

## **CORRESPONDENCE**

### **Another use of ultrasound by the anesthetist**

Rachael Dolan, MB, ChB\*, Santhana Kannan, MD, DNB, FRCA\*\*

*\*Core Trainee; \*\*Consultant*

*Dept of Anesthesia, City Hospital, Dudley Road, Birmingham B18 7QE. (United Kingdom)*

**Correspondence:** Dr. S. Kannan, Dept of Anesthesia, City Hospital, Dudley Road, Birmingham B18 7QE (United Kingdom); Phone: 0044 121 5074343; Fax: 0044 121 5074349; E-mail: [kannan.gas@gmail.com](mailto:kannan.gas@gmail.com)

**Key words:** Ultrasound; Anesthetist; Contraception.

The use of ultrasound by anesthetists in an operating theatre environment generally relates to regional nerve blocks or central venous access. Other potential uses include identification of epidural space, draining pleural effusion, identification of vascular anatomy before tracheostomy etc.<sup>1</sup>. We present an instance where the use of ultrasound prevented cancellation of elective minor surgery. There have been no similar reports in the literature before.

A young woman weighing 95 kg was listed for elective surgery to remove a contraceptive implant (Implanon®) from her left arm under local anesthetic. Her general practitioner had been unable to remove the implant due to his inability to palpate the device. In the outpatient gynecology clinic the implant had been located in the subcutaneous tissue of the medial aspect of the left arm with the help of ultrasound, but the exact location was not marked. On the day of the surgery in the operating room, the gynecologist could not 'feel' the implant at the location mentioned by the previous ultrasound report. She was reluctant to explore the area and considered referring to orthopedic or plastic surgeon for guidance. Unluckily, there were no general, orthopaedic or plastic surgery cases scheduled for that day in that complex. The 'on call'

surgeons were busy operating in another complex. The gynecologist then suggested that the surgery be postponed and the patient referred to the surgeon for rescheduling at a later day.

At this point, the ultrasound machine in the operating room, BK Medical Flexfocus 400 Anesthesia® (BK Medical, Denmark) with an 8870 probe at a frequency of 15MHz, was successfully used by the anesthesia team to locate the implant as a linear shadow about 2 cm below the skin buried in the subcutaneous fat. The location was marked and the surgeon then removed the implant under local anesthetic without any complications. Timely use of the ultrasound prevented cancellation of the procedure.

Contraceptive implants occasionally migrate into deeper tissues<sup>2</sup> and become difficult to palpate. Although the use of ultrasound to locate these implants has been described<sup>3</sup>, there have been no reports in an operating room by the anesthetists. A recent review concluded that the use of ultrasound as a primary diagnostic device had a sensitivity of 85% and a specificity of 95.7%<sup>4</sup>. In selected cases, ultrasound may be a useful adjunct to visualise foreign bodies and implants in subcutaneous tissue.

## **REFERENCES**

1. Hatfield A, Bodenham A. Ultrasound: An emerging role in Anaesthesia and Intensive Care. *Br J Anaesth* 1999;83:789-800.
2. Ismail H, Mansour D, Singh M. Migration of Implanon®. *J Fam Plann Reprod Health Care* 2006;32:157-159.
3. Gurel K, Gideroglu K, Topcuoglu A, Gurel S, Saglam I, Yazar S. Detection and localization of a nonpalpable subdermal contraceptive implant using ultrasonography: a case report. *J Med Ultrasound* 2012;20:47-49
4. Mansour D, Walling M, Glenn D, Graesslin O, Herbst J, Fraser IS. Removal of non-palpable etonogestrel implants. *J Fam Plann Reprod Health Care* 2008;34:89-91.



## Can't ventilate, can't extubate!

Nacrin Begum, MB ChB\*, Santhana Kannan, MD, DNB, FRCA\*\*

*Department of Anaesthesia, City Hospital, Dudley Road, Birmingham*

**Correspondence** :Dr. S. Kannan, Department of Anaesthesia, City hospital, Dudley Road, Birmingham B18 7QE, (United Kingdom); Phone: +44 121 5074343; E-mail: [kannan.gas@gmail.com](mailto:kannan.gas@gmail.com).

**Key words:** Tracheostomy; Ventilation; Vocal cord palsy

It may be unheard that a conscious patient with a tracheostomy tube *in situ* presents for anesthesia and poses a serious threat with his airway management. We describe a case scenario in which the tracheostomy tube could not be used to ventilate the patient, nor could it be removed.

A 65 year old man was scheduled for tracheostomy tube change. He had a permanent tracheostomy (Shiley®, reusable inner cannula, cuffless fenestrated 7.6 mm internal diameter tube, Covidien Healthcare, USA) *in situ*. He had developed bilateral vocal cord palsy due to prolonged intubation following coronary artery bypass graft surgery (CABG) six years back. He had had two unsuccessful laser cordotomies for the vocal cord palsy. Patient had also undergone a microlaryngoscopy and biopsy of an anterior laryngeal polyp. He was a controlled diabetic and hypertensive with moderate exercise tolerance. There were no known allergies. He slept using four pillows under as he got panic attacks lying flat. He was an ex-smoker. Body mass index was 35 kg/m<sup>2</sup>. Neck movements were not restricted. At rest, his oxygen saturation was 94% on air. Chest was clear on auscultation.

After routine removal of inner tube for cleaning, he was unable to replace it. He attempted repeated nebulisation

without success. Spontaneous ventilation was not affected. Fiberoptic endoscopy by the surgeon under topical anesthesia showed granulation tissue trapped through the fenestration and obstructing about 50% of the outer tracheostomy tube. After a trial of removal of the granulation tissue using a tracheostomy brush failed, an attempt under general anesthesia was planned.

With the patient sitting up, preoxygenation was done using a Rendell Baker Soucek mask over the outer tracheostomy tube stoma. Anesthesia was induced using 8% Sevoflurane in 100% oxygen after intravenous administration of 50 microgram fentanyl and 0.5 mg of midazolam. Anesthesia was maintained with a target controlled infusion of propofol under spontaneous ventilation. During manipulation by the surgeon, oxygen was insufflated through a small bore suction catheter in the trachea. The outer tracheostomy tube was removed using gentle traction and replaced with a size 8 Silver Negus tracheostomy tube (Kapitex Healthcare, UK). The hemodynamic parameters remained stable throughout the procedure and further clinical course was uneventful. Options for controlled ventilation in similar situation in an emergency include the use of pediatric mask, laryngeal mask airway and mouth to stoma ventilation.<sup>1,2</sup>

## REFERENCES

1. Sharma R. Mask for stoma ventilation: rescue using a Rendell-Baker-Soucek mask after a dislodged tracheostomy tube. *Acta Anaesthesiol Scand* 2008;52:1305-6.
2. Padley A. Yet another use for the laryngeal mask airway – ventilation of a patient with a tracheostomy stoma. *Anaesth Intensive Care* 2001;29:7.

★ ★ ★ ★ ★

## A case of complex inferior limb pain treated with intrathecal betamethasone and intravenous glycerin; importance of comprehensive pain evaluation

Nobuyasu Komasa, Junichi Ikegaki

*Department of Anesthesiology and Palliative Care Medicine, Hyogo Cancer Center Kitaouji-cho 13-70, Akashi Hyogo 673-8558, (Japan); Tel: +81-78-929-1151; Fax: +81-78-929-2380; E-mail: [ane078@poh.osaka-med.ac.jp](mailto:ane078@poh.osaka-med.ac.jp)*

A 63-year-old man underwent right colon resection for cecal cancer following chemotherapy, followed by radiation therapy to the lung, liver and ischial bone metastases. He gradually developed right lower limb pain with numbness and

his walking was affected markedly. He was admitted to the palliative care unit at our hospital for symptom management. Initially, we reasoned that the pain with numbness was caused by the cancerous invasion within the vertebral canal at S1,

but oral oxycodone administration did not provide symptom relief. With the patient's consent, we administered 4 mg of betamethasone in the subarachnoid space.<sup>1,2</sup> after which the patient could walk with a walker. However, the walking instability with lower limb pain and numbness returned 2 weeks later. A second dose of subarachnoid betamethasone 4 mg was not fully effective. Due to development of a slight cognitive disorder, we performed brain magnetic resonance imaging, which revealed a 4×5 cm metastasis in his left frontal lobe. Ten doses of 3 Gy radiation and 40g daily of intravenous glycerin administration relieved his pain and resolved the motor disability. After this treatment, he could walk without walker and was discharged from our hospital. With daily intravenous glycerin administration and oral

betamethasone, he could go traveling or to fitness center for about 1 month after discharge. Then he developed respiratory difficulty which was associated with extensive invasion of lung metastases, and intermittent or continuous sedation was added with his consent. He did not suffer the lower limb pain with numbness to when he died after 5 weeks after discharge.

In the present case, the two cancer metastases, in the vertebral canal and brain were thought to have caused the lower limb pain with numbness. A comprehensive pain evaluation is important for cases involving complex cancer pain with numbness.<sup>3,4</sup>

**Conflict of interest:** None.

## REFERENCES

1. Inada T, Kushida A, Sakamoto S, Taguchi H, Shingu K. Intrathecal betamethasone pain relief in cancer patients with vertebral metastasis: a pilot study. *Acta Anaesthesiol Scand* 2007;51:490-4. .
2. Taguchi H, Oishi K, Sakamoto S, Shingu K. Intrathecal betamethasone for cancer pain in the lower half of the body: a study of its analgesic efficacy and safety. *Br J Anaesth* 2007;98:385-9.
3. Luckett TI, Davidson PM, Green A, et al. Assessment and management of adult cancer pain: a systematic review and synthesis of recent qualitative studies aimed at developing insights for managing barriers and optimizing facilitators within a comprehensive framework of patient care. *J Pain Symptom Manage* 2013;46:229-53.
4. Lovell M, Agar M, Luckett T, et al. Australian survey of current practice and guideline use in adult cancer pain assessment and management: perspectives of palliative care physicians. *J Palliat Med* 2013;16:1403-9.

★ ★ ★ ★ ★

## Apical hypertrophic obstructive cardiomyopathy: a rare entity

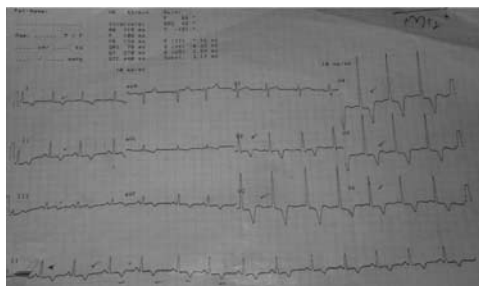
Kale Sunti, MD\*, Aggarwal Shipra, MD\*\*, Talwar Vandana, M.D\*\*\*, Sengar Piyush, MD\*\*\*

\*Senior Resident, \*\*Assistant Professor, \*\*\*Professor

Department of Anesthesiology, Intensive Care and Pain Medicine, Safdarjung Hospital, New Delhi, (India)

**Correspondence:** Dr. Shipra Aggarwal, Department of Anesthesiology, Intensive Care and Pain Medicine, Safdarjung Hospital, New Delhi-29 (India); Phone: 09811420886; E-mail: shipra.mamc@gmail.com

A sixty years old male weighing 80 kg presented to us for FESS (fiberoptic endoscopic sinus surgery). Patient was clinically asymptomatic for any cardiac illness with good effort tolerance. Pre-operative ECG showed global deep T-wave inversion in lead II & lead V of the ECG [Figure 1] for which a cardiology referral was sought. The ECHO report was normal as per the cardiologist and no further



cardiology intervention was advised.

The baseline blood pressure and heart rate were 150/90 mmHg and 77/min respectively. Anesthesia was induced with intravenous midazolam 2 mg, fentanyl 100 µg and propofol 100 mg. Vecuronium bromide 8 mg was given to facilitate endotracheal intubation. Soon after induction, the blood pressure dropped to 67/44 mmHg and HR dropped to 49/ min. The BP and HR remained 86/58 mmHg and 54/ min even after treatment with atropine and mephentermine. The procedure was abandoned in view of further hemodynamic perturbations. Proseal LMA No.4 was inserted till the effect of muscle relaxant wore off. A review cardiology opinion was considered.

Careful cardiology re-evaluation revealed apical wall thickness on echocardiography with normal ejection fraction of 60 %. Angiography report was normal. A provisional

## correspondence

diagnosis of apical hypertrophic cardiomyopathy (AHCM) was made and confirmed by cardiac MRI. Detailed family history revealed familial penetrance. AHCM is a milder form of obstructive HCM which involves the apex of left ventricle.<sup>1,2</sup> Prevalence is 15% in Japanese population and  $\leq 3\%$  elsewhere. AHCM is frequently sporadic but may have an autosomal dominant inheritance. The mean age of presentation is  $41.4 \pm 14.5$  years with male predominance. Generally asymptomatic (54%), it may mimic acute coronary syndromes with morbid events including sudden cardiac arrest<sup>3</sup>.

The most frequent ECG findings are negative T waves ( $\geq$  depth 10 mm) in pre cordial leads (93 %) and left ventricular hypertrophy (63 %).<sup>1</sup> The diagnostic criteria for AHCM include left ventricular hypertrophy with apical wall thickness  $> 15$  mm and a ratio of maximal apical to posterior wall thickness  $> 1.5$  mm on echocardiography. There is characteristic “ace of spades” pattern on ventriculogram. Cardiac MRI is considered to be the most sensitive diagnostic tool. Treatment includes beta blockers,

calcium channel blockers and alcohol ablation.<sup>4</sup>

Anaesthetic challenges in cases of AHCM are related to rarity of condition in non- Japanese population and ECG findings mimicking acute coronary syndromes. Also, the condition can be easily missed on ECHO.<sup>2</sup> Asymptomatic patients presenting with typical ECG findings of global deep T wave inversion should arouse a high degree of clinical suspicion of AHCM. The general principles of anesthesia include minimising sympathetic stimulation, maintenance of adequate preload and afterload, avoidance of tachycardia and increased cardiac contractility.<sup>4,5</sup> There is a paucity of literature on anaesthetic management in cases with AHCM. Though prognosis is better than obstructive HCM, a careful and complete cardiac evaluation will help in reducing peri-operative complications associated with anesthesia and surgery. In our case after establishing the diagnosis and discussing the risk involved with general anesthesia, it was decided to perform the procedure under local anesthesia with monitored anesthesia care.

## REFERENCES

1. Yusuf SW, Bathina JD, Banchs J, Mouhayar EN, et al. World J Cardiol 2011;26(3):256-59.
2. Ates M, Kwong RY, Lipton MJ, Tattli S. Apical hypertrophic cardiomyopathy. Tex Heart Inst J. 2006; 33:408-09.
3. Ridjab D, Koch M, Zabel M, Schultheiss HP, et al. Cardiac arrest and ventricular tachycardia in Japanese type apical hypertrophic cardiomyopathy. Cardiology 2007;107:81-86.
4. Chan SM, Wu CT, Wong CS, Cherng CH, Lu CH. Apical hypertrophic cardiomyopathy mimicking coronary artery disease with unstable angina. J Med Sci 2008;28:035-038.
5. Autore C, Brauneis S, Apponi F, Comisso C, Pinto G, Fedele F. Epidural anesthesia for cesarean section in patients with hypertrophic cardiomyopathy: a report of three cases. Anesthesiology 1999;90:1206-07.

