



POST COVID INDUCED GALLBLADDER GANGRENE

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Abstract

The entire world is suffering from 3rd wave of COVID-19. Severe acute respiratory syndrome corona virus-2 (SARSCOV-2) is a pathogenic organism responsible for the coronavirus disease 2019 as per guidelines by the National Institute for Health and Care Excellence (NICE) the post-COVID19 syndrome is defined as symptoms that develop during or after an infection consistent with COVID19 continuing for more than 12weeks. During this post, COVID19 syndrome is recognized as a multi-organ disease in another respiratory system by the formation of blood clots and Inflammation. During these condition excessive release of cytokine (Inflammatory Mediators) which leads to inflammation of the organs (gastrointestinal tract, brain, heart, kidneys, etc.) But inflammation of the gallbladder is very rare. Due to inflammation in the gall bladder, it forms dry gangrene. Researchers suggest the presence of SARS-COV-2 virus in gall bladder through a confirmatory test quantitative real-time polymerase chain reaction qRTPCR test. This condition is treated with surgery called laparoscopic cholecystectomy.

Keywords: post-COVID complication, gallbladder gangrene, laparoscopic cholecystectomy

INTRODUCTION

POST-COVIDSYNDROME-also called long COVID, long-haul COVID, and post acuteCOVID-19, long term effect of COVID (or) chronic COVID

After recovery from COVID-19 the patient continue to experience various symptoms like cough, low grade fever, fatigue, shortness of breath, chest pain,

headaches, neurocognitive difficulties, muscle pains, weakness GI-upset, rashes, metabolic disruption etc., these symptoms can be experience four or more weeks after 1st being infected with the virus that causes COVID-19.

During the treatment excessive use of corticosteroids

High use of Corticosteroids induced disorders	Symptoms
bones	Direct adverse effects on osteoblast, osteoclasts, osteocytes.
Gastrointestinal tract	GI bleeding Super infections (black fungus)

Brain	Neuromuscular weakness Neuropsychiatric effects Stroke
Heart	Myocardial infraction
Electrolyte imbalance	Hypernatremia Hyperglycemia
Blood disorders	During COVID-19 infection the virus weakens blood vessel and cause them to leaks and finally it leads cell necrosis

GALL BLADDER ANATOMY – gall bladder is small pear shaped organ present in the right side of your abdomen beneath your liver

Functions

It holds digestive fluid that released into small intestine

Reverser of bile

Effects on PH of bile

Regulates pressure of biliary system

GALL BLADDER GANGRENE - It is defined as the dead of tissue in gall bladder. It occurs due to decreased oxygen & blood supply due viral infections (COVID-19). Most risk factors are blood vessel diseases, diabetes, and suppressed immune system. And common symptoms includes – fever, pain in right upper quadrant of abdomen, decreased blood pressure, nausea, vomiting, Tenderness over abdomen.

MECHANISM

According to international committee on taxonomy of viruses the SARSCOV-2 which is the large virus containing a single strand positive RNA genome encapsulated with a membrane envelope and the viral membrane is made up of the crown like appearance called glycoproteins spikes, and the spike glycoproteins is a type-1 membrane proteins that facilitates viral infections Corona virus primarily effects lungs (directly binds to ACE receptors)and then they replicates viral RNA genome and further the viral infection spreads to other body parts later it enters gastrointestinal tract i.e., bile duct, gallbladder and associated structures. Gall bladder epithelial cells

similar to bile ductal cells which are highly made up of ACE-2 like receptors.

This SARSCOV-2virus dysregulates immunological response against the virus resulting in severe inflammation & swelling of gallbladder associated decreased oxygen to gallbladder associated with abscess formation (or) gangrenous necrosis of the gallbladder. During this acute cholecystitis is potentially serious because these gangrene, eventually spreads to other organs of the body.

DIAGNOSIS

Blood test

Increased C reactive protein

Ultrasonography

Hepatic-biliary nuclear imaging

Magnetic resonance

cholangiopancreatography(MRCP)

Abdominal computed Tomography.

PHARMACOTHERAPY

Stabilization (oxygen supplementation, IV fluids)

Analgesics

Anti- spasmotic agents

Broad spectrum antibiotics

Surgery – laparoscopic cholecystectomy [removal of necrotic gallbladder]

Before surgery a general anesthesia is given, 2 tubes are inserted one (throat) for airway & another (arm) for delivering fluids and medications

After surgery avoid lifting more heavy objects, drink plenty of water, eat high fiber rich foods, and slowly increase your daily activity day by day.

CONCLUSION

Researchers & Reports suggests that lineage beta-corona viruses that are highly pathogenic to human such as the SARS-COV-2 can affect all parts of gastrointestinal tract. It is characterized by deregulated host inflammatory response. Thus a proper plan should there for monitoring, preventing & managing post-COVID19 complications. Patients are experiencing delayed morbidity and disability as a result of post COVID syndrome. And also preventive measures i.e. mask, sanitization, social distance should be proper followed.

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