

## Encountering caudal cyst on ultrasound: What do we do?

Sir,

Caudal block is one of the most commonly performed regional anaesthesia techniques in paediatric patients for umbilical or subumbilical procedures. Commonly, the caudal block is performed with traditional landmark technique. Accidental dural punctures and trauma to the base of the sacrum are some of the known complications of this technique.

Morphological/anatomical variations in the lumbosacral region such as sacral meningocele, meningeal diverticulum, extradural cysts and perineural cysts<sup>[1-3]</sup> are usually asymptomatic in neonates and infants. They can be associated with skin discolouration of the sacral area, sacral dimple or hair tuft. Ultrasound scanning in such cases helps us pick up the pathology and gives us clear idea of what we are dealing with.

Our patient was a 17-month-old male child (weight 7.6 kg) posted for hypospadias repair. He was a pre-mature child born at 28 weeks and was a Neonatal Intensive Care Unit graduate of around 6 weeks. His

routine haematological and biochemical workup was normal.

On the day of surgery, standard nil per os guidelines was followed. The child was pre-medicated with 0.75 mg/kg midazolam with sugar orally 20 min pre-operatively. Our anaesthesia plan was to maintain spontaneous ventilation with the face mask<sup>[4]</sup> and ultrasonography (USG)-guided caudal block.<sup>[5]</sup> The pros and cons of caudal block were discussed with parents as per our routine.

Anaesthesia induction was started with O<sub>2</sub>, N<sub>2</sub>O and sevoflurane. Intravenous access was established with 22-gauge intravenous (I.V.) cannula. I.V. glycopyrrolate (4 µg/kg) was administered. The patient was turned left lateral for caudal block. The sacral area of the patient had discolouration and a discrete dimple noted on table as shown in Figure 1a. USG scanning of the sacral area revealed an anechoic cystic structure amidst the hyperechoic strands of filum terminale as shown in Figure 2a and b. Caudal block was given with 22-gauge spinal needle (Quincke type) 30 mm length under real-time USG guidance [Figure 1b] avoiding the cyst as shown in Figure 2c. A volume of 3.5 ml of local anaesthetic mixture (0.5 ml 2% lignocaine with 1:200,000 adrenaline and 3 ml of 0.25% bupivacaine) was used for caudal block. There was no response to surgical stimulus. Duration of surgery was 1.5 h. Anaesthesia was maintained with O<sub>2</sub>, N<sub>2</sub>O and sevoflurane 1% through face mask.<sup>[4]</sup> At the end of surgery, the child was shifted to recovery room. Post-operative analgesia was maintained with syrup ibuprofen 38 mg orally thrice daily.

In our case, the cyst was clearly picked up by USG screening and the caudal block was safely performed by negotiating needle in accordance to the real-time scan, avoiding the cyst. With increasing availability and increasing expertise of USG equipment, it is highly recommended anaesthesiologists should use



**Figure 1:** (a) Sacral area of patient with discolouration and discrete dimple. (b) Ultrasound-guided caudal block

USG regularly for performing caudal block, especially in the presence of signs suggesting anomalies.

Visible anatomical variations are tell-tale signs of abnormalities such as the dural sac terminating abnormally low.<sup>[1,2]</sup> Any obviously visible anatomical variation such as tuft of hair, a dimple in the caudal area are often considered as a relative contraindication for caudal block. Routine use of ultrasound could aid us in converting these relative contraindications into safely doable techniques. Cystic structures, including the cerebrospinal fluid (CSF), may go unnoticed. These scenarios could increase the chances of dural punctures or inadvertent deposition of the local anaesthetic dose calculated for caudal epidural into the CSF leading disastrous complications.

This makes a reasonable case for routine use of USG guidance for caudal blocks, and especially, when the telltale sign of an underlying anomaly is apparent, before abandoning the procedure.

#### Acknowledgement

The authors would like to thank Dr. Kiran A. Puranik MD.

#### Financial support and sponsorship

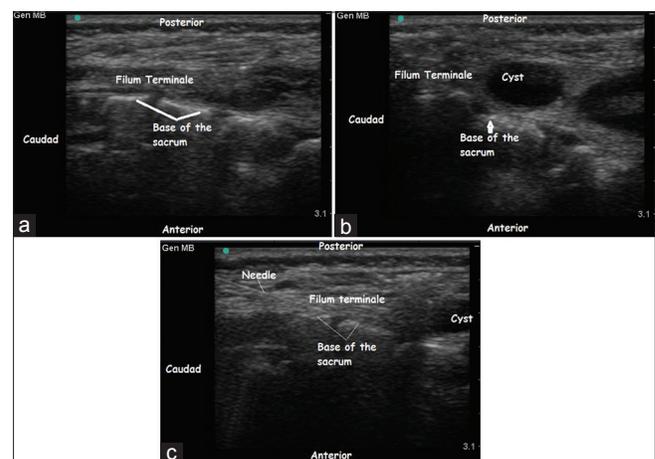
Nil.

#### Conflicts of interest

There are no conflicts of interest.

**Vrushali Chandrashekar Ponde<sup>1,2</sup>,  
Vinit Vinod Bedekar<sup>1,2</sup>**

<sup>1</sup>Children's Anaesthesia Services, <sup>2</sup>Department of Anaesthesiology, Surya Children's Hospital, Mumbai, Maharashtra, India



**Figure 2:** (a and b) Ultrasonography scanning of the sacral area showing an anechoic cystic structure amidst the hyperechoic strands of filum terminale. (c) Real-time ultrasonography scan of sacral area showing needle avoiding the cyst

**Address for correspondence:**

Dr. Vinit Vinod Bedekar,  
Building No. B-41/201, Yogi Nagar, Yogi Saraswati CHS, Eksar  
Road, Borivali West, Mumbai - 400 091, Maharashtra, India.  
E-mail: [dr.vinitbedekar@gmail.com](mailto:dr.vinitbedekar@gmail.com)

This is an open access article distributed under the terms of the Creative Commons Attribution-NonCommercial-ShareAlike 3.0 License, which allows others to remix, tweak, and build upon the work non-commercially, as long as the author is credited and the new creations are licensed under the identical terms.

**REFERENCES**

1. Kim SG, Yang JY, Kim DW, Lee YJ. Inadvertent dural puncture during caudal approach by the introducer needle for epidural adhesiolysis caused by anatomical variation. *Korean J Pain* 2013;26:203-6.
2. Joo J, Kim J, Lee J. The prevalence of anatomical variations that can cause inadvertent dural puncture when performing caudal block in Koreans: A study using magnetic resonance imaging. *Anaesthesia* 2010;65:23-6.
3. North RB, Kidd DH, Wang H. Occult, bilateral anterior sacral and intrasacral meningeal and perineurial cysts: Case report and review of the literature. *Neurosurgery* 1990;27:981-6.
4. Ponde V. Surgical mask used as a harness. *Paediatr Anaesth* 2006;16:601.
5. Ponde VC. Recent developments in paediatric neuraxial blocks. *Indian J Anaesth* 2012;56:470-8.

Access this article online	
Quick response code	Website: <a href="http://www.ijaweb.org">www.ijaweb.org</a>
	DOI: 10.4103/ija.IJA_144_17

**How to cite this article:** Ponde VC, Bedekar VV. Encountering caudal cyst on ultrasound: What do we do?. *Indian J Anaesth* 2017;61:685-7.

© 2017 Indian Journal of Anaesthesia | Published by Wolters Kluwer - Medknow