PATIENT PRESENTATION

- A 21-year-old male previously with a past medical history significant for hypertension and obesity presented with symptoms of left sided hemiparesis, left facial droop and dyspnea. The patient had previously been diagnosed with SARS-CoV-2 infection seven days prior to presentation to the hospital.

WORKUP

- A head CT demonstrated concern for a large right MCA infarct with cerebral edema and midline shift.
- A brain MRI conducted eight days after presentation/surgery demonstrated stable appearance of the right MCA infarct with hemorrhagic conversion, similar overall edema.
- The transthoracic echo demonstrated a patent foramen ovale interatrial shunt.
- Electrocardiogram demonstrated no evidence of atrial fibrillation.

MANAGEMENT AND OUTCOMES

- Intensivists stabilized the patient with intubation however the patient rapidly declined and was immediately taken for a right sided decompressive craniectomy.
- Cytotoxic cerebral edema was managed post-operatively with mannitol, hypertonic saline, and glyburide.
- Patient was admitted to inpatient rehabilitation and made significant progress regaining continence of bowel and bladder as well as progressing from total assist to contact guard assist with all bed mobility, transfers, ambulation, and activities of daily living.
- The patient was readmitted to the hospital four months after his original surgery for subsequent cranioplasty without complications.

FIGURES

Figure 1: Large right MCA infarct with cerebral edema and left-to-right midline shift.
Figure 2: MRI Brain showing Stable appearance of the ischemic right posterior cerebral hemisphere infarct with MCA/PCA territory involvement and hemorrhagic conversion. Similar overall edema, hemorrhage, and herniation through the overlying decompressive craniectomy and compared to CT.

DISCUSSION

- COVID-19 took the world by storm in 2020 causing the largest known pandemic in past century. This contagious disease causes severe acute respiratory syndrome in varying degrees of severity in patients.
- Thrombosis and ischemic stroke remain an underestimated complication of COVID-19 infection.
- The proposed mechanism of thrombosis results from the activation of the innate immune system which serves to activate the inflammatory thrombosis pathway.
- A review of the literature reflects only five people under the age of 50 who sustained ischemic stroke after SARS-CoV-2 infection.
- We learned in this case that we must maintain thrombotic or embolic stroke on the differential diagnosis even for younger patients with neurologic symptoms after COVID infection.

CONCLUSIONS

- A COVID-19 infection can yield a plethora of serious potential sequelae stemming from the coagulopathy that it induces.
- Ischemic stroke is becoming a known potential sequelae however it remains rare in young patients. It is important for providers to include ischemic stroke on the differential diagnosis for a young patient with a history of COVID-19 infection presenting with focal neurologic deficits.
- Multidisciplinary inpatient rehabilitation therapies prove to be an excellent approach to rehabilitate patients with very large debilitating strokes.

REFERENCES