

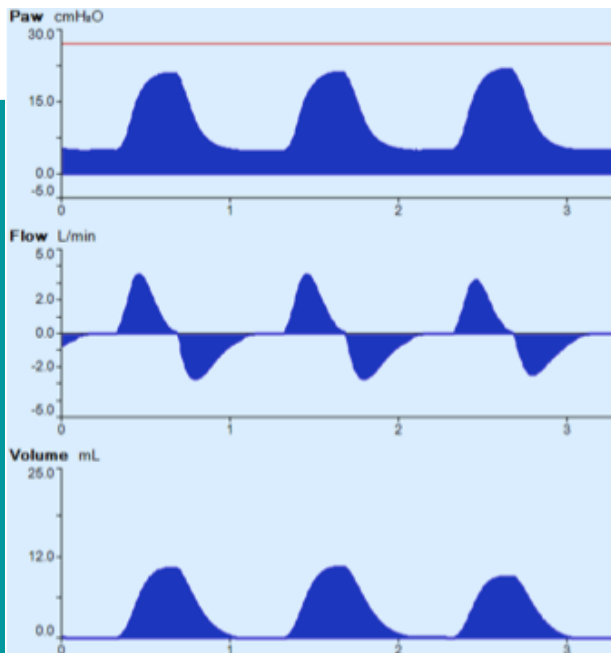
PAEDIATRIC EDUCATION NEWSLETTER



Welcome to the Paediatric Education Newsletter, a monthly education bulletin highlighting learning points from departmental teaching, interesting clinical cases and questions. We hope you find the PEN useful, we'd love to hear from you particularly if there is anything you would like to contribute! The PEN Team (Henry, Aidan and Hana)

UNDERSTANDING VENTILATOR GRAPHICS

Last month we had a section on the DOPE mnemonic and acute deterioration in a ventilated baby in which we referred to flow loops. Here is a bit more information to aid our understanding and help us interpret the different waveform graphics on the ventilator.



Most ventilator screens that you will see will show the three waveform graphics shown here; pressure, flow and volume. All with time as the x-axis.

The pressure waveform (top) shows the pressure being delivered and this is the pressure within the circuit. The top of the curve indicates the top pressure, peak inspiratory pressure (PIP) and the lower baseline, peak end expiratory pressure (PEEP).

Flow is displayed on the middle waveform. A flow sensor, usually situated next to the ET tube, measures positive and negative flow, i.e. air flow going to the baby and air flow coming back from the baby.

The volume waveform (bottom) displays the volume delivered and the top of the curve represents the tidal volume.

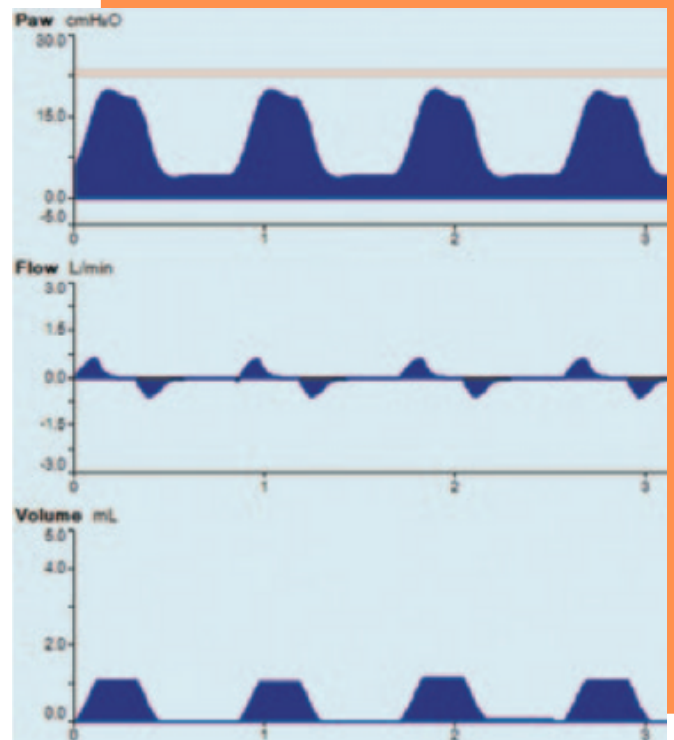
Now let's look at some examples of what changes in these waveforms can tell us.

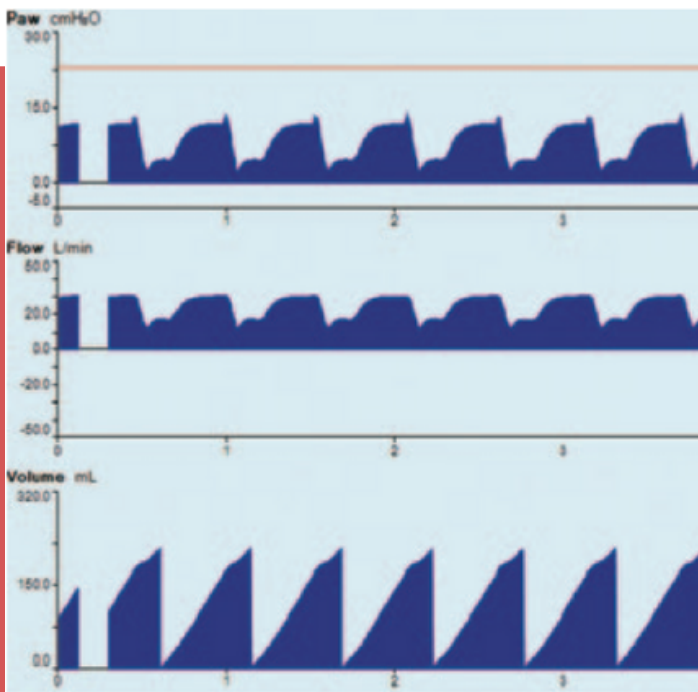
In this first example, we can see that reasonable pressures are being delivered however both the flow and volume waves are small, meaning reduced lung inflation.

This could be due to obstruction from secretions / blood or something kinking or pressing on the ET tube.

It could also be due to reduced lung compliance.

Causes of an acute reduction in compliance include; lung collapse, pneumothorax, pulmonary haemorrhage and displacement of the ET tube down the right or left main bronchus.





In this second example, looking at the flow wave we can only see inspiratory flow. There is no expiratory flow.

This indicative of either extubation or a disconnection of the ET tube.

REFERENCES

Vas C, Medd N, Bustani P

The desaturating intubated neonate: is DOPE enough?
Infant 2015; 11(2): 47-50.



FURTHER READING

Graphical Screen Interpretation in Neonatal Ventilation with the Dräger Babylog:
<https://youtu.be/r2KU3AIWAwY>



INTUBATION TRAINING

The Yorkshire and Humber Neonatal ODN website has an 'Airway Competency and Training Package' that can be accessed via the link below.

https://www.networks.nhs.uk/nhs-networks/yorkshire-humber-neonatal-odn/education/copy_of_education-resources/intubation-training

The training package has a series of three different powerpoints with links to training videos.

INTUBATION CHECKLISTS



A learning point from the CCF meeting in October was for paediatric and neonatal staff to please ensure that Intubation checklist are being used, completed and filed in the patient notes.

The use of intubation checklists has been shown to reduce adverse events and improve patient safety.

FUNCTIONAL NEUROLOGICAL DISORDER (FND)

WHAT IS IT?

- FND is a diagnostic term for when patients experience symptoms which appear to be caused by problems in the nervous system but which are not caused by a physical neurological disease or disorder.
- Other terms used to describe these symptoms include; 'functional neurological symptoms', 'psychogenic', 'psychosomatic', 'conversion disorder', 'somatisation', 'somatoform', 'dissociative' and "medically-unexplained'.
- The three main types of symptoms seen in children are; sensory symptoms, motor symptoms and functional seizures or episodes of altered awareness.

FURTHER READING

Cottrell DJ

Fifteen-minute consultation: Medically unexplained symptoms

Archives of Disease in Childhood - Education and Practice 2016;101:114-118.



Raper J, Currigan V, Fothergill S, et al

Long-term outcomes of functional neurological disorder in children

Archives of Disease in Childhood 2019;104:1155-1160.

PATIENT INFORMATION

https://media.gosh.nhs.uk/documents/Functional_symptoms_F2324_A5_col_FINAL_Sep20.pdf



<https://www.neurokid.co.uk/symptoms/>

ANTIMICROBIAL STEWARDSHIP TEACHING

TONSILLITIS – KEY MESSAGES FROM TEACHING BY DR JESS WAN

1

Examination for pyrexia of unknown focus is only complete after a full ENT examination, however combative the patient is.

2

Both bacterial and viral tonsillitis can cause exudative tonsils.

3

Look out for odd breathing sounds, drooling, odd sounding speech, neck movements and sick children (or look at Paediatric Pathways as a cheatsheet).

4

Bloods do NOT increase diagnostic accuracy of bacterial tonsillitis in addition to the CENTOR criteria and rapid antigen testing.

5

Refer to the local guideline for antibiotic choices.

6

Be wary of changing your antibiotic prescribing behaviour in response to recent news or tragic events, without first appraising the facts and evidence.