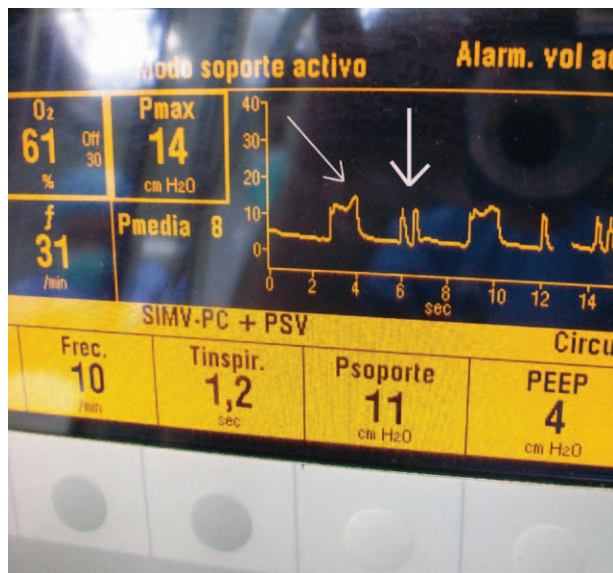


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## Patient–Ventilator Asynchrony during Anesthesia

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**A**SYNCHRONY occurs when the work of two independent ventilation pumps (patient–ventilator) are decoupled. They have a prevalence of up to 80% and can cause many side effects.<sup>1</sup>

This figure shows a pressure–time waveform (Aespire 7900 SmartVent, Datex-Ohmeda; GE Healthcare, Helsinki, Finland) on a 2-yr-old boy in synchronized intermittent mechanical ventilation plus pressure support. Two different and antagonistic asynchronies can be observed, one related to a mandatory breath and the other to support. The thin arrow points to a mandatory breath in pressure mode showing a peak at the end of mechanical inflation, corresponding to the patient’s expiratory effort overlapping the ventilator’s inspiratory flow (delayed cycling). The 1.2-s programmed inspiratory time (Ti) is too extended for his age because such should be near 0.7 s.<sup>2</sup> In other words, neural (patient) Ti is lower than the Ti from the ventilator, generally causing dynamic hyperinflation.<sup>3</sup> The thick arrow points to two consecutive support ventilations (double triggering) as a consequence of a very high termination level

programmed in the support inspiration that provokes short Ti and the patient’s need to continue to breathe. In this case, neural Ti is higher than the Ti from the ventilator, causing increased work of breathing.<sup>3</sup>

In the first case, it can be enough to reduce the Ti in the control panel of the ventilator to physiological values for his age, whereas in the second case, we can increase the supported Ti by reducing the percentage of the flow peak of termination.

### Competing Interests

The author declares no competing interests.

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