VASCULITI POLMONARI ANCA-CORRELATE

Key message

The diagnosis and management of a systemic vasculitis is among the most demanding challenges in clinical medicine

DEFINITION

- can be pathologically defined by the presence of:
  - cellular inflammation
  - vassel destruction and
  - tissue necrosis

The characteristics of the inflammation can be helfull in determining the underlying diagnosis, and granulomatous, eosinophilic, lymphoplasmacytic or neutrophilic patterns can be seen

DEFINITION

- The clinical features of each disease are determined by the site, size, and type of vessel involved and
- by the relative amounts of inflammation, vessel destruction and tissue necrosis

CLASSIFICATION OF THE VASCULITIDES

Primary idiopathic vasculitis

Small vassel

Wegener's granulomatosis

Churg-Strauss syndrome

Microscopic polyangiitis

Idiopathic pauci-immune rapidly progressive glomerulonephritis

Isolated pauci-immune pulmonary capillaritis

Medium vassel

Polyarteritis nodosa

Kawasaki disease

Large vassel

Giant cell arteritis

Takayasu's arteritis

Primary immune complex-mediated vasculitis

Goodpasture's syndrome

Henoch-Schonlein purpura

Bechet's disease

IgA nephropaty

Secondary vasculitis

Classic autoimmune disease

Systemic lupus erithematous

Rheumatoid arthritis

Polymiositis/drmatomyositis

Scleroderma

Antiphospholipid antibody syndrome

Essential cryoglobulinemia

Inflammatory bowel disease

Hypocomplementemic urticarial vasculitis

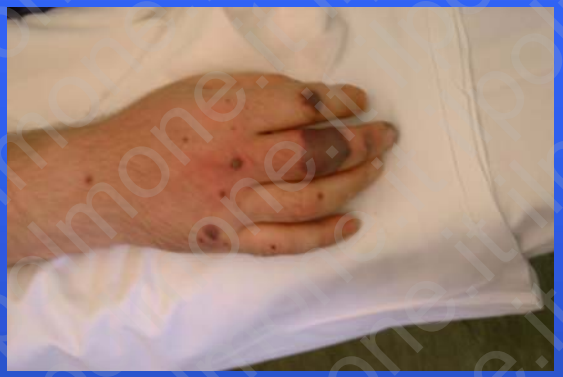
Drug-induced (e.g. propylthiouracil)

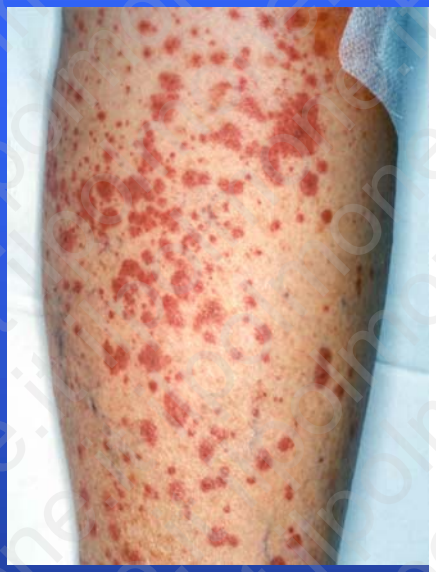
Paraneoplastic

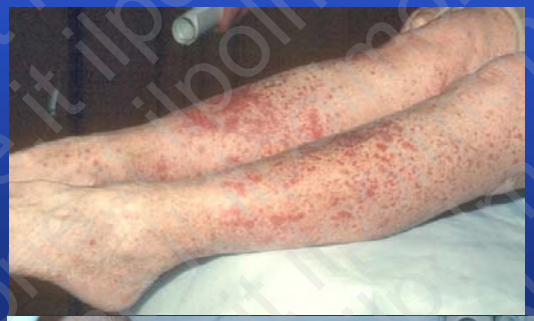
Infection

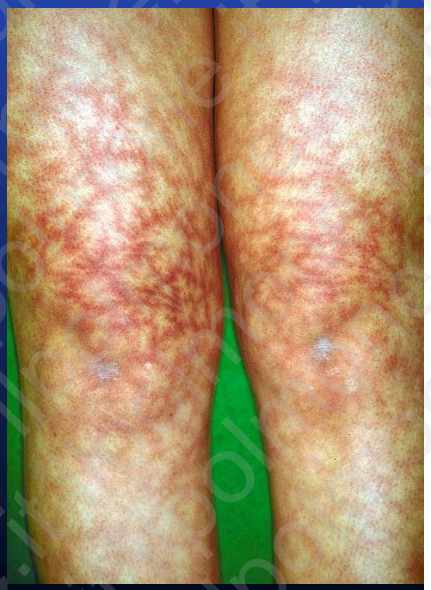
Proteiform Systemic Vasculitides

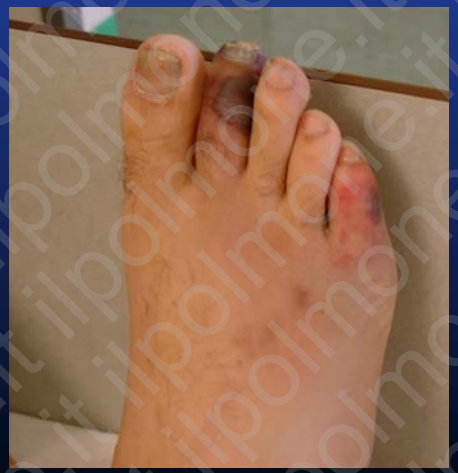
Systemic vasculitides like Proteus may change into many shapes. Systemic vasculitides can affect virtually one or more organ and/or system resulting in a wide variety of signs and symptoms, and are challenging to diagnose and to treat

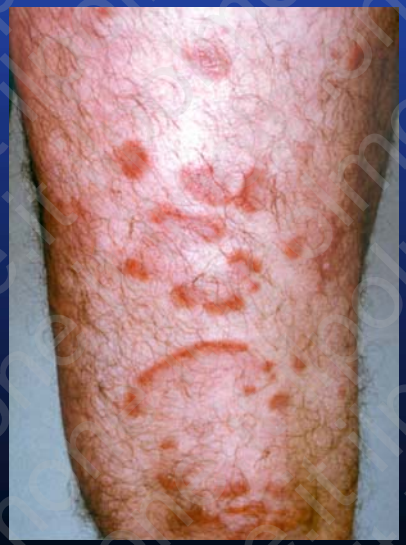


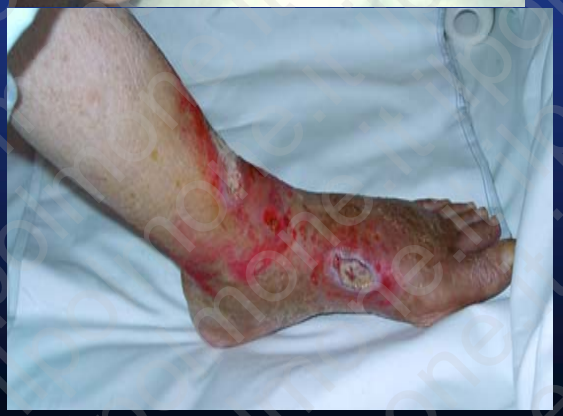




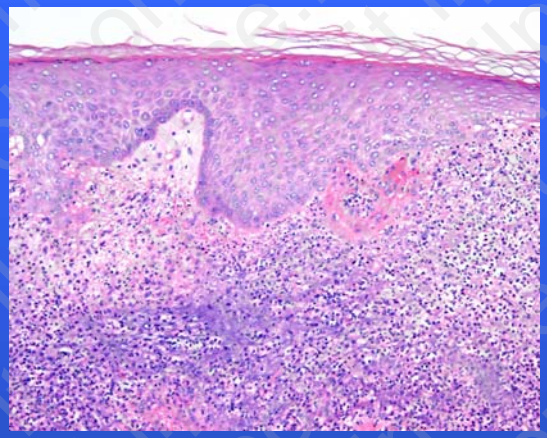


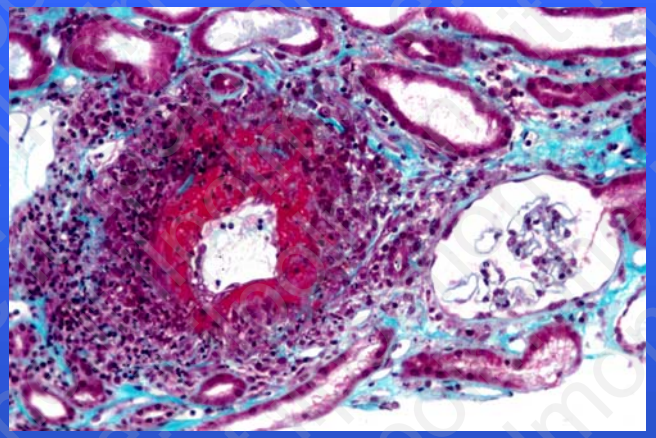


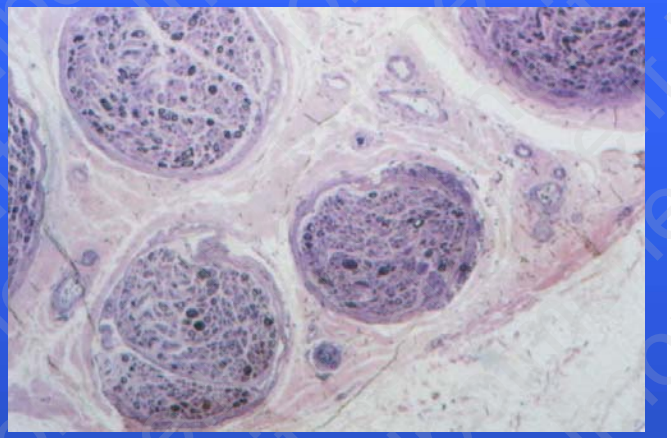


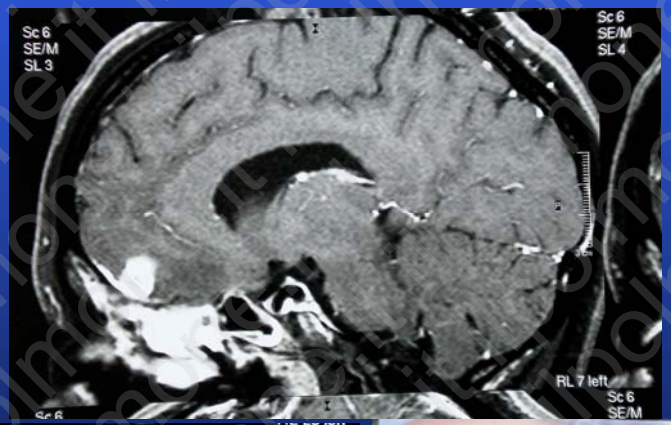


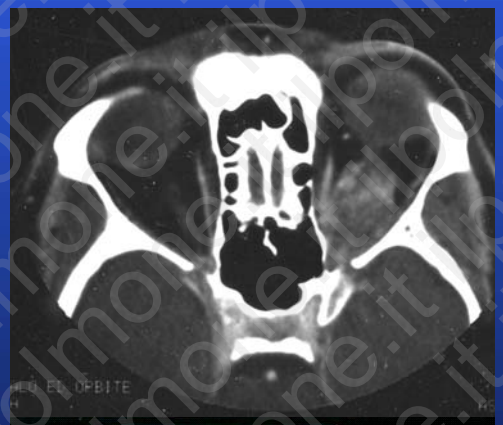
Proteiform Systemic Vasculitides

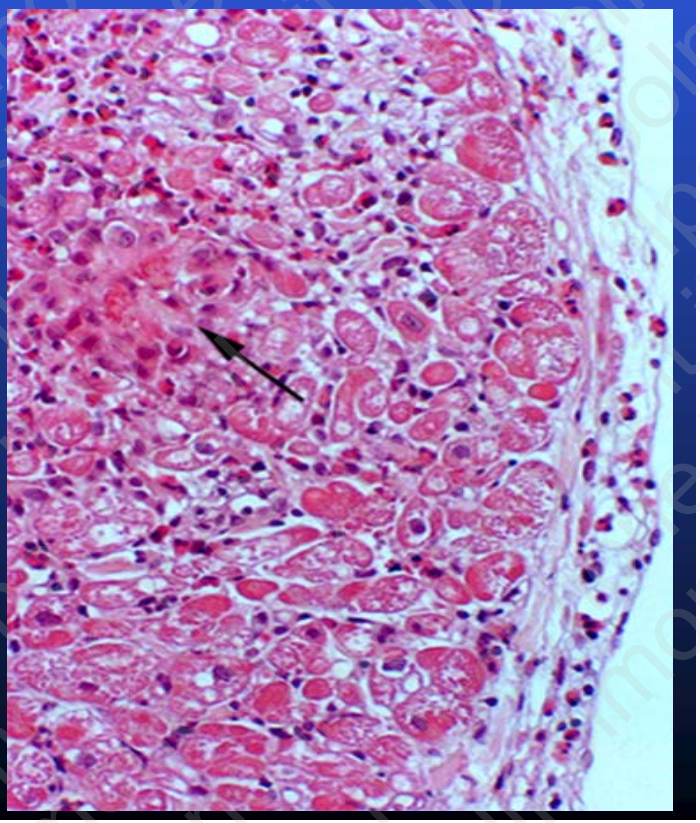


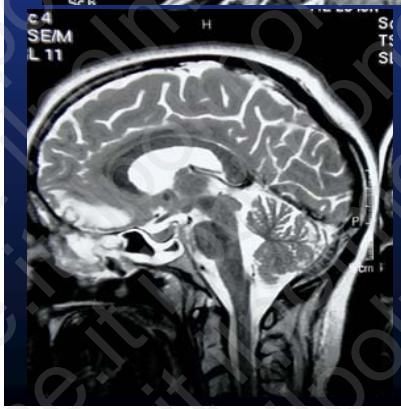


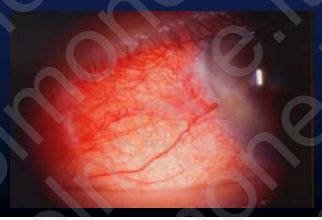


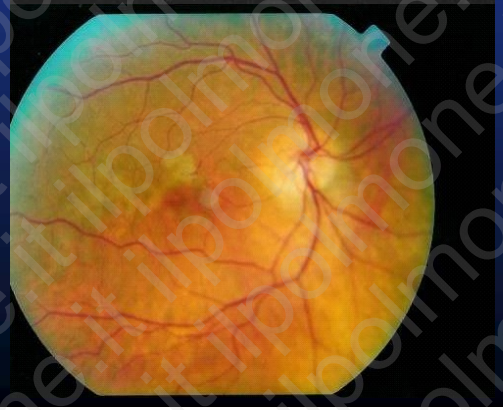




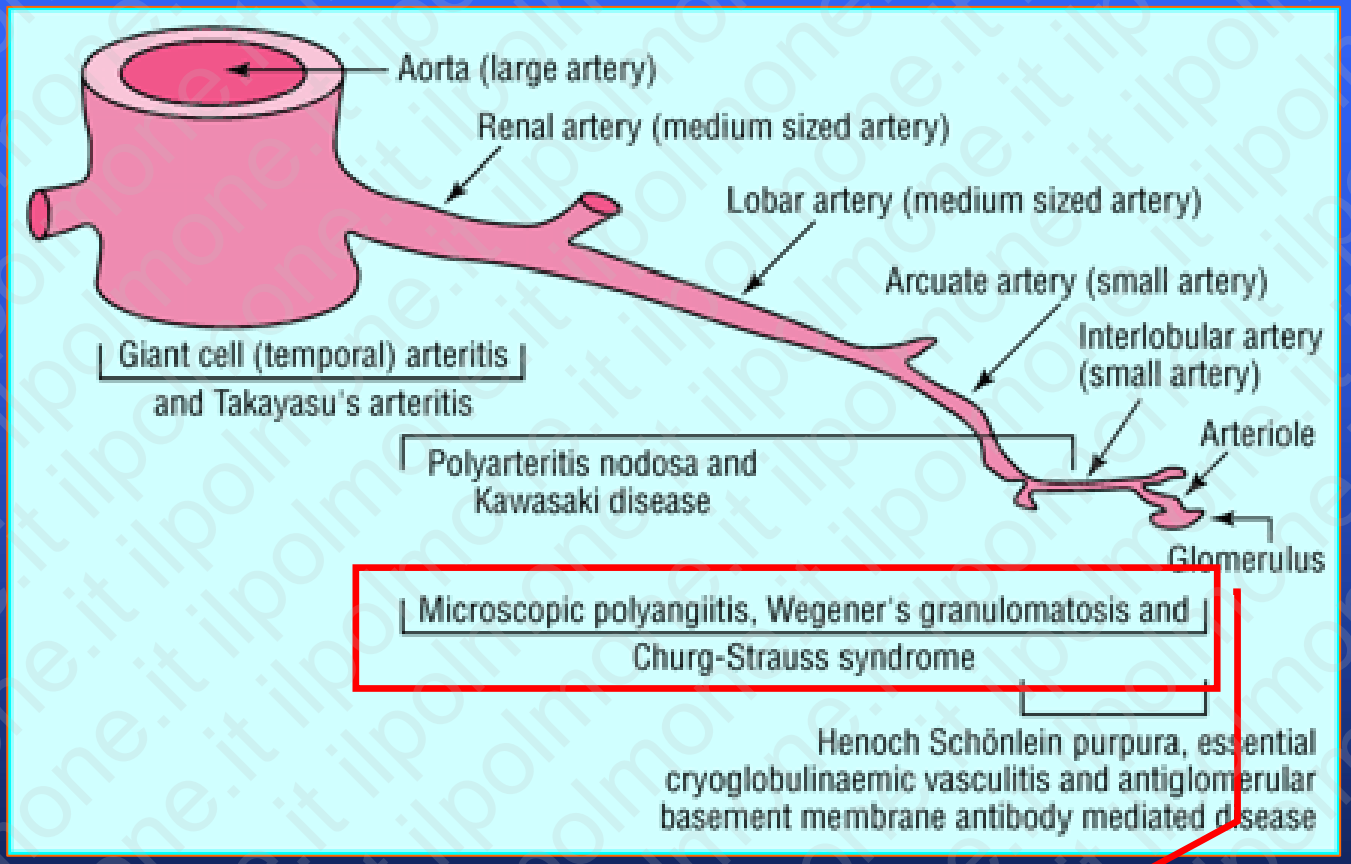






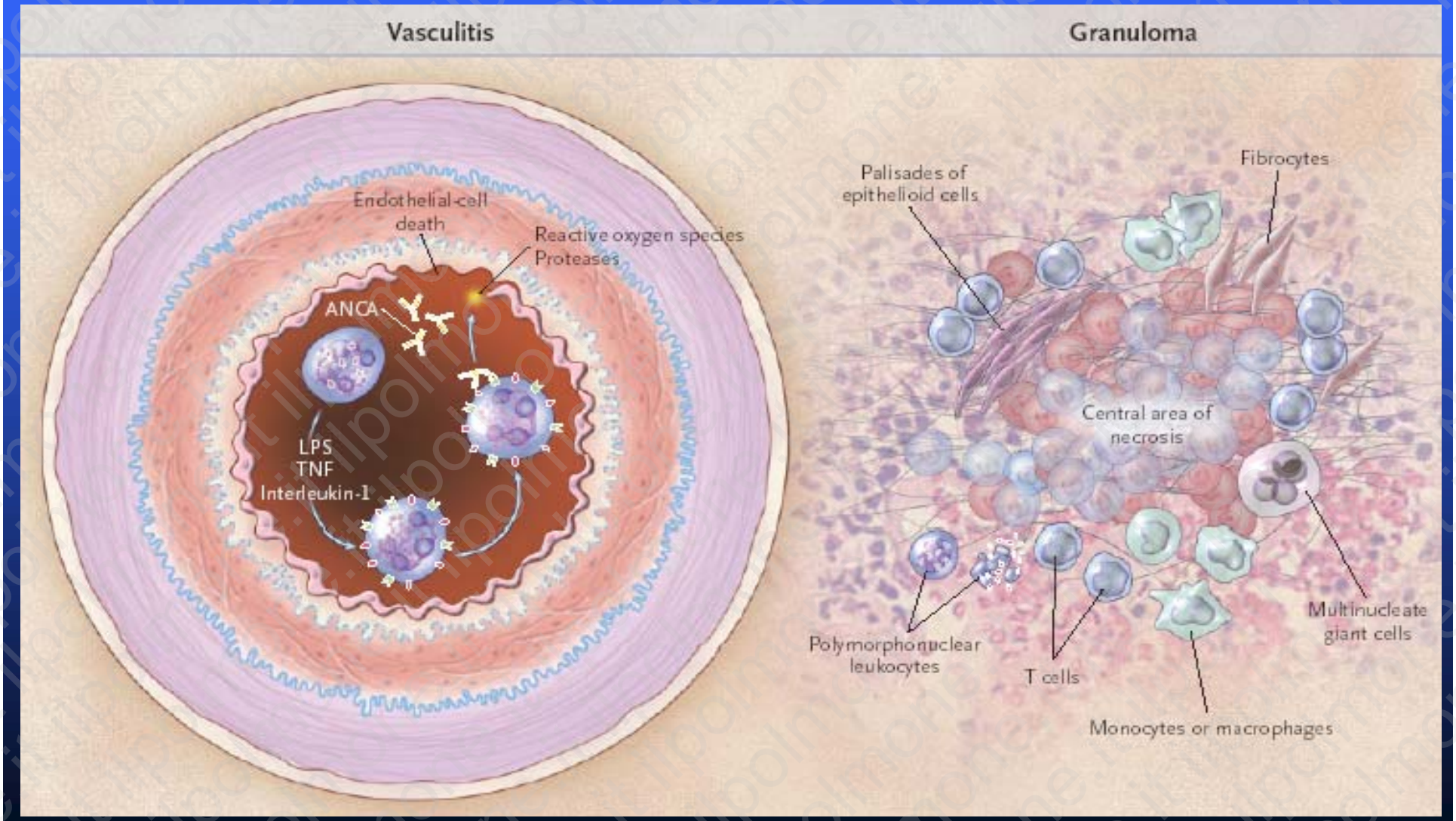


Systemic Vasculitides and Respiratory System



The respiratory system may be involved in all systemic vasculitides, although more frequently in the small vessel ANCA-associated vasculitis

Pathogenetic Role of ANCA



ANCA-associated vasculitides

- Wegener's granulomatosis (WG)

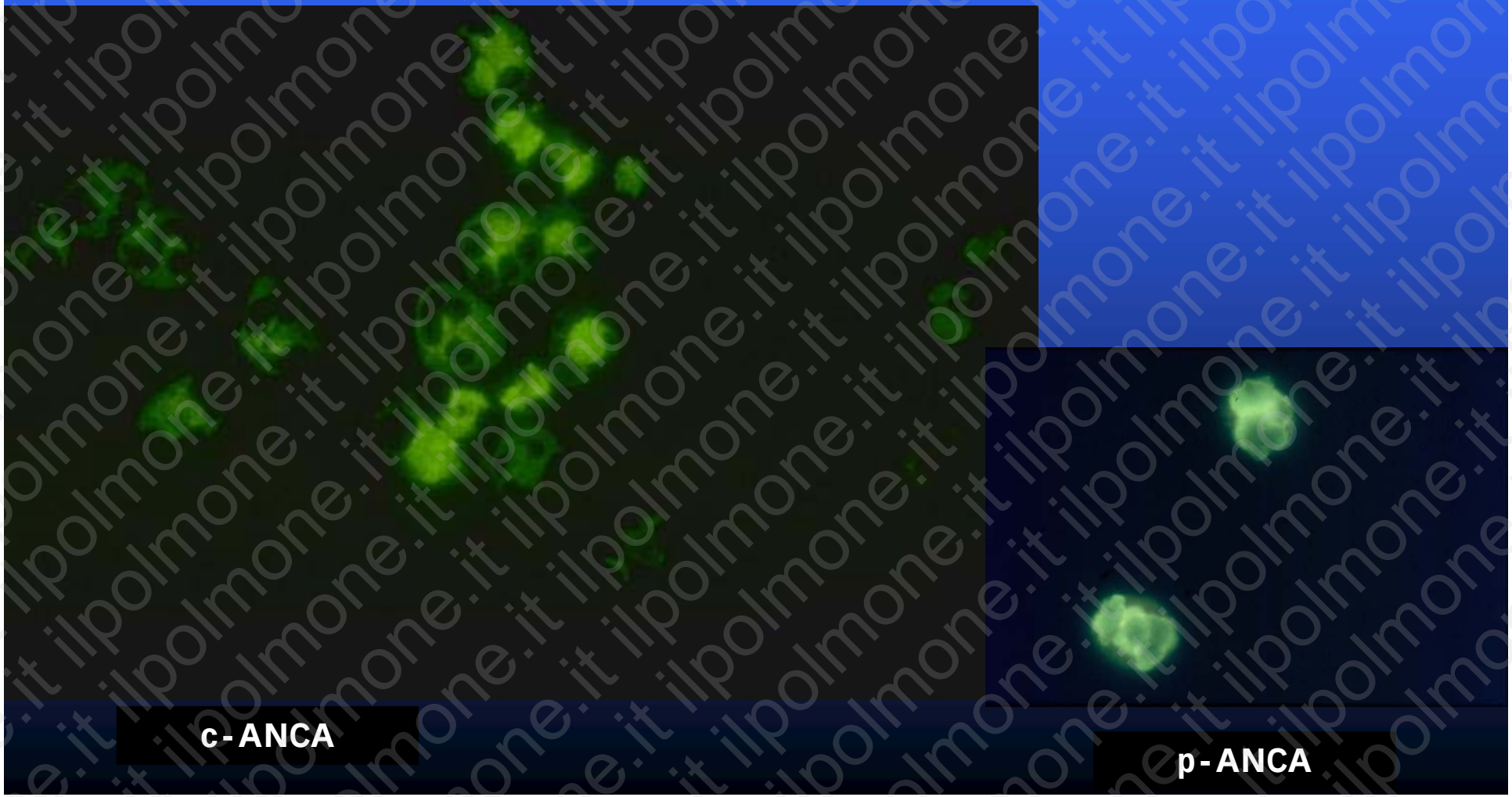
Kay message

Are grouped together because of common clinical features, pathologic involvement of the small vessels, similar responses to immunosuppressive interventions and ANCA positivity (which is common but not universal)

Autoanticorpi Anti Citoplasma dei Neutrofili (ANCA)

	Antigene bersaglio	**Malattie Associate**
c-ANCA	Proteinosi 3 (CAP 57)	Granulomatosi di Wegener (90%) Poliangite Microscopica, S. di Churg-Strauss
p-ANCA	Mieloperossidasi, Elastasi, Catepsina G, Lisozima, Lattoferrina	Vasculite Renale, RPGN, S. di Churg-Strauss (50%), Poliangite microscopica (70%), connettiviti
Atipici (x) ANCA 0 p-ANCA	Lattoferrina, Lisozima, Beta-glucuronidasi, Catepsina G	Colite Ulcerosa, Epatite Autoimmune, Colangite Sclerosante Primitiva

ANCA
Indirect immunofluorescence staining



ANCA-associated vasculitides

- Each pattern is associated with antibodies against intracellular antigen(s) found in neutrophils and monocytes
- The sensitivity, specificity, and PPV of c-ANCA for WG and p-ANCA for MPA, CSS and idiopathic pauci-immune RPGN are critical in determining their diagnostic utility
- If these tests are not applied selectively to high-risk populations, then the PPV of the testing declines

ANCA-associated vasculitides

- In patients with higher risk for an ANCA-associated vasculitis, the PPV of the tests increased without reducing sensitivity
- The combination of ANCA indirect immunofluorescent testing plus ELISA testing maximizes their sensitivity
- c-ANCA is highly sensitive (90-95%) in active, systemic WG, with a specificity of approximately 90%

ANCA-associated vasculitides

- In the proper clinical setting, a positive c-ANCA has sufficient PPV that biopsy may be deferred
- A positive p-ANCA lacks sensitivity and provides no more than suggestive evidence of CSS, MPA, or idiopathic pauci-immune RPGN because it can be found in a wide variety of settings (i.e. rheumatoid arthritis and Goodpasture's syndrome)
- There is insufficient sensitivity and specificity of an isolated rise in ANCA titer to accurately predict disease relapse in WG or other vasculitis

Other Laboratories

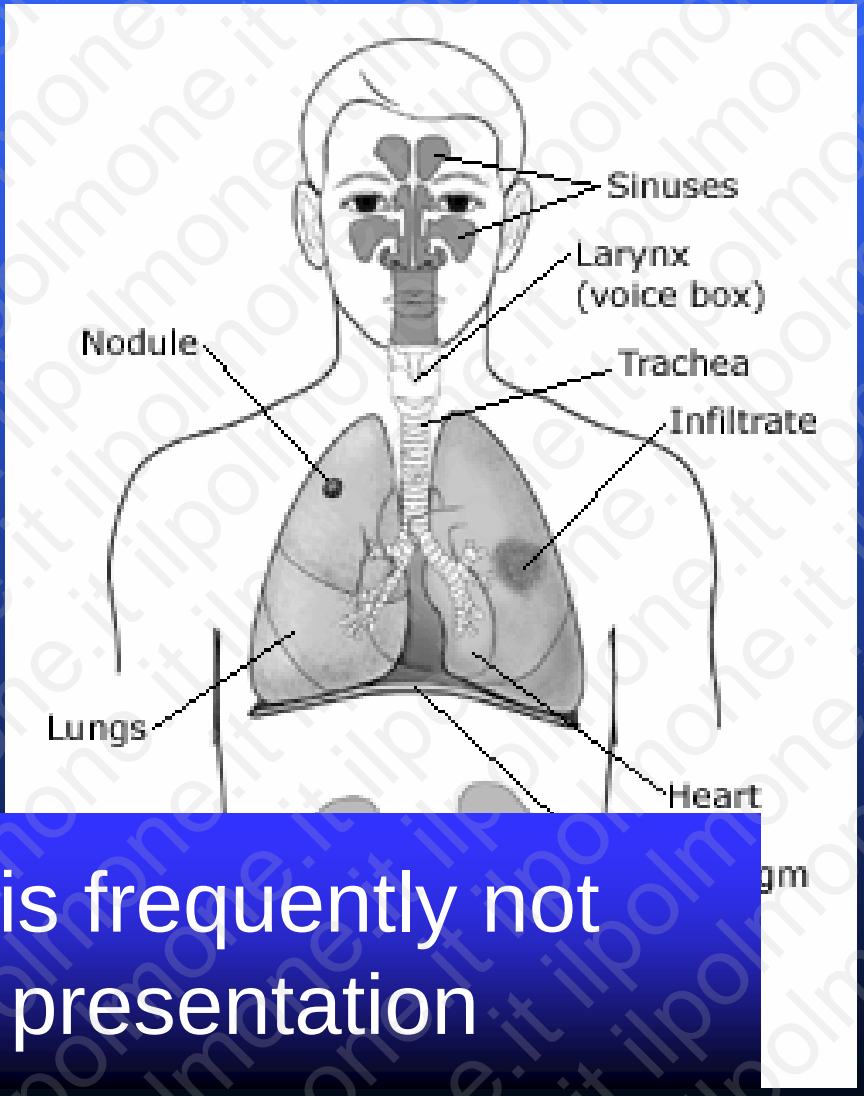
- Colture of blood and other affected organs (when applicable) must be obtained to exclude infection
- Routine laboratories
- An ↑ ERS and C-reactive protein are expected
- Urinalysis with the microscopic examination on a fresh sample

Wegener's Granulomatosis

It is clinically characterized by the triad of:

- Upper airway disease
- Lower respiratory tract disease
- Glomerulonephritis

- Constitutional symptoms and ocular, skin, musculoskeletal, central and peripheral nervous system disease are also relatively common

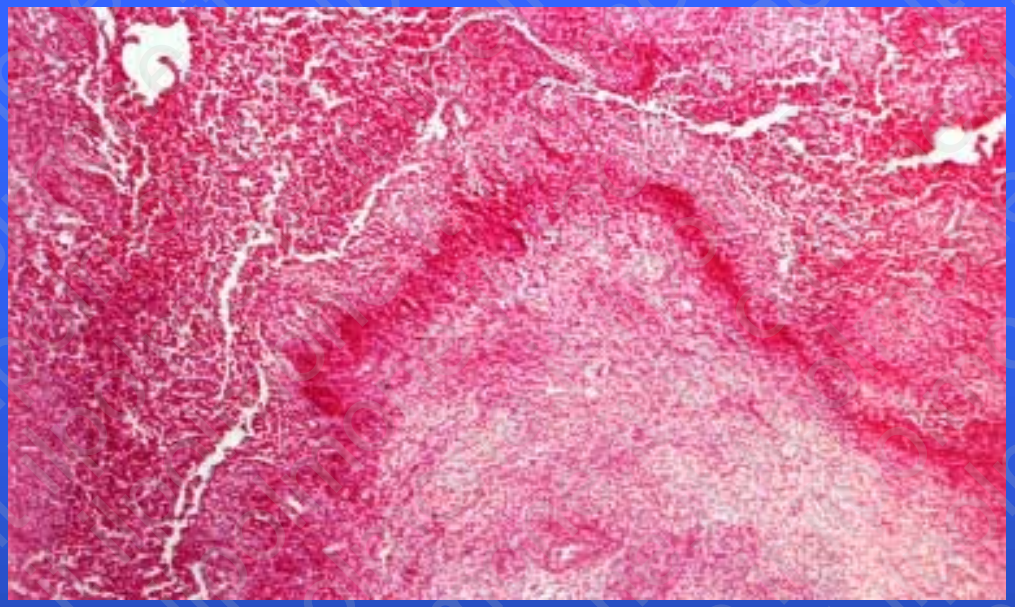


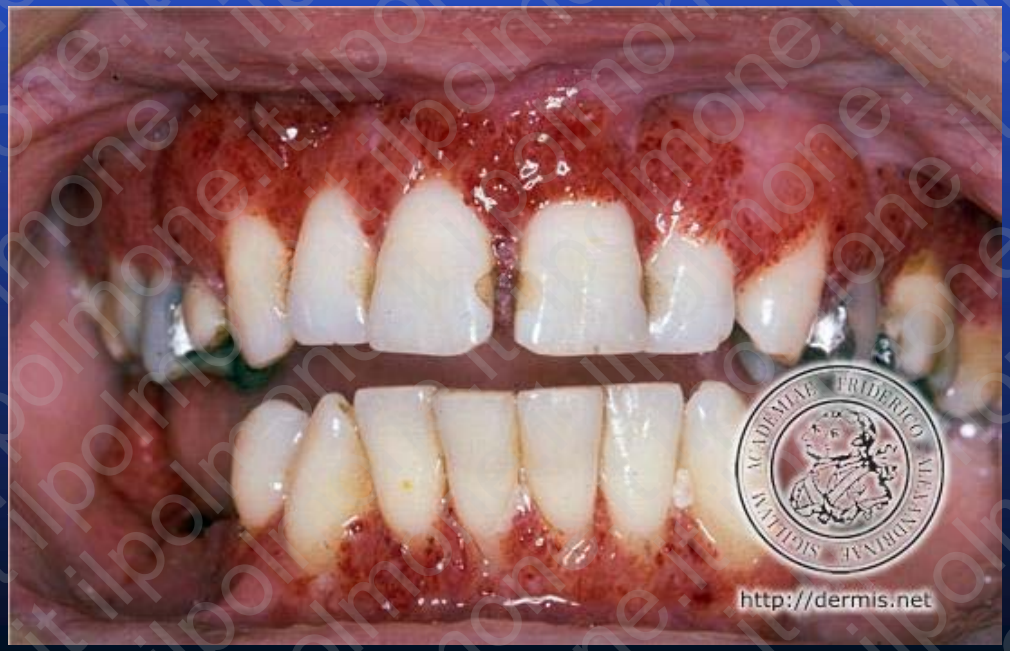
The complete triad is frequently not present at initial presentation

Wegener's Granulomatosis

clinical manifestations

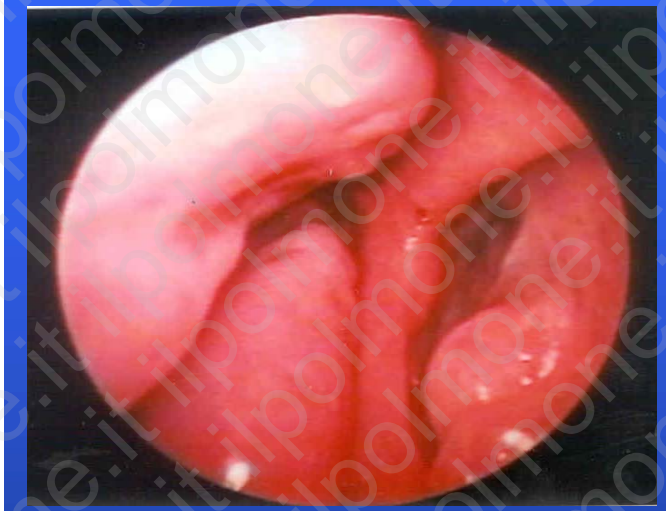
Clinical manifestations	Frequency (%)
Pulmonary (cough, hemoptysis, dyspnea, chest pain)	70-95
Upper airway (epistaxis, sinusitis,rhinorrhea, otitis, hearing impairment,ear pain, destructive lesions/bony deformities ulcerations)	70-95
Tracheobronchial (subglottic stenosis, bronchial Stenosis, endobronchial lesion)	10-55
Renal/glomerulonephritis	50-85
Cutaneous (purpura, ulcers, vesicles or nodules)	45-60
Musculoskeletal (arthralgias, myalgias, arthritis)	30-70
Ocular (conjunctivitis, uveitis, episcleritis, scleritis, proptosis)	25-55

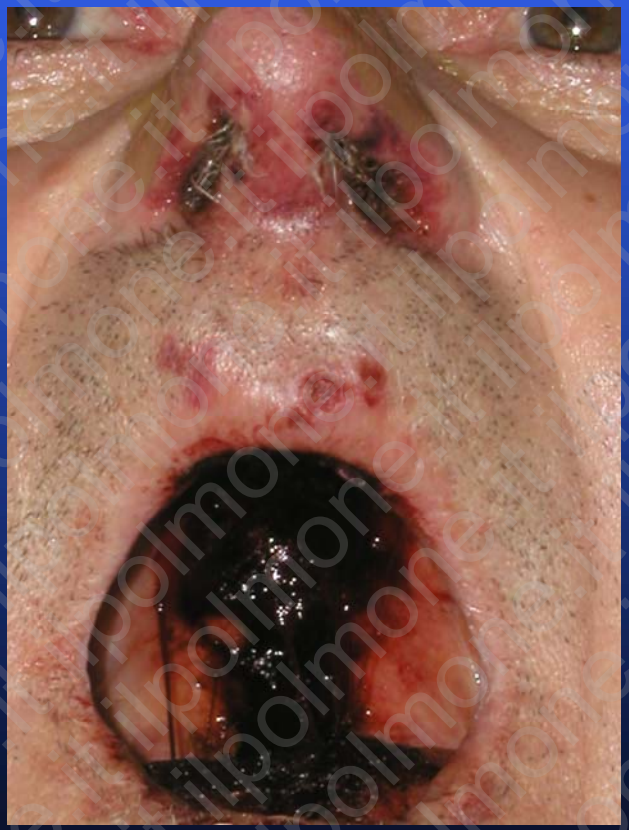


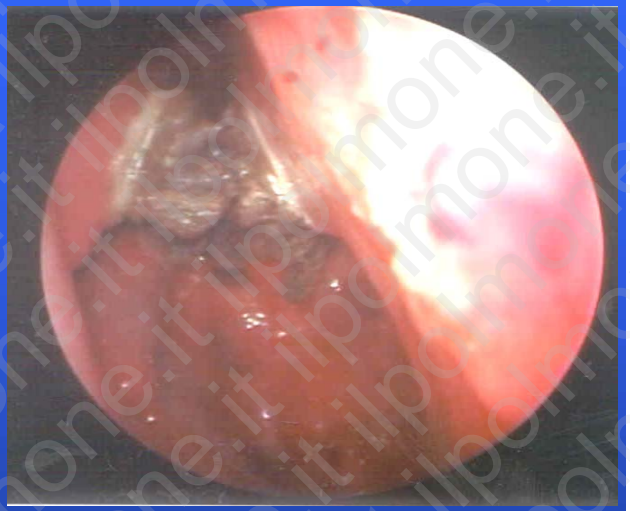


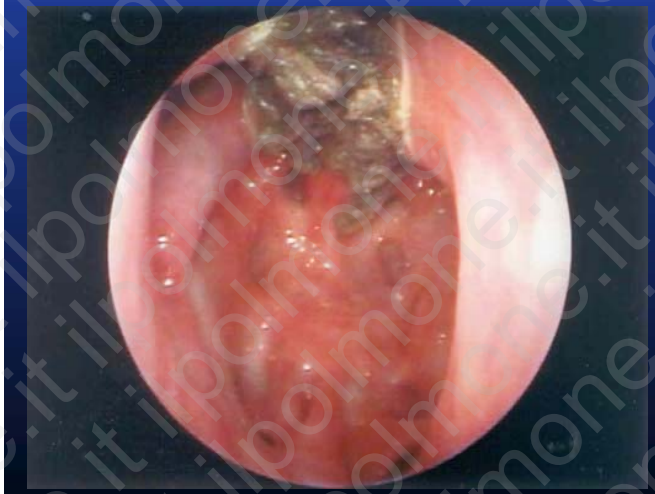
Wegener's Granulomatosis

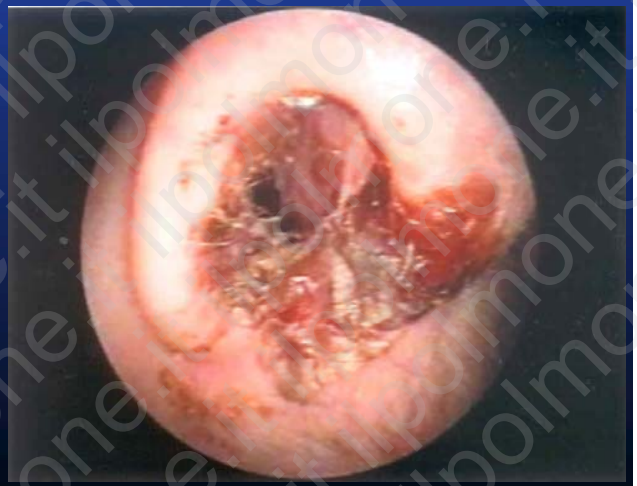
Upper Airway Involvement in Wegener's Granulomatosis



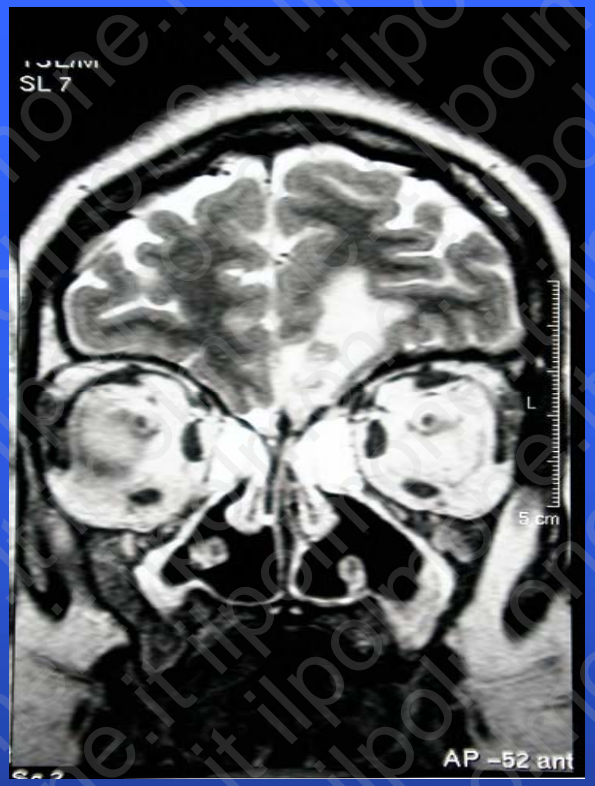


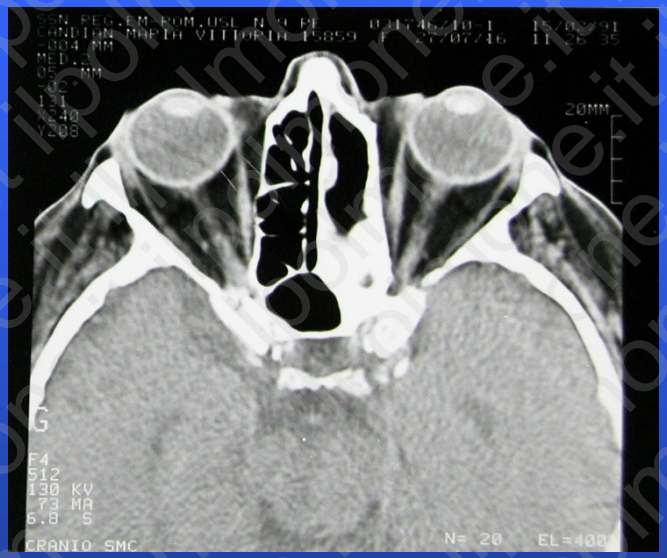


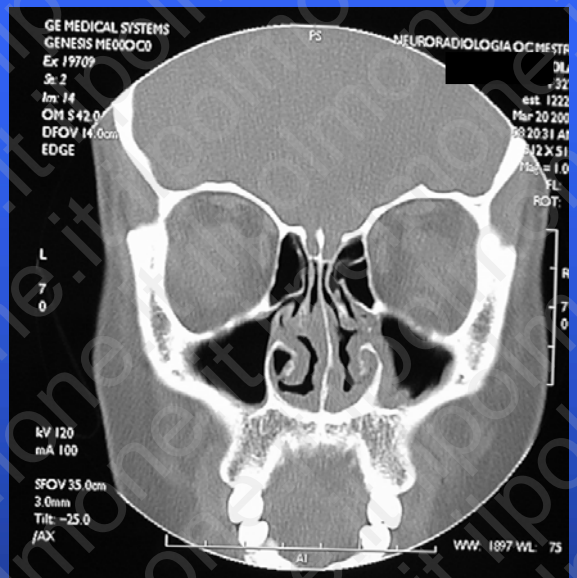


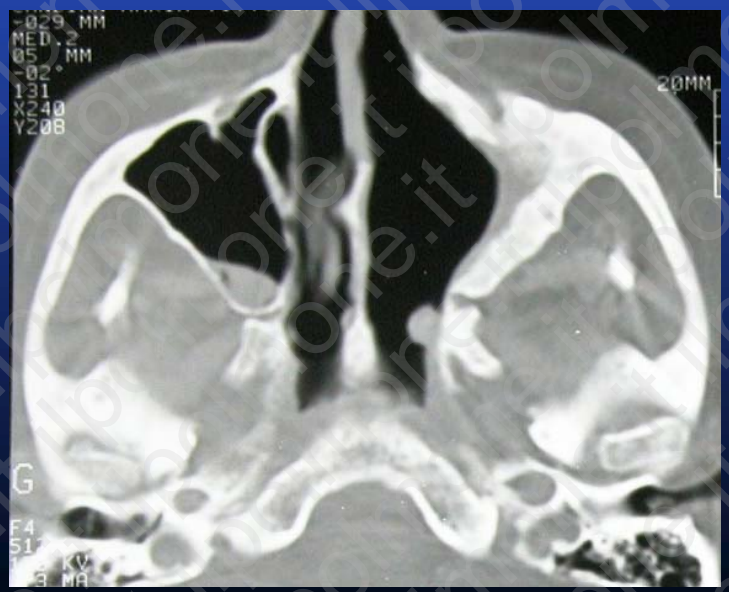


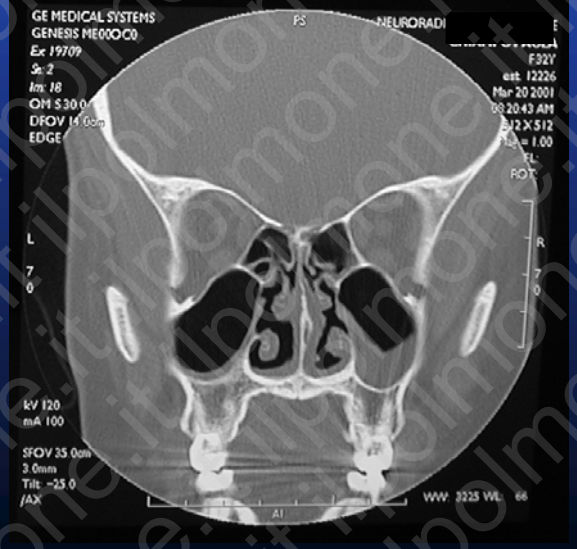
Upper Airway Involvement in Wegener's Granulomatosis



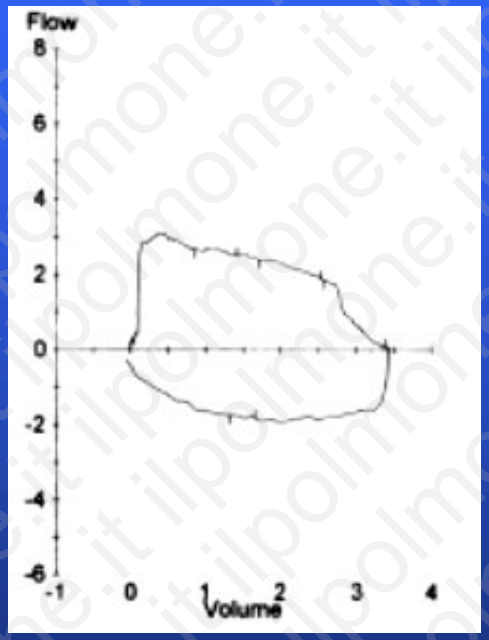


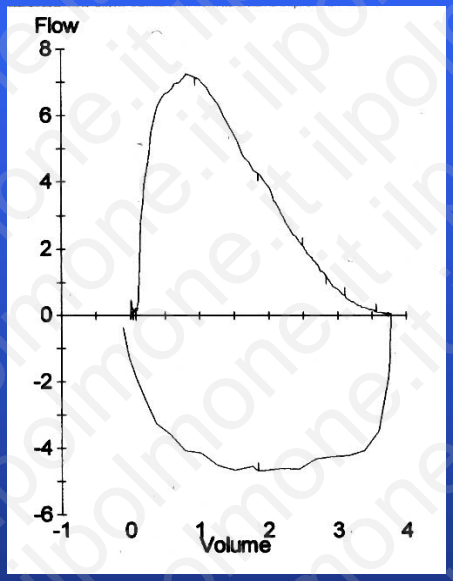


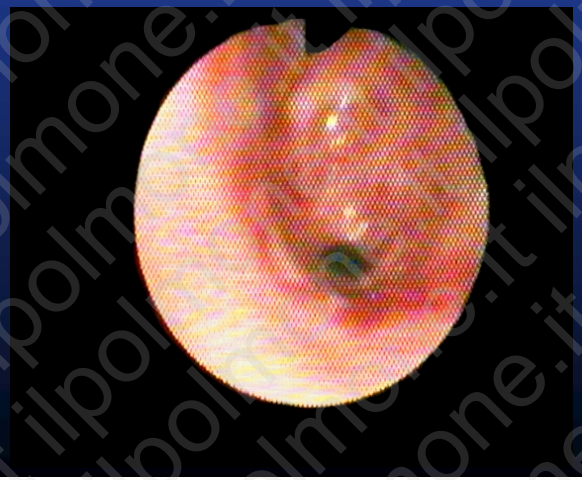


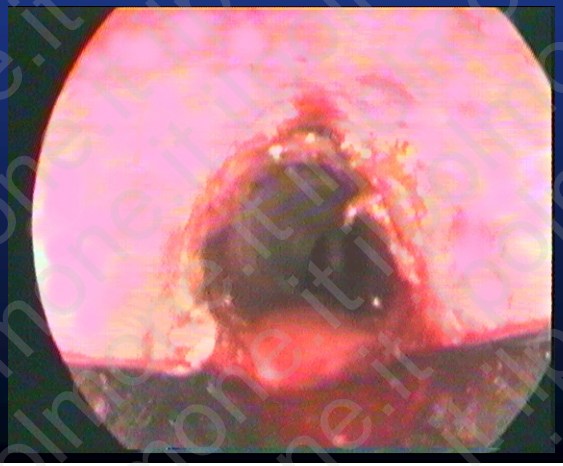


Subglottic Involvement in Wegener's Granulomatosis

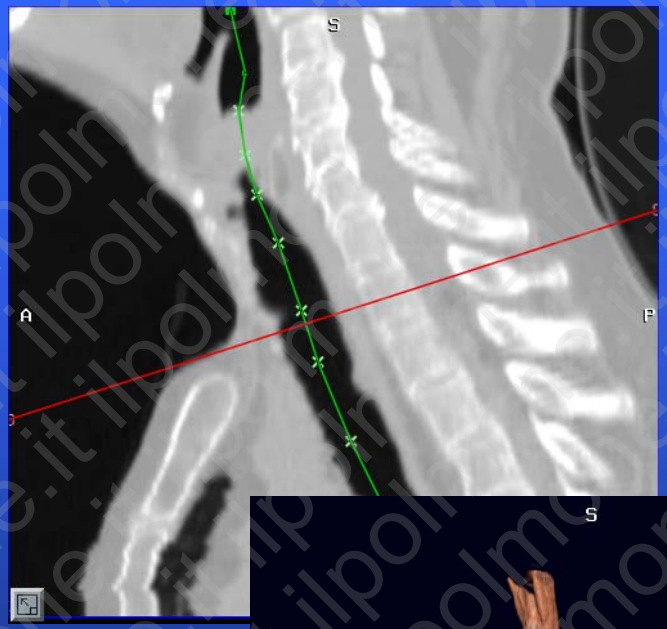


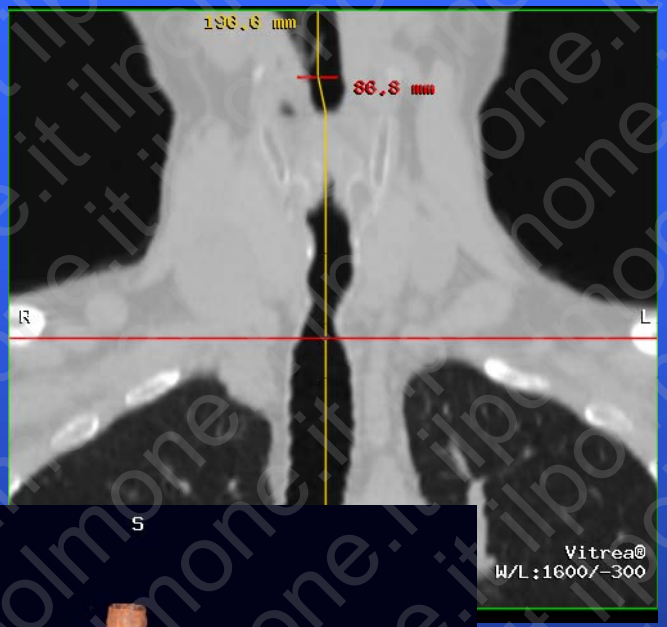




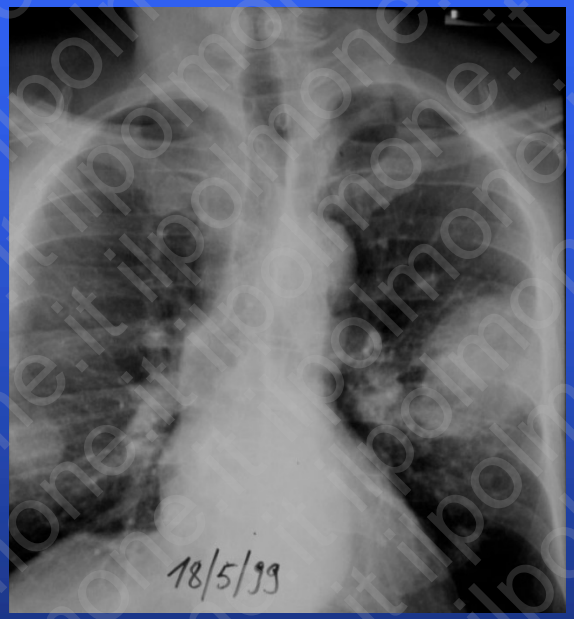


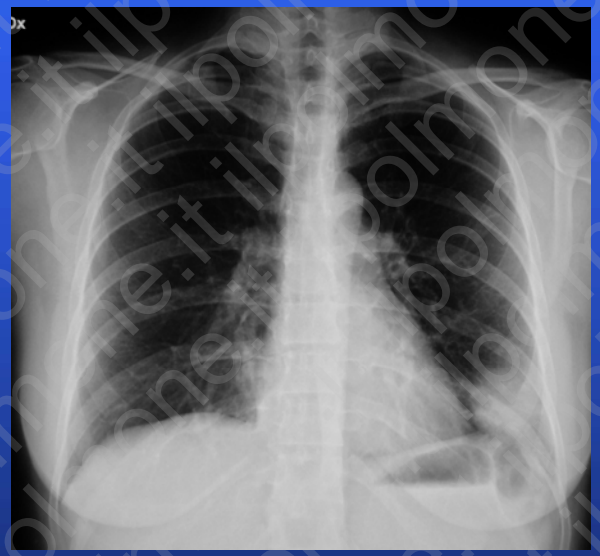
Multislice CT in Subglottic Involvement in Wegener's Granulomatosis

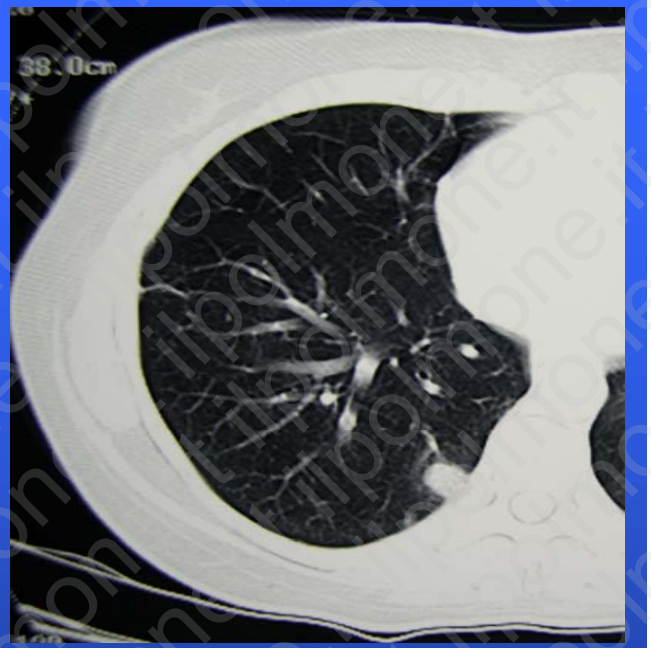


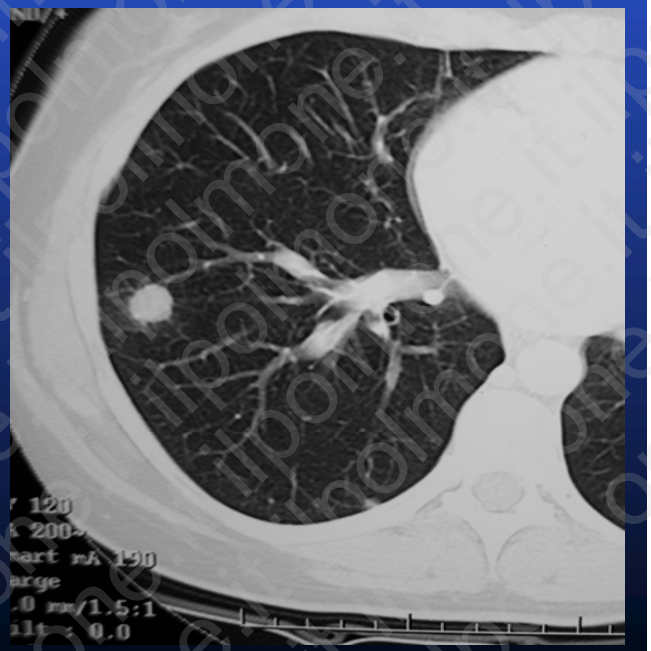


Nodules in Wegener's granulomatosis









Single or multiple nodules of varying sizes (ranging from 0.5 to 10 cm) with either well-circumscribed or ill-defined margins. The nodules are usually multiple, bilateral, with a random distribution