Perioperative Implications

Preoperative Preparation
- Continue or initiate antibiotic therapy and optimize any organ system dysfunction.
- Only emergency surgery should be performed.
- Assess respiratory and cardiac reserve and hepatic and neurologic status.
- Careful monitoring.
- Arterial line may be necessary if pneumonia present.
- Myocardial valvular disease secondary to chronic Q fever may require a PA line or other invasive hemodynamic monitors.
- Increased arterial line complications due to vasculitis (rare).

Airway
- None

Induction
- Pneumonia may cause rapid desaturation.
- Hypotension and CV instability if there is cardiac valvular injury.

Maintenance
- With acute hepatitis, avoid drugs that require hepatic metabolism or decrease blood flow to the liver.

Extubation
- Resp status and CV stability must be considered.

Adjuvants
- Depends on hepatic or renal impairment.

Postoperative Period
- Monitor respiratory and/or myocardial status carefully; ICU monitoring may be required.
- Liver enzymes should be followed if there is hepatic involvement.

Anticipated Problems/Concerns
- Pts who require emergency surgery and present with an acute infection might need extended antibiotic therapy to prevent persistent *C. burnetii* infection.

Raynaud Phenomenon

Veena Graff

Risk
- Prevelance: 3-5% of population (based on population-based surveys of various ethnicities)
- Five times more prominent in women than men; commonly diagnosed in second, third, and fourth decades of life.

Perioperative Risks
- Rare morbidity of ischemia, resulting in necrosis and gangrene

Worry About
- Associated systemic disorders
- Arterial thrombosis secondary to prolonged vasospasm and/or ischemic attacks, which can lead to ulcerations and/or gangrene in affected areas
- Hypothermia causing RP attacks (i.e., secondary to cold operating rooms, lack of pt warming, emotional stress)

Overview
- Primary RP, also known as Raynaud disease: No association with systemic diseases.
- Secondary RP: Systemic associations with connective tissue disorders (most common), drugs/toxins, endocrine disorders, hematologic disorders, or cancers.
- Abnormal sensitivity of small arteries and arterioles to vasoconstrictive stimuli.
- RP attacks typically triggered by cold and/or stress and often manifest in a bilateral symmetric pattern (commonly fingertips/toes).
- Triphasic color pattern in affected areas: Pallor due to vasoconstriction (white), followed by cyanosis (blue), followed by erythema and edema (red) due to vasodilation.

Etiology
- Etiology unclear; however, likely hypotheses include:
  - Loss of nerve fibers supplying the endothelium, which normally releases vasodilating chemicals such as nitric oxide, causing vasoconstriction
  - Hyperhomocysteinemia
  - Role of angiotensin II and serotonin in increasing endothelial smooth muscle proliferation

Usual Treatment
- Noninvasive preventive measures; avoid prolonged exposure to cold, dress warmly, and do not smoke.
- Pharmacotherapies: Calcium-channel antagonists and avoidance of vasoconstrictors.

Assessment Points

System	Effect	Assessment by Hx	PE	Test
HEENT	Impaired joint mobility due to associated disorders such as scleroderma	Inability to open mouth due to limited TMJ mobility	Thorough airway assessment (neck ROM and mouth opening)	
RESP	Associated with primary pulm Htn	Chest discomfort Weakness	JVD Pulmonic ejection click	CXR, right cardiomegaly, dilated pulm artery ECG, right atrial enlargement
VASC	Small arterial occlusion	Often associated with numbness, tingling, and pain	Triphasic color pattern in affected areas: Pallor, then cyanosis, then erythema	

Key References: Wigley FM: Clinical practice. Raynaud's phenomenon, *N Engl J Med* 347(13):1001–1008, 2002; Liang YX, Gu MN, Wang SD, et al.: Perianesthesia management of Raynaud's phenomenon—a case report, *J Perianesth Nurs* 25(4):221–225, 2010.

Perioperative Implications

Preoperative Preparation
- Assess for coexisting systemic diseases.
- Potential for difficult airway; thorough airway assessment required (reduced TMJ mobility if associated with scleroderma).

Monitoring
- Standard ASA monitors.
- Can obtain ABG to assess oxygenation if unable to assess pulse oximeter readings.
- Assess risk/benefit ratio if considering arterial cannulation because of danger of arterial vasospasm.

Induction
- General or regional anesthetic options are acceptable.
- Balanced anesthetic with both types to avoid extreme fluctuations in BP.

Maintenance
- Avoid fluctuations in BP.
- Ensure pt warming.
- Use of tourniquet controversial.

Adjuvants
- Avoid vasoconstrictors if possible to avoid RP attacks.

Postoperative Period
- Ensure pt warming.
- Check pulses in all extremities.