Background

- A 10 year old female underwent general anesthesia for irrigation and debridement of her right leg due to diffuse infection of the iliacus muscle.
- Her intra-operative course was uneventful until the end of the case prior to extubation: the Aestiva/5 manual bag/ventilator switch failed to convert from ventilator to manual mode.
- The patient was disconnected from the ventilator at the Y-piece and connected to a Mapleson circuit, capnography, and auxiliary oxygen.
- After the case, the ventilator was examined and the bag/ventilator axle receiver microswitch was found to be cracked, locking the switch in ventilator mode (see figure).

Discussion

- There have been previous reports of bag/ventilator switch failures in the Aestiva/5 anesthesia machine that resulted in sudden, large leaks in the breathing system.
- The mechanical failure we encountered with the broken switch, however, did not result in a leak but the inability to turn off mechanical ventilation.
- The source of the problem, the plastic axle receiver microswitch, was difficult to identify intraoperatively given its location within the anesthesia machine control panel.
- Plastic components which undergo significant use are vulnerable to damage.
- The machines at our institution are routinely serviced every 6 months and components that are susceptible to damage from daily utilization, such as the axle receiver switch, are replaced.
- In this instance, the anesthesia machine underwent servicing 4 months prior to the event.
- Since the switch is routinely changed, the incident was reported locally and not to the manufacturer.

Conclusions

- There may be a need to re-evaluate service cycles or institute periodic internal inspections for anesthesia machines with plastic components that experience significant use.
- Our experience highlights the importance of regular machine checks and the occurrence of an adverse event despite regular maintenance and a normal Food and Drug Administration pre-use anesthesia apparatus checkout.

References: