



Introduction

The COVID-19 pandemic has added many challenges in care of pregnant women with pre-existing conditions. We present successful management of a pregnant woman with systemic sclerosis (SSc) with SARS-CoV-2 infection necessitating a preterm cesarean delivery.

Case

- A 29 y-o G3P2 at 30.6 weeks
- History of systemic sclerosis, moderate dextro-scoliosis, severe restrictive lung disease, fetal growth restriction, difficult airway and difficult vascular access
- Admitted with shortness of breath, transaminitis and poor weight gain during pregnancy.
- SARS-CoV-2 positive on admission with bilateral viral pneumonia.
- 5' tall 35 kg with BMI 15 kg/m².
- PMH: Tracheostomy complicated by a tracheo-cutaneous fistula at age 7 which had been subsequently decannulated at age 9.
- Obstetric history included 2 vaginal births. Following epidural for labor analgesia with first pregnancy, developed a subdural hematoma immediately postpartum. During the second pregnancy she had opted not to have an epidural for analgesia.
- Pulmonary function was significantly worse compared to prior studies with a FEV1 and FVC 18% of predicted.
- TTE showed a mitral valve prolapse with no evidence of pulmonary hypertension with a normal cardiac function.



Figure 1: Airway



Figure 2: Scoliosis in the spine

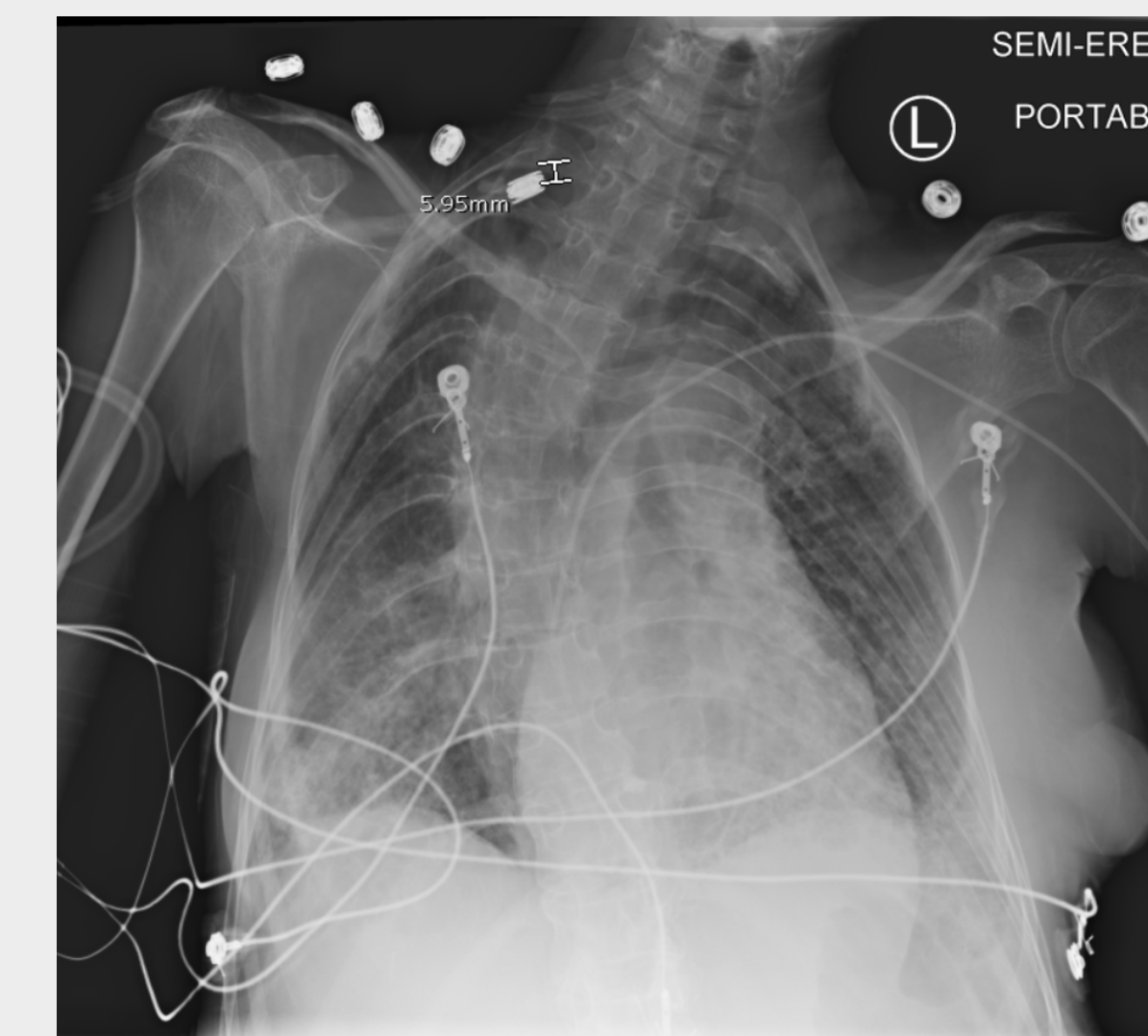


Figure 3: Pleural effusion and pneumonia

Discussion

Patients with SSc present many challenges for the entire team with airway management, neuraxial placement, unpredictable spread of local anesthetic, cardiopulmonary compromise, pre-eclampsia, pulmonary hypertension, renal disease, intravenous line placement, respiratory compromise and patient positioning¹. Infection with the SARS CoV-19 virus altered the course of pregnancy in our patient significantly leading to a preterm cesarean delivery. Covid- 19 pandemic has added to the challenges for these patients. Careful inter-disciplinary planning and close monitoring remain vital for successful management.

Challenges

- Difficulty with IV placement
- Challenging spine anatomy: positioning and neuraxial placement
- Distribution of drug altered due to spine anatomy
- Sedation necessary
- Restrictive lung disease
- Covid -19 in a patient with difficult airway
- Premature and growth restricted fetus

Intraoperative course

A controlled primary cesarean delivery with a tubal ligation for increasing oxygen requirement and work of breathing in the setting of poor baseline lung function. There was concern that patient would not be able to tolerate induction of labor and stresses of labor/pushing with an unfavorable cervix for induction of labor.

An epidural was placed to allow titration of anesthetic level slowly given her short stature and severe scoliosis. The sensory block after the epidural was patchy and suboptimal for surgery.

To assist with pain, sedation with dexmedetomidine and ketamine was used successfully during the surgery and intubation was avoided in this patient with a predicted difficult intubation.

Outcome for mother and baby were favorable.

References

1. Clark, Kristina EN et al, Systemic Sclerosis in Pregnancy. *Obstetric Medicine* 13.3 (2020): 105–111
2. Moaveni, D et al. "Scleroderma and Pulmonary Hypertension Complicating Two Pregnancies: Use of Neuraxial Anesthesia, General Anesthesia, Epoprostenol and a Multidisciplinary Approach for Cesarean Delivery." *International journal of obstetric anesthesia* 24.4 (2015): 375–382.