

## Rectal puncture during caudal anaesthesia

Sir,

A 9-year-old female child, ASA physical status I, weighing 31 kg with congenital posteromedial bowing of the right tibia was posted for the left proximal tibia and fibula epiphysiodesis. Informed consent was taken from the parents for general anaesthesia and caudal block. On the day of surgery, after adequate fasting status, the child was shifted to the operation theatre. After connecting the standard monitors and uneventful induction of general anaesthesia, the child was positioned for the caudal block. Under strict aseptic precautions, the resident anaesthesiologist approached the caudal space using the landmark technique with a 20-gauge short beveled intravenous (IV) cannula over a needle after feeling a characteristic 'pop'. The cannula advanced without any resistance. After confirmation of negative aspiration for blood and cerebrospinal fluid, 3 ml of 0.25% bupivacaine was injected. On re-aspiration, greenish-yellow faecal matter was seen in the syringe and immediately the cannula was withdrawn and the entire set discarded. The second attempt was given by the senior anaesthesiologist at the sacral hiatus at an higher level than the previous attempt with a new needle and freshly prepared 15 ml of 0.25% bupivacaine was then administered after confirming negative aspiration. The surgery was carried out as planned with adequate caudal analgesia. The child was kept under the cover of antibiotic. There was no fever, inflammation, pain or discharge from the previous prick point. Her post-operative period was uneventful, and she was discharged on post-operative day three.

Caudal block is an excellent technique of paediatric regional anaesthesia for abdominal and lower extremity surgeries. The low rate of complications makes it one of the safest and preferable anaesthetic techniques for intra-operative and post-operative analgesia. Complications that are seen are inadvertent IV injection (1:10,000), epidural haematoma or abscess (1:80,000), vessel perforation (1.6–10.6%), subcutaneous infiltration (5–19%) dural puncture (0.09–0.22%) but rectal puncture following caudal blockade is a less recognised complications which are not well reported

in the literature.<sup>[1]</sup> We found only two case reports on inadvertent rectal puncture during the caudal blockade in children.<sup>[2,3]</sup>

Traditionally, caudal space is approached by identifying the sacral hiatus which makes an equilateral triangle with the two posterior superior iliac spines. However, this technique has been questioned with the advent of ultrasound, which showed a poor correlation of the equilateral triangular surface landmark with the sacral hiatus. Ultrasound identification of the sacral hiatus can help overcome this flaw of the blind landmark technique.<sup>[4,5]</sup>

Similar to the previous reports, the characteristic 'pop' sensation and negative aspiration did not confirm entry into the caudal space in our case.<sup>[2,3]</sup> The entry into the rectum was identified only on re-aspiration after injecting 3 ml of local anaesthetic. Takrouri *et al.* identified the rectal entry when only a gush of clear fluid came out of the child's anus, in spite of confirming via negative aspiration twice.<sup>[2]</sup> This can be explained by the possible absence of entry of solid faecal matter on aspiration until mixed and diluted by added anaesthetic solution. This could result in failed caudal block in spite of absent subcutaneous bulge and rectal puncture being unnoticed. This, re-emphasizes need for repeated aspiration during the regional technique.

The literature reveals that even if a rectal puncture occurs, it is very important to never reintroduce the contaminated needle as it can lead to epidural infection. We opted to reattempt with a new set and were successful. However, it is prudent to follow-up these cases for any febrile episodes, pain, inflammation, infection or fistula formation. Optimal antibiotic treatment will be needed if there are any signs of epidural infection. Thus, accidental rectal puncture does not contradict the use of caudal block as long as proper aseptic precautions are taken.

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### Conflicts of interest

There are no conflicts of interest.

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