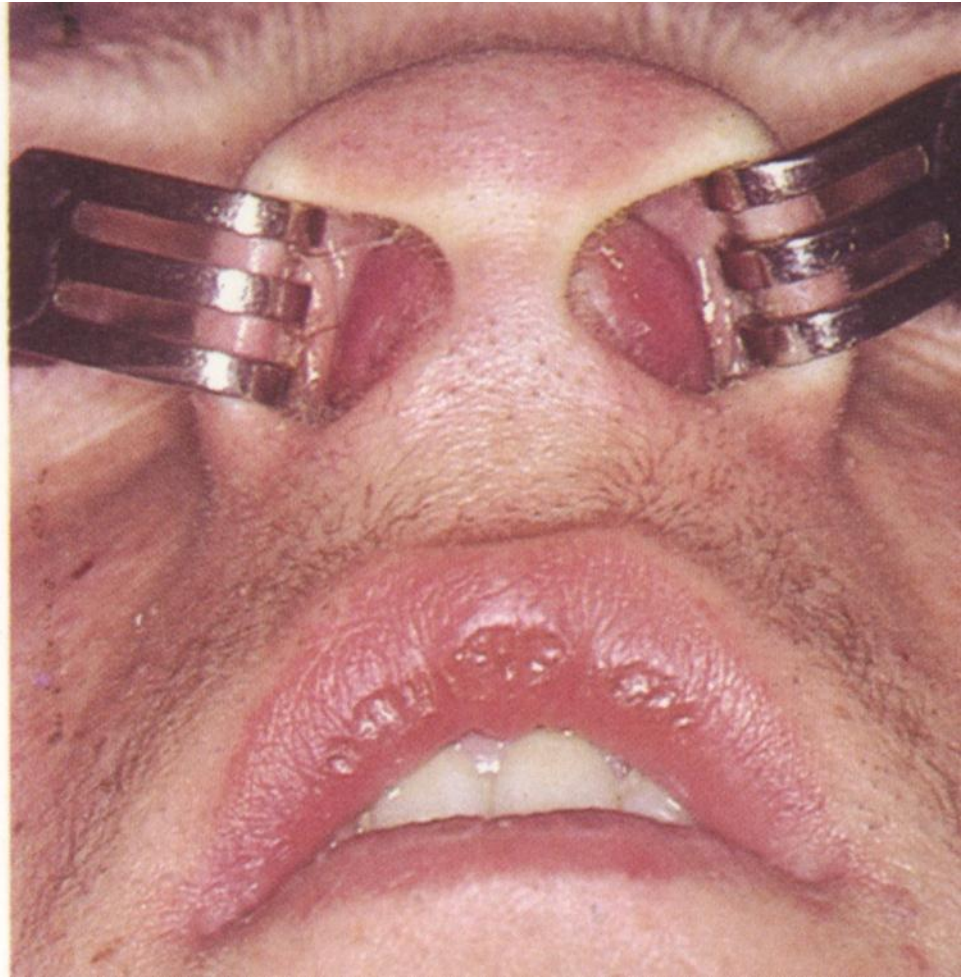
در عرض ۷ روز:

آبسه (تب. گرفتگی

بینی. درد)

درمان: برش و تخلیه

هماتوم + تامپون



FOREIGN BODIES

small batteries,
food,
beads,
pencil erasers,
and other inert objects.

Epistaxis



Epistaxis

- • Epistaxis is a common otorhinolaryngologic complaint encountered by multiple medical disciplines and is the most common otorhinolaryngologic emergency.
- • Management of epistaxis, as for other emergency situations, should begin with ABCs (airway, breathing, circulation) and follow standard protocols for resuscitation and treatment.

- • Address predisposing conditions.
- • Accurate localization of bleeding site is required for treatment.
- • It is estimated that > 90% of epistaxis cases arise from the anterior nasal septum at Kiesselbach's area.

- In children, nearly all cases are anterior, often due to digital trauma.
- Over age 40, the incidence of posterior bleeds rises.

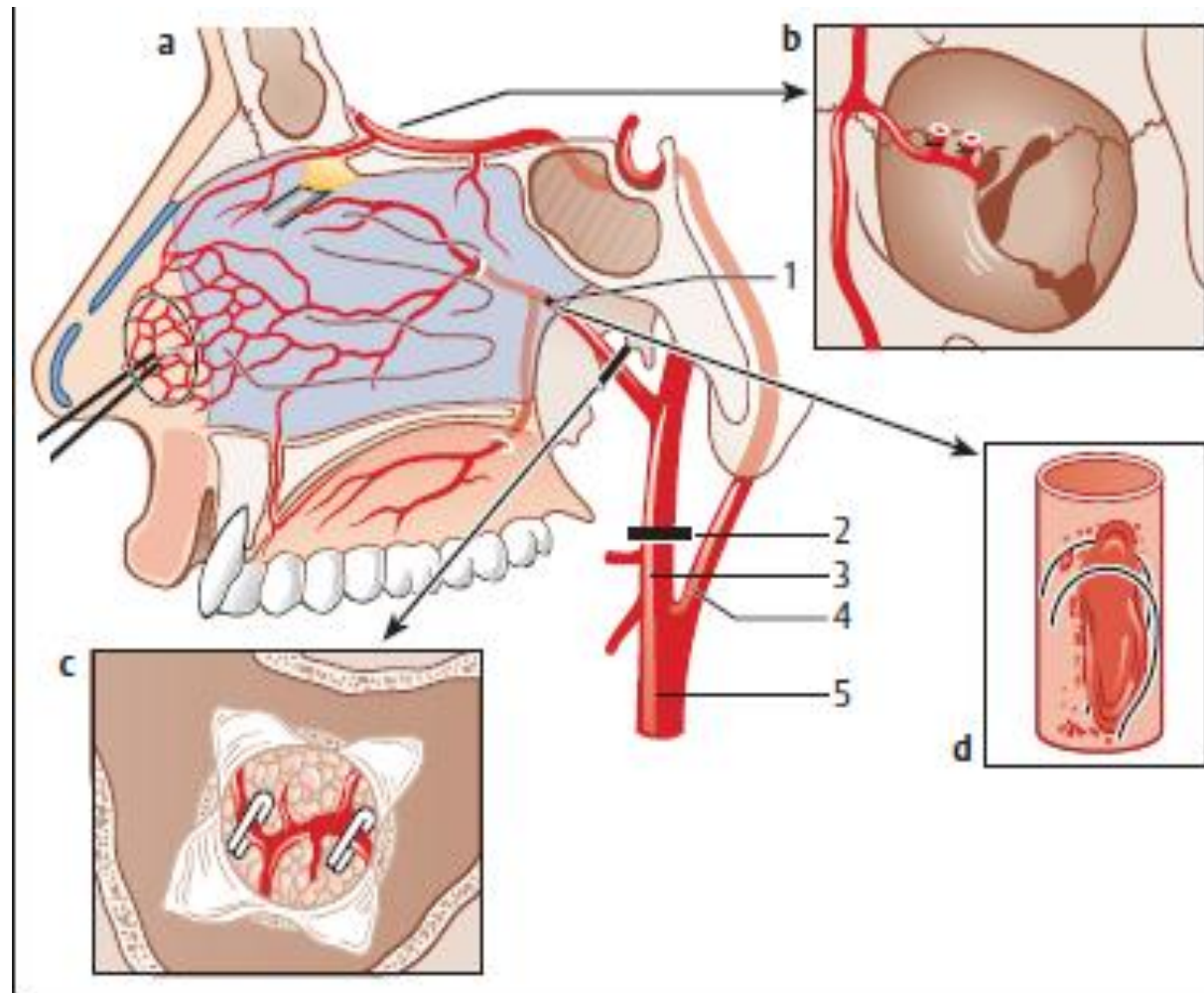
Fig. 2.93a-d Sites for ligation in severe epistaxis.

a Overview. 1, Internal maxillary artery; 2, ligation of the external carotid artery; 3, external carotid artery; 4, internal carotid artery; 5, common carotid artery.

b Ligation or embolization of the ethmoidal arteries.

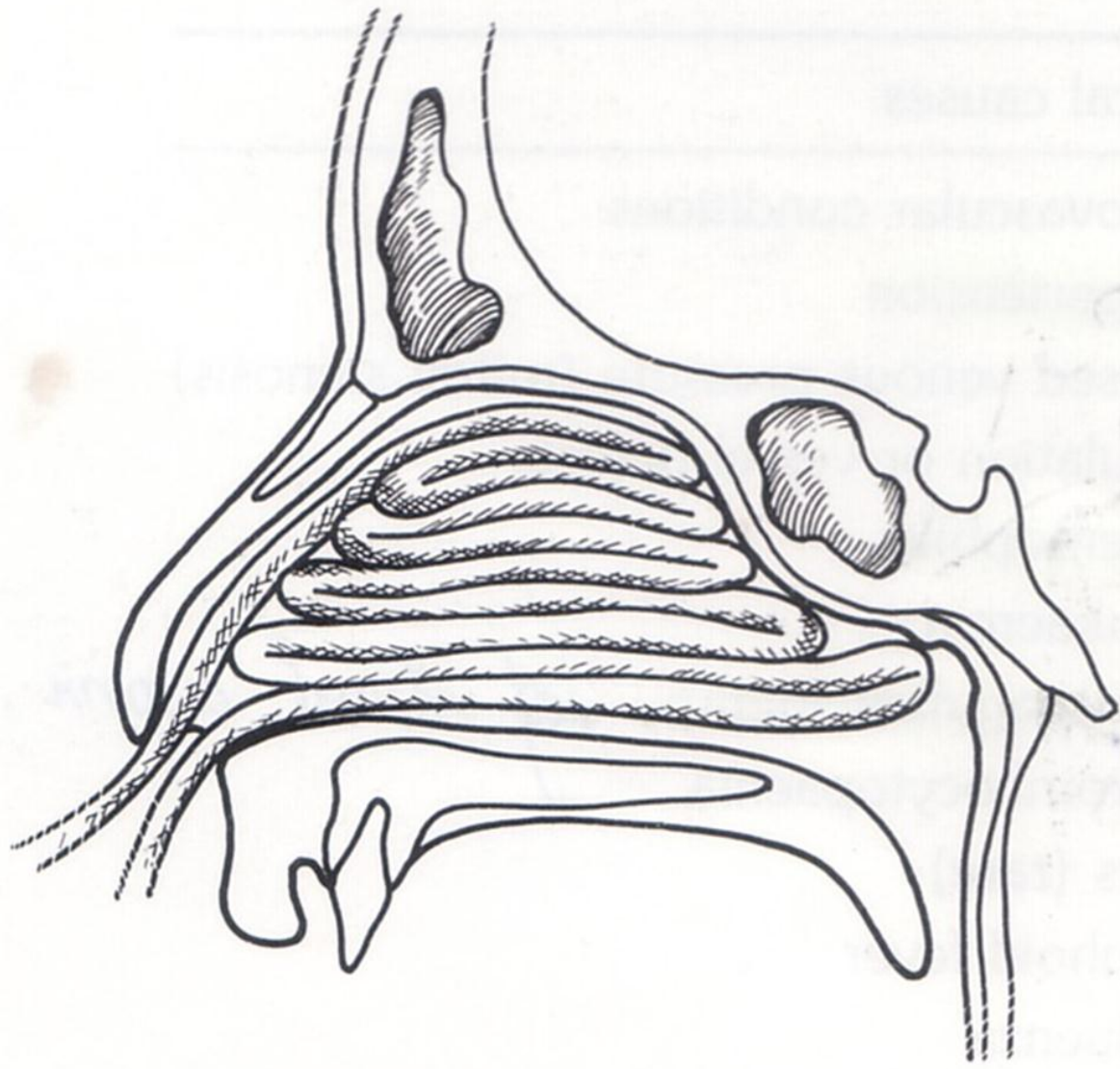
c Ligation or embolization of the internal maxillary artery or sphenopalatine artery in the pterygopalatine fossa.

d Embolization with a coil.



Causes of epistaxis

- **Trauma** Maxillofacial fractures
 - Foreign body
 - Nose picking
- **Neoplasm** Juvenile nasopharyngeal angiofibroma
 - Squamous cell carcinoma
 - Inverted papilloma
 - Mucosal melanoma
 - Other
- **Systemic disease** Hereditary hemorrhagic telangiectasia (Osler-Weber-Rendu disease)
 - Wegener's granulomatosis
 - Sarcoid
 - Coagulopathies
 - Thrombocytopenia
- **Drugs** Chemotherapy
 - Warfarin, aspirin, clopidogrel, etc.
 - Intranasal illicit drug use
- **Infection** Tuberculosis, syphilis, rhinoscleroma, viral
 - Other



Acute Invasive Fungal Rhinosinusitis

Acute Invasive Fungal Rhinosinusitis

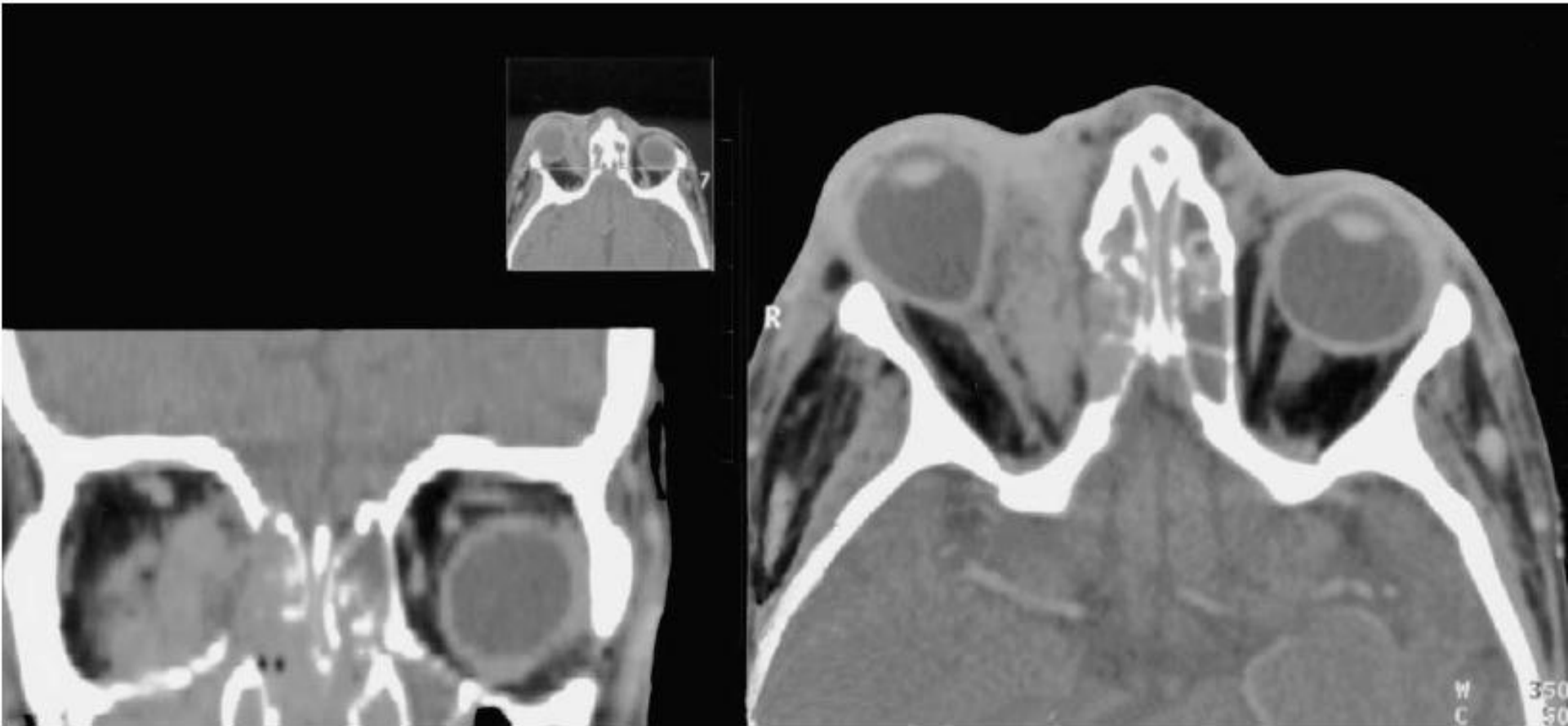
- • A rapidly progressive sinonasal fungal infection can be fatal.
- • Acute invasive fungal infections occur almost exclusively in immunocompromised or debilitated patients.
- • Successful treatment requires early detection, wide surgical débridement,
 - and correction of the underlying predisposing
 - condition.

- موکورمایکوزیس بیشتر در بیماران دیابتیک و معمولاً در طی کتواسیدوز و یا بعد از آن و همچنین در بیماران با اختلال ایمنی دیده می شود.
- همراه با تهاجم، ترومبوز و نکروز ساختمانهای عصبی و عروقی دیده می شود.
- در معاینه بالینی در روی سینوس مربوطه، کورنه تحتانی و یا کام نکروز و سیاهرنگ شدن مشاهده می شود. و ناحیه نکروز بسرعت به کل سینوس ها، صورت، چشم و قاعده مغز و مغز منتشر می شود.

- در اسپرژیلوس معمولاً نکروز بافتی وجود ندارد و واکنش اصلی در این بیماران التهاب شدید است. و بیماری بصورت یک بیماری سریع و پیشرونده بوده و با *fragile* و *friable* تظاهر می کند. در این بیماران مخاط بشدت دستکاری خونریزی می کند.
- سینوزیت قارچی مزمن مهاجم در افراد سالم از نظر ایمنی هم دیده می شود.



Coronal reconstruction and axial image demonstrating orbital invasion with *Aspergillus* in a 10-year-old girl with acute myelogenous leukemia, who survived orbital exenteration and aggressive endoscopic removal of involved sinuses.



Orbital Complications of Sinusitis

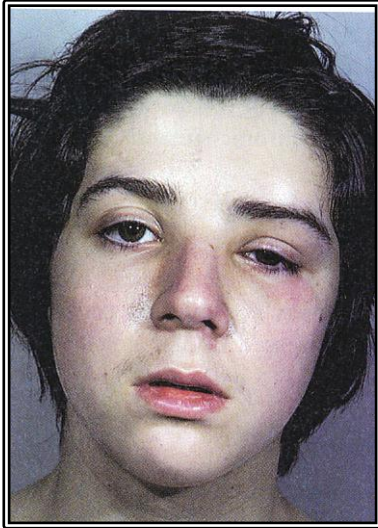
Orbital Complications of Sinusitis

- • Sinusitis is a common cause of orbital infection.
- • Significant morbidity and even mortality can result.
- • Orbital extension of sinusitis is most common in pediatric patients.
- • Combined otolaryngology and ophthalmology care is required.

- "major" criteria:
- facial pain, nasal obstruction, hyposmia, purulence on examination, and fever
- "minor" criteria :
- Headache ,fatigue, dental pain, halitosis
otalgia/pressure/fullness-,cough, Wheeze(asthma)
- (Disease of neighboring organs)

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عوارض اربیتال



بیشتر در بچه ها دیده میشوند.
سینوس اتموید و ماگزیلری در هنگام تولد وجود دارند
و در بچه های کوچکتر می توانند منشأ عوارض باشند.
سینوس فرونتال پس از 6 سالگی در رادیوگرافی دیده
می شود و تا 10 سالگی معمولاً منشأ عفونت نیستند.
سینوس اسفنوئید نیز دیر تکامل پیدا می کند.

عوارض اربیتال: شایعترین علت عفونت اربیتال، سینوزیت، خصوصاً اتمویدال است.



- ادم پره سپتال اربیتال:
- ابتدا یک معاینه کامل اوفتالمولوژیک انجام می دهیم سپس در زمان شدید طی را شروع می کنیم در صورت عدم وجود بهبود علائم قابل توجه:
- و سپس درناژ سینوس مبتلا *CTscan*
- *post septal* درگیری:
- و سپس جراحی جهت درناژ سینوس درگیر *CTscan*

Chandler classification of orbital complications

- 1. Preseptal cellulitis
- 2. Orbital cellulitis
- 3. Subperiosteal abscess
- 4. Orbital abscess
- 5. Cavernous sinus thrombosis

Intracranial Complications of Sinusitis

Intracranial Complications of Sinusitis

- • Intracranial complications due to sinusitis are a life-threatening emergency.
- • Management requires a multidisciplinary approach including neurosurgical consultation.
- • Complications include meningitis, dural sinus thrombosis, and intracranial abscess.

**Intracranial complications
of sinusitis:**

A, osteomyelitis;

B, pericranial or
peri-orbital abscess;

C, epidural abscess;

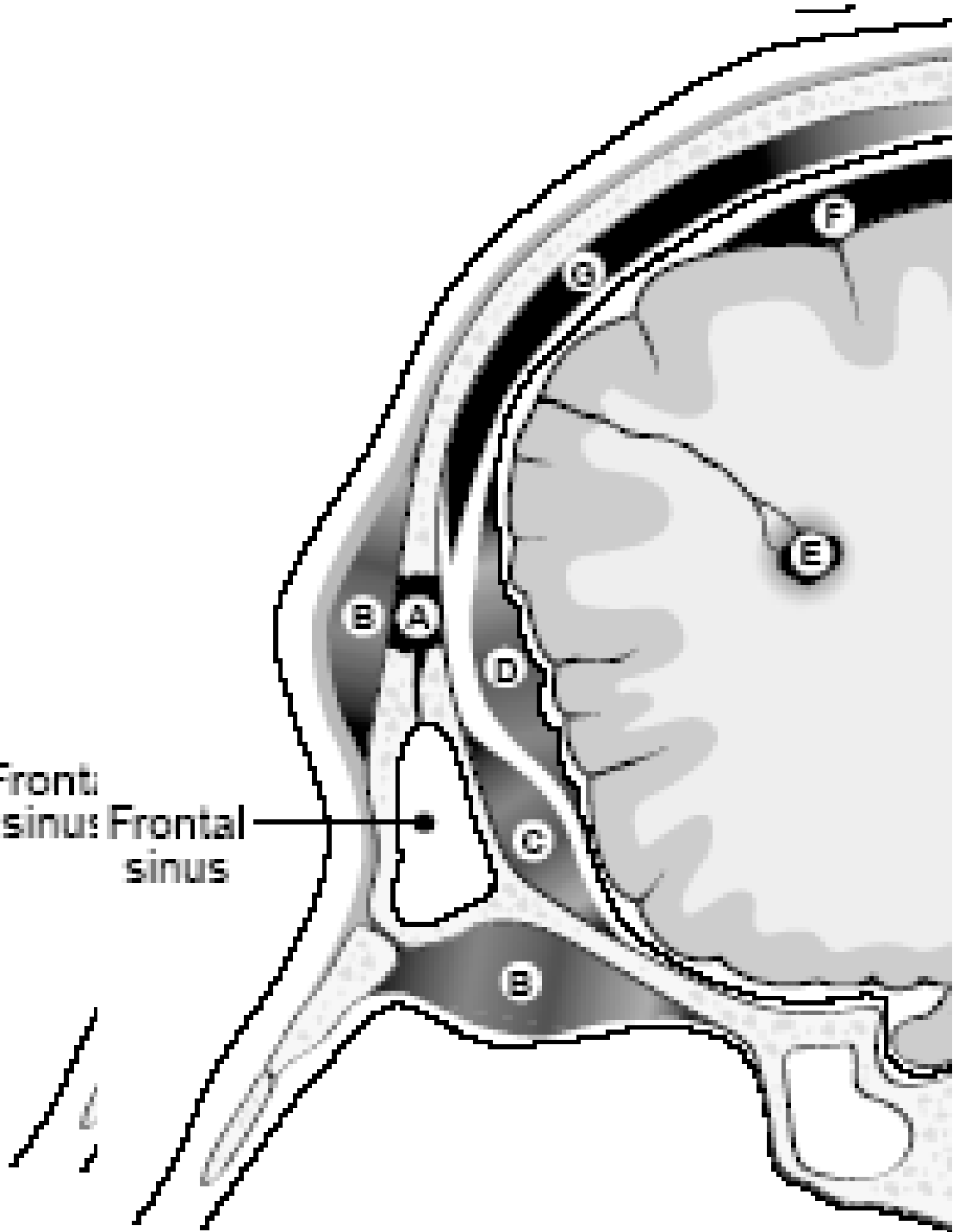
D, subdural empyema;

E, brain abscess;

F, meningitis; and

G, superior sagittal sinus
thrombosis

Frontal sinus
Frontal sinus



Cerebrospinal Fluid Rhinorrhea

Cerebrospinal Fluid Rhinorrhea

- • Cerebrospinal fluid (CSF) rhinorrhea may occur due to iatrogenic injury to the ethmoid roof or cribriform during sinus surgery, or it can be present as “spontaneous leak” due to increased intracranial pressure.

- • Thin-cut computed tomography (**CT**) scan and **β -2 transferrin** assay are the most useful studies for evaluation, along with magnetic resonance imaging (**MRI**) for certain cases.
- • The skull base can be repaired with endoscopic instruments from below or via neurosurgical approach from above.

