

Extreme Physical Therapy—Progression of Functional Mobility of 25 Year Old on ECMO 72 Days

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Extreme Physical Therapy — Progression of Functional Mobility of 25 Year Old on ECMO 72 Days

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The patient is a 24 year old female postpartum day one admitted to Lehigh Valley Health Network for initiation of V-V ECMO secondary to ARDS from H1N1 pneumonia. Hospital course was complex including: veno-venous ECMO for 72 days, mechanical ventilation for 127 days, cardiac arrest two times, right femoral artery repair, pelvic hematoma with exploratory laparotomy and prolonged wound closure, cholecystectomy, bacteremia, fungemia, severe pulmonary hypertension, 3 months of immobility due to hemodynamic instability with profound weakness and bilateral ankle contracture.

Physical therapy (PT) was initiated with the following progression. Frequency was determined by daily evaluation of patients status. Initially visits were infrequent (1x/week focusing on in bed activity) with increase to 5-7 days per week once patient was mobilizing to hallway. The patient's progress with physical therapy is listed below:

Hospital Day	Treatment
18	Bed exercise
65	Mobilized to sitting edge of bed with 2 PTs, 1 respiratory therapist (RT), 1 perfusionist and the bedside nurse
109	Ambulation with mechanical ventilation daily requiring 2 PTs, RT, bedside nurse and an aide for a chair follow
136	6-minute walk test performed with total distance of 51 feet
155	Discharge to acute rehabilitation and discharge home 3 weeks later

Throughout her stay, she presented many challenges to her health care team.

Mobility was performed outside of generally accepted parameters with respiratory rates of 40-50bpm, heart rate of 150-160bpm and oxygen saturation as low at 75% necessitating continuous assessment of patient's tolerance.

Ankle contractures were accommodated using makeshift wedge shoes with progression to custom made orthotics.

Patient was often tearful requiring encouragement to participate in her care and multidisciplinary communication to promote independence.

Mobility often required multiple personnel leading to extensive discussion regarding allocation of scarce resources due her unclear potential for recovery and the severity of this patient's prolonged critical illness.

Her complex clinical condition and gratifying recovery highlight the need for close communication and problem solving among an interdisciplinary team and illustrates the need for early mobility even in a constrained environment.

Hospital Course

- V-V ECMO for 72 days
- Mechanical ventilation 152 days
- Cardiac arrest x2
- Femoral artery repair
- Exploratory laparotomy with prolonged wound closure
- Bacteremia
- Fungemia
- Pulmonary hypertension
- Critical illness polymyopathy

Vital Signs Tolerated During Mobility

- Respiratory rate 40-50
- Heart rate 150-160
- Oxygen sat 75-85%



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