Postoperative Fever

Postoperative fever is very common in surgical patients. It is important for students to have a running list of diagnoses to help determine the etiology of fever. The 5 W's help to understand the most common causes of post-operative fever and what timeline these causes usually follow.



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5 W's
5 W's
The 5 W's are a mnemonic used to remember the most common causes of postoperative fever, as well as help determine the etiology based on postoperative day.

Wind (Days 1-3)

Atelectasis
A-telephone-collapsing-lungs
On day 1 post-operatively, the most common cause of fever is atelectasis; thus, patients should have a chest X-ray and incentive spirometry done.

Pneumonia
Nude-Mona
Within postoperative days 1-3, pneumonia is usually the next diagnosis if atelectasis does not resolve after treatment. In order to diagnose pneumonia, we look for infiltration on a chest X-ray and obtain a sputum culture in order to treat it with antibiotics.

Water (Days 3-5)

Urinary Tract Infection from Catheter
Urinary-tract-on-fire from Cat-catheter
Fever that develops 3-5 days postoperatively can be attributed to UTI from prolonged catheterization. Urinalysis and urine cultures should be taken before moving on to treatment with antibiotics and catheter replacement.

Walking (Days 4-6)

Deep Vein Thrombosis (DVT)
Deep-V Trombone
DVT, or deep vein thrombosis, occurs from the causes in Virchow's triad (hypercoagulability, stasis, and endothelial injury). Post-operative patients are typically bed-ridden, and DVT formation may arise from lack of ambulatory activity, hence the W-word "Walking."

Pulmonary Embolism
Lungs Elmo
Pulmonary embolism (PE) is another cause of fever that occurs between postoperative days 4-6. PE leads to fever, shortness of breath, tachycardia, and hypoxia. It may arise from a DVT that has embolized into the airspace.

Wound (Days 5-7)

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Infection

Infectious-bacteria

On postoperative days 5-7, the development of fever may indicate wound involvement. The surgical site must be examined to determine if there is an abscess, gangrene, or cellulitis.

Wonder Drugs (Days 7+)

Drugs

Med-bottle

"Wonder drugs" refers to fever caused iatrogenically, which typically arises after the 7th post-operative day. Drugs include serotonergics causing serotonin syndrome, or drugs with dopamine blocking effects (e.g. antipsychotics or antiemetics) causing neuroleptic malignant syndrome. There are also reactions to sulfa drugs, or pain drug withdrawal. Furthermore, there can be IV infection and blood transfusion reactions.

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