Aortic Dissection in Geno-Negative Marfan Syndrome Patient with COVID-19

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CASE REPORT

A 17 year old male with no known medical history, Marfanoid features and recent COVID-19 diagnosis with complete respiratory symptom resolution, presented with chest pain and heart burn.

CT angiogram revealed an 8 cm Stanford type A dissecting aortic aneurysm and he underwent successful repair with side branching graft under DHCA (deep hypothermic cardiac arrest)

Post-operative course included diagnosis of inferolateral STEMI by EKG criteria and elevated troponins. Coronary angiography revealed patent coronaries with suspected diagnosis of viral myocarditis. The patient otherwise had an uneventful post-operative course thereafter.

He was accepted to be geno-negative Marfan syndrome after a negative pathogenic gene panel, systemic feature score >7 and aortic criterion.

He continues to have favorable outcome with scheduled aortic surveillance and possibility of planned future aortic root replacement.

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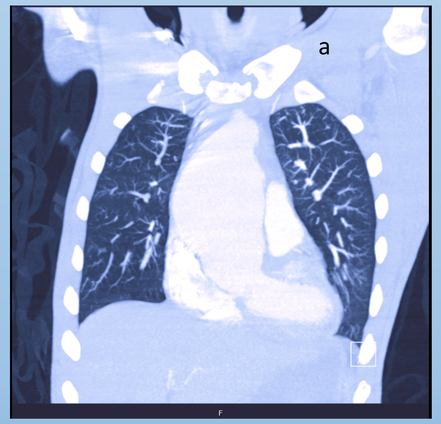

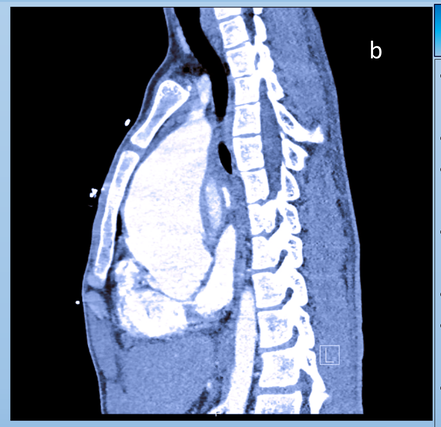

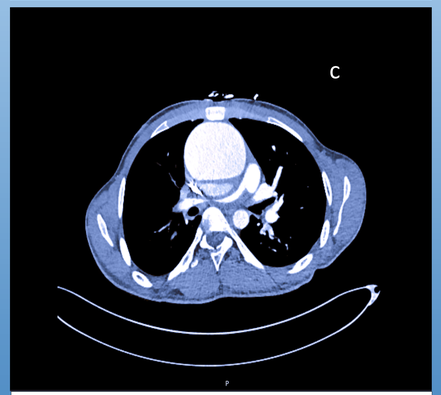

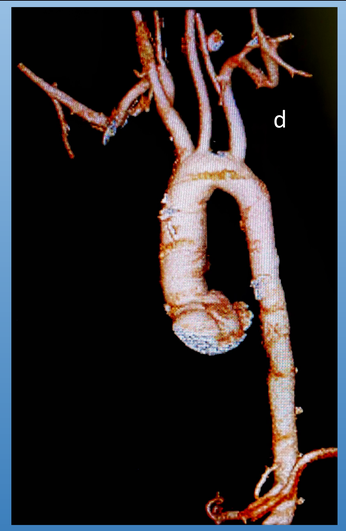

Images a, b & c depicting CT angiogram of the Type A dissecting aortic aneurysm. Image d shows the reconstructed aorta.

DISCUSSION

- Vascular pathologies have been well documented in the pediatric population during the COVID-19 pandemic.
- The propensity of these complications in GAD (Genetic Aortic Diseases) is unknown.
- Although we do not have pathological confirmation, the symptoms and the vascular sequale in our patient could be hypothesized to be due to viral aortitis and viral myocarditis.
- GADA Canada and Marfan Association in keeping with CDC guidelines have issued statement regarding GAD patients with COVID-19 with major take home messages of:
- >Recommendation against flouroquinolones.
- >Avoiding OTC cough/cold medications like pseudoephedrine, ephedrine, phenylephrine, naphazoline and oxymetazoline. Patients should be treated as hypertensive patients.
- The initial decrease in cardiac output in our patient after the post-operative presumed ischemic event, resolved completely with conservative management and immunosuppressive therapy, suggesting an immune mechanism leading to it.
- In summary, although further studies are needed to predict the association of vascular complications in GAD patients with COVID-19 infection, the management strategies are only slightly different from the general population. Successful management depends on surveillance, suspicion and early detection.

REFERENCES

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