Background/Aims
Vaccine-associated autoimmunity is not infrequent, pertaining to either the cross-reaction between antigens or the action of adjuvant. This issue is more inapplicable to the COVID-19 vaccine, because of nucleic acid formulation and the hastened development process inflicted by the urgent pandemic condition. Here we are presenting a young patient who developed a significant abnormal autoimmune profile immediately post covid vaccination.

Methods
A 31-year-old IT engineer was referred to Rheumatology with post-vaccine arthralgia. He had a history of recent aortic root aneurysm repair after having chest pain on exertion. Echocardiography showed dilated aortic root with significant aortic regurgitation, CT aortogram confirmed spiral type A dissection. He underwent an emergency cardiothoracic surgery in October 2020, followed by an uneventful recovery.

He received the first dose of Pfizer COVID-19 vaccine on 2nd February, the very next day he developed painful ankles, knees, left hip, and right shoulder. Blood tests showed elevated CRP of 45, ESR 34, rheumatoid factor positive at 92, anti-CCP >340, ANA 13, dis-DNA 202, U1RNP positive, anti-SM antibody positive, Ro and La antibodies positive, antiJo1 antibody positive, with normal complements. He denied any swelling of the joints. No history of hair loss, photosensitive skin rash, Raynaud’s, sicca symptoms, oro-genital ulceration, or cracking of the skin. There were no constitutional symptoms, chest pain, or bowel issues. He was previously labeled as asthmatic, which is stable after surgery. He doesn’t smoke or drinks alcohol. There was no family history of autoimmune conditions.

On examination, he has tenderness across both hands and wrists with palmar erythema but no synovitis. He has painful right shoulder abduction with left hip pain on flexion and extension. Cardiovascular and GI examination was unremarkable apart from sternotomy scar and metallic valvular heart sounds. His dipstick urinalysis was negative for blood and protein. In recent x-rays hands and feet were normal. We agreed on a trial a tapering course of prednisolone started with 20mg daily. Three weeks later in follow-up, he reported partial response to steroids. His inflammatory markers were coming down. We have started azathioprine as a steroid-sparing agent.

Results
This gentleman with negative autoimmune screening prior to cardiothoracic surgery expressed florid newly detected autoantibodies straightaway after the COVID-19 vaccine. This is suggestive of undifferentiated connective tissue disease with the likelihood of overlap syndrome between rheumatoid arthritis and SLE.

Conclusion
COVID-19 vaccination showed a beacon of light to end the pandemic by achieving herd immunity. There is an excusable socioeconomic rush towards mass vaccination without long-term safety analysis, however, it is also crucial that any vaccine licensing process should entail meticulous scrutiny of the human proteome against vaccine peptide sequences. This will minimize the risks of acute autoimmune reactions to inoculation and future chronic autoimmune pathology.

Disclosure
R. Mazumder: None. K.S. Afridi: None.