Raynaud Phenomenon Characteristics and Presentation

Raynaud phenomenon is characterized by stress-induced vasospasm. There are two types of Raynaud Phenomenon: primary and secondary. Primary is idiopathic, symmetrical, and reversible. On the other hand, secondary is most commonly caused by autoimmune diseases or drugs, and manifests with severe pain. Raynaud phenomenon has three clinical phases: ischemic, hypoxic, and hyperemic.



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Characteristics

Stress-induced Vasospasm
Stressed-guy pulled Vessel-spaceship
Raynaud phenomenon is characterized by recurrent vasospasm induced by increased sympathetic activity from stress or cold. It is usually found in the fingers and toes. Other peripheral sites can also be affected, including the nipples, nose, and earlobes.

Primary Type

Primary Raynaud Phenomenon
(1) Wand Blue Rain-cloud
Raynaud phenomenon can be caused by Raynaud disease (primary) or other etiologies (secondary). Raynaud disease represents primary Raynaud phenomenon, which occurs independently of other disorders. Primary Raynaud's typically occurs in females with an age of onset from 15-30 who present with reversible, symmetric disease.

Idiopathic
Idiot-hat
Primary Raynaud Phenomenon is the most common type of Raynaud phenomenon. Since its exact pathogenesis is still unclear, it is a diagnosis of exclusion after other possible etiologies are ruled out.

Reversible
Reversed-hat
In primary Raynaud phenomenon attacks are reversible, especially if the trigger is taken away. Typically, it lasts for less than an hour. This differs from secondary Raynaud phenomenon, in which attacks and changes are typically irreversible.

Symmetric
Symmetrical Dashed Line
Primary Raynaud phenomenon typically presents bilaterally and symmetrically. It can start from one finger and spread to other fingers, but thumbs are often spared. This differs from secondary Raynaud phenomenon which presents asymmetrically.

Secondary Type

Secondary Raynaud Phenomenon
(2) Tutu Blue Rain-cloud
Clinical features of secondary Raynaud's include disease in males, onset above age 40, pain, asymmetry, ulcerations on fingers, finger and toe ischemia, and abnormal nailfold capillaroscopy.

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Autoimmune Diseases

Auto-in-moon

Secondary Raynaud Phenomenon is most commonly associated with autoimmune diseases, including systemic sclerosis, SLE, mixed connective tissue disease, and Sjogren's syndrome. It is also associated with cold-associated diseases like cryoglobulinemia, and frostbite. Raynaud Phenomenon can be present in CREST syndrome (Calcinosis, Raynaud Phenomenon, Esophageal dysmotility, Sclerodactyly, Telangiectasia), which often associated with systemic sclerosis.

Drugs

Drugs

Some drugs are also known to cause Raynaud phenomenon through vasospasm, especially chemotherapeutic agents. Such drugs include bleomycin, cisplatin, cyclosporine, vinblastine, interferon-alpha, ergot, methysergide, beta-blockers, dextroamphetamine, cocaine, nicotine, methylphenidate, and clonidine.

Severe Pain

Pain-bolts

Patients with Secondary Raynaud Phenomenon can often present with painful attacks and/or ulcerations. Distal necrosis and gangrene can develop from this ulceration. Osteomyelitis can occur due to secondary infection caused by this ulceration.

Presentation

Ischemic Phase

Eye-ski-mask with White Cloud

The clinical findings of Raynaud can be divided into three phases: 1) white or pallor (ischemic phase), 2) blue or cyanosis (hypoxic phase), 3) red or erythema (hyperemic phase). The ischemic phase is a process caused by vasoconstriction in finger arterioles. The patient will present with white skin due to absent blood flow.

Hypoxic Phase

Hippo-O2 with Blue Cloud

The hypoxic phase is also known as the deoxygenation phase. It is the result of a low level of oxygen. The patient will present with cyanosis due to an increased fraction of deoxyhemoglobin.

Hyperemic Phase

Hiker-red-pants with Red Cloud

The hyperemic phase is also known as the reperfusion phase. It is a process of recovery and reperfusion that occurs after a trigger is taken away. The patient will present with erythema due to recovery and dilation of blood vessels.

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