

Augmented reality for facilitation of paediatric peribulbar block administration - A case report

Dear Editor,

Augmented reality (AR) is a newer interactive technique that superimposes computer-generated images in a real-world environment, enhancing the user's perception of their surroundings.^[1] Children often experience anxiety, pain and fear during various surgical interventions. AR is a good distraction technique and can be tailored to the individual preferences and needs of the patient. Although AR has been used for distracting paediatric patients during procedures such as obtaining vascular access, dental care and preoperative anxiety,^[2-4] it has not been evaluated for the facilitation of regional blocks.

A 12-year-old boy with Coats disease in the right eye presented for cryotherapy. Preoperatively, he was anxious with a visual analogue scale for anxiety (VAS-A) of 7. He was introduced to AR using a mobile phone application. Using AR, the child's favourite cartoon character (Mickey Mouse) was superimposed on the child's face for his engagement. This reduced his VAS-A score to 2. The child was wheeled into the operating room while he was engaged in the AR application. All standard monitors were attached in the operating room, and an intravenous (IV) line was secured while keeping him distracted using an AR application. The Mickey Mouse face filter was then superimposed on the technician's face to keep him distracted while explaining and counselling regarding the block [Figure 1]. The child's father was also present for reassurance. With counselling and distraction using an AR application, the child was

asked to look up on the mobile screen, and he was engaged by seeing his face as Mickey Mouse again using the AR application. Local anaesthesia was infiltrated at the points of injection of the block. The mobile phone with the AR application was placed vertically above the patient eyes, and he was asked to look up at the mobile, visualising himself as Mickey Mouse. The peribulbar block was administered, and the VAS-A score during the block administration was 3. After ensuring the success of the block, IV midazolam 0.5 mg was administered for the intraoperative period. Surgery proceeded uneventfully under the block. The child was shifted to the recovery room after surgery. When asked about the perioperative experience, the child replied that he enjoyed the process and was only a little scared at the time of the block.

The distraction technique using AR can be valuable for managing pediatric patients perioperatively. This could be useful in pediatric patients presenting for ophthalmic surgery and having a risk for general anaesthesia due to existing systemic/congenital anomalies.

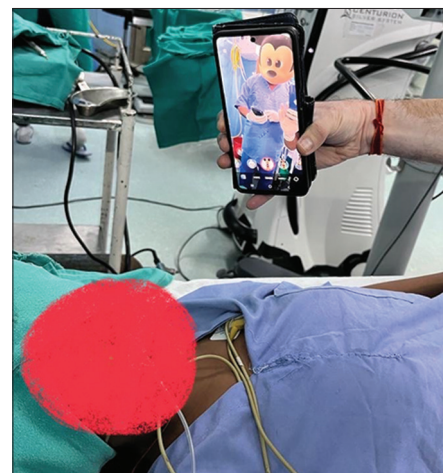


Figure 1: Augmented reality by superimposing Mickey Mouse face filter on technician's face for distraction for peribulbar block administration

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. Written and informed consent was taken from the child's father, and assent was taken from the child. In the form, the child and his parents consented to his images and other clinical information to be reported in the journal. They understand that his name and initials will not be published and due efforts will be made to conceal his identity, but anonymity cannot be guaranteed.

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Conflicts of interest

There are no conflicts of interest.

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