

# [Episode 189: Timing of Surgery After Recovery from COVID-19 with Jason Chi](#)

On this episode: Dr. Jed Wolpaw With Dr. Jason Chi

In this 189th episode I welcome Dr. Jason Chi to the show to discuss what we know about how to plan for surgery in patients who have recovered from COVID-19.

## Questions & Notes

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## Introduction

1:14 - 5:06

Dr. Jason Chi

- Cardiac/general anesthesiologist at Veterans Affairs Medical Center in Palo Alto, Ca.
- There was a concern for complications from physiological changes from COVID-19
- No answer for how long a patient should recover from COVID-19 before undergoing surgery
- Very general guidance regarding this specific topic

## Approach

6:07 - 8:11

### 3 Pronged Approach

- 1) Emerging knowledge about COVID-19 and it's pathophysiology
  - o Effects on multiple organ systems
- 2) Used existing knowledge of other disease processes and relationship with perioperative risk
  - o i.e. acute infections
- 3) Literature from previous pandemics
  - o i.e. 2019 H1N1 pandemic

## Results

8:12 - 24:42

### Decision Tool: "Timing of intermediate risk & high risk surgery after COVID-19 Diagnosis"

- **Question to answer:** "How long should a patient who has recovered from COVID-19 wait before having surgery with the goal of minimizing post-op complications?"
- Symptom driven and time driven approach to these patients
- Time from diagnosis was chosen as a starting point for counting the wait time
  - o Time of diagnosis is a definite time mark
  - o Time from sx onset/offset can be vague and subjective
  - o Only study which looked at this question used time of diagnosis
- **Category 1:** patients that were asymptomatic during COVID-19 admission or mild/transient sx
  - o Minimum wait time of 4 weeks from time of diagnosis until surgery
    - Support from emerging literature and pre-existing literature regarding respiratory infections after surgery
    - Airway hyperreactivity can persist for 2-4 weeks after respiratory infection
    - Respiratory infection up to 1 month prior to surgery has a higher risk of post-op complications
    - COVID surge collaborative - looked at 122 patients who underwent cancer surgery after COVID-19 diagnosis. Post-op pulmonary complications: pneumonia, ARDS, unexpected ventilation after 30 days of surgery. Result: OR 3.8 if patient had had a previous COVID infection. After 4 weeks, risk of pulm complications were 0%. Patient's with a pre-existing respiratory illness had an OR of 2.3
      - Downsides: small study, severity of patient illness was not described
- **Category 2:** patients who were symptomatic during COVID-19 admission (cough, SOB, chest pain, fatigue)

- Minimum wait time of 6 weeks from time of diagnosis until surgery
- **Category 3:** patients who were diabetic, hospitalized, or immunocompromised
  - Minimum wait time of 8-10 weeks from time of diagnosis until surgery
  - Patients with diabetes have a higher risk of severe COVID, being hospitalized, and being admitted to ICU during the COVID-19 pandemic
  - Diabetes represents an immunocompromised state
  - Fun fact: ACE-II receptor (receptor for SARS) is expressed widely throughout the body including on pancreatic cells. In the 2004 SARS outbreak, coronavirus was found to enter the pancreas and cause diabetes.
- **Category 4:** patients who were admitted to ICU (no distinction between intubated or not)
  - Minimum wait time of 12 weeks from time of diagnosis until surgery
  - A lot of this data came from 2009 H1N1 pandemic
    - Taiwanese study looked at patients that had survived H1N1 who had been in the ICU: parameters of pulmonary function such as TLC, FVC, FEV1 and VLCO continued to improve up to 3 months after patients were discharged from the hospital

## Literature

### Studies show that patients still have residual symptoms after COVID

24:43 - 28:29

#### Italian study in JAMA

- At a median follow up of 60 days:
  - Only 12% of patients reported being symptom free
  - 43% reported dyspnea at 60 days

#### Study from US in M&M Weekly Report

- 29% reported dyspnea at 2-3 weeks after the diagnosis (outpatients)

#### Cardiac Anesthesia

28:30 - 31:26

#### German cardiac MRI study

- 100 adult patients at a median of 71 days (10 wks) after diagnosis
- Evidence of ongoing myocardial inflammation in 60% of patients (non-correlated with the severity of COVID disease when they had COVID)
- Troponin detectable in  $\frac{3}{4}$  of patients
- Patients that had evidence of myocardial inflammation of a slight decrease in EF (non-significant), which means that patients who have a normal EF could still have ongoing myocardial inflammation

#### Ongoing study: Covid Surg Global Week study

31:27 - 33:16

- Any hospital around the world to input patient data
- Patients that had recovered from COVID then undergone surgery at various points after recovery
- Goal: to study the timing of recovery of COVID, timing of surgery, and post-op complication

**Minari** (a plant native to Korea): A movie about a Korean family that immigrated to Arkansas

## Doctors Without Borders

Daniel Tiger

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