Anesthesia Machine Observations one day while giving breaks at BWH

July 27, 2007

In the format of:

Philip JH. Digital Still Photos Discussed after Clinical Care Fosters Teaching, Learning, Common Understanding. ASA Annual Meeting, October 2007 (Poster Abstract).

© 2007, James H Philip, all rights reserved
Fresh Gas Flow

Can be effective in achieving desired inspired
Can be wasteful of all gases that leave the circuit
Gas man if time allows
Fresh Gas Flow

Flow * Fraction = Use

8 LPM * 2% = 8000 mL/min * 0.02 = 160 mL/min

1 LPM * 3% = 1000 mL/min * 0.03 = 30 mL/min

160 / 30 = 5.3 = relative excess
GE Aisys ADS

Unexpected PEEP
High Insp Pressure
Current and Past Alarms
Unexpected PEEP
PEEP 4 cmH2O - OK
PEEP 4 cmH2O - OK
Condenser is empty - good
WAG Reservoir Bag is empty - good
FGF = 10 LPM, PEEP appears

Why?
WAGS Flow cannot keep up with FGF

Overflow valve opens at 10 cm H2O, so PEEP goes up by 10
Return FGF to < WAGS Flow

WAGS keeps up with FGF and all is well.
HME (Heat & Moisture Exchanger)

Protects circuit from patient water vapor and its condensation in tubes and valves

Keeps the patient a bit warmer

We use them unless contraindicated

small tidal volume, mask ventilation
Are we just right?
No. This is a Filter
HME add Filter are different

HME looks like a sponge that soaks up water

Filter looks like Filter Paper

Circuit is wet from before Filter was replaced by HME
Someone had a D-Fend alert

D-Fend is the name of the moisture eliminator in the Aisys Gas Monitor
Aqua Knot is the equivalent for GE SAM

Water has clogged the flow
Our external filter
Water defense system
Kinked sample line
HME should protect gas sample line
Sample distal to HME

Yes  No
Flow Sensors fail when wet

GE-Datex-Ohmeda SmartVent
Modulus 2 SE, Aestiva, Aisys
Wet Expiratory Valve
Ventilator Failure
BMET can change flow sensors
Flow Sensors and Dome Valves
Check Ventilator Function

- Test pressure alarms
  - NAD - Continuing pressure alarm, high pressure alarm
  - Ohmeda - High pressure relief
- Open relief valve and verify that reservoir bag empties
- Observe scavenger bag fill and empty

**CHECK VENTILATOR FOR FUNCTION**
Ventilate reservoir bag and observe no volume loss.

**CHECK SCAVENGER FOR FUNCTION**
Check that reservoir bag fills and empties. Check valves not stuck.

**CHECK SUCTION FOR FUNCTION**
Last week, there were few. No one complained.

This week there is one in a drawer of every ADS

Survey by Jeff Delaney
Pre-Use Check your Ventilator for function
Thank you
Later Today - more on Technology

4:30 - 5:30 Questions and Answers on Technology

By e-mail you received two documents on Technology Topics

These are a summary of answers to questions asked by Anesthesia Clinicians (CA1 - CA45, CRNAs, etc.)

These two plus a PPT version with pictures are on the Anesthesia Dept Intranet Site.

Please read and learn more about your technology