

# SEDATION AS A UNIQUE TECHNIQUE FOR MAGNETIC RESONANCE IMAGING (MRI) IN CHILDREN: IS IT POSSIBLE?

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## BACKGROUND

General anesthesia (GA) is the technique of choice for MRI in children, which is a frequent diagnostic step to define cancer staging and treatment options. Upper respiratory tract infection (URI) is a condition that generally postpones exams under general anesthesia, since complications such as laryngospasm can occur. [1] As MRI procedures are usually performed outside operating room environment, sedation seems to be a good and safe alternative for such cases.

## CASE REPORT

A three-year-old, 15kg child diagnosed with retinoblastoma was submitted to preoperative skull and orbit MRI. Preanesthesia evaluation revealed URI, which could be an obstacle for the GA. As the exam could not be delayed, anesthesia was performed exclusively with sedation. It started with oral Midazolam 0.5mg/Kg as premedication 30 minutes prior to the MRI execution. After obtaining the venous access, which would also be used for injecting contrast, 3mcg/kg of intravenous (IV) Clonidine was infused and the child fell instantly asleep. While positioning and monitoring the child (capnography, pulse oximetry and blood pressure), a slight awakening was noticed. Then, Propofol 1mg/kg plus lidocaine 1mg/kg, were IV injected. This amount was enough to improve sedation and to ensure that the child would breath spontaneously, allowing the execution of the procedure. Oxygen saturation remained 100%, avoiding the necessity of oxygen supplementation, as well as, airway manipulation. The MRI exam lasted 30 minutes and the child immediately woke up after injecting Flumazenil 30µ/kg IV at the end of the procedure. No complications were observed.

## DISCUSSION

The GA technique for MRI scanning in children has an apparent advantage, as it works independent of a child's ability to cooperate with the procedure. However, inducing GA in MRI requires a fully equipped anesthesia workstation, as well as the absence of URI, in order to guarantee patient safety.[2] Concerning children and MRI, management of the child with URI is directed at minimizing secretions and avoiding stimulation of a potentially sensitive airway, which can be achieved by sedation. Goals of sedation for MRI include anxiety control, minimization of psychological trauma and optimization of amnesia, with minimal ventilatory impairment. So far, there is a lack of reports in literature on sedation, as a unique pediatric anesthesia technique for MRI, which is a challenge in infants.

## LEARNING POINTS

We aimed to call attention to the possibility of performing MRI under safe sedation without airway manipulation in children.

## IMAGES



## REFERENCES

- [1] Tait AR, Malviya S. Anesthesia for the child with an upper respiratory tract infection: still a dilemma? *Anesth Analg.* 2005;**100**:59-65
- [2] Schulte-Uentrop L, Goepfert MS. Anaesthesia or sedation for MRI in children. *Curr Opin Anaesthesiol.* 2010;**23**:513-7

