



# The need for ECMO in a paediatric burns patient

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Extracorporeal membrane oxygenation (ECMO) can be a lifesaving modality for children with cardiac and respiratory failure. It involves the ECMO circuit acting as an artificial heart and lung to deliver oxygenated blood to the patient. There are 2 types of ECMO, VA (veno arterial) and VV (veno-venous). VV-ECMO is used purely for respiratory support and VA-ECMO provides both respiratory and haemodynamic support. There is very little literature documenting the use of ECMO in paediatric burns. Our hospital is fortunate enough to have the Extracorporeal Life Support Service (ECLS) available for children with cardiac and respiratory failure.

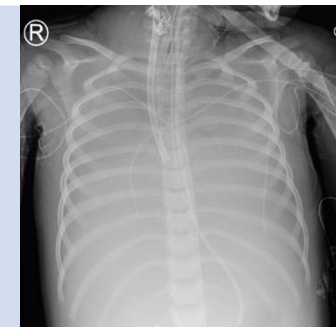
## Case Study

- 3 year old girl sustained 17.5% scald burns to chest, abdomen, bilateral upper arms, thigh and face from hot noodles.
- Possible history of a cough prior to admission but otherwise well.
- Received 20mins cold running water within the first 3 hours
- Fluid resuscitation as per Parkland Formula.
- Was taken to theatre upon presentation for non excisional debridement with application of Mepitel and Acticoat.



Day 5

- Day 3-** Became tachycardic and febrile. This continued for 24 hours when her oxygen requirement increased along with WOB.
- Day 5-** Medical emergency called, cause ?post inflammatory reaction or pneumonia. Transferred to PICU. Deteriorated quickly, a Decision was made to intubate, she then progressed to HFOV.
- Day 7-** Desaturations continued, increase in FiO2 with no improvement. Nil success with iNO and conventional ventilator. Placed on VA ECMO for severe refractory hypoxemia and sepsis. Diagnosis still unclear- ARDS due to sepsis. Commenced on heparinisation.
- Day 8-** Commenced hemofiltration.
- Day 9-** Pigtail drains inserted for bilateral pleural effusions.
- Day 12-** Taken off HFOV and continues on conventional ventilation.
- Day 15-** Decannulation off ECMO.
- Day 16-** ICC's removed.



CXR taken Day 7

## Investigations

- CXR- changes documented to Rt LL, bilateral fields hazy (Day 5)
- CXR shows complete white out and left pleural effusion (Day 7)
- Punch biopsy- NAD. (Day 8)
- NPA- RSV+ve (Day 8)
- ECHO- bilateral pleural effusions (Day 9)



Day 15

## Conclusion

- The availability of having an ECLS service within our hospital saved this patient's life.
- Re-epithelialisation occurred at day 27 without grafting.
- Scar management has been maintained using only pressure garments and silicone gels.
- No reconstruction needs have been required.
- This patient is now 18mth post injury with no impact on her function.
- Toxic shock was excluded in this case and diagnosis of ARDS due to RSV +ve



18mth post injury