heart failure were detected. Thyroid function test revealed FT4 of 26 pmol litre\(^{-1}\) (normal 11–22 pmol litre\(^{-1}\)), FT3 of 8.9 pmol litre\(^{-1}\) (normal 3.1–6.8 pmol litre\(^{-1}\)), and TSH of 0.005 mIU litre\(^{-1}\) (normal 0.465–4.68 mIU litre\(^{-1}\)).

Tracheal extubation was performed in order to remove the stimulation of a tracheal tube. The patient was transferred to the intensive care unit, where she was treated with hydrocortisone, propylthiouracil, and iodide. On advice from a cardiologist, the esmolol infusion was discontinued, and diltiazem was continuously administered at a rate of 5–10 mg h\(^{-1}\) after a 20 mg bolus injection. After 10 h of treatment, her condition began to stabilize, heart rate decreased to 92 beats min\(^{-1}\), and all symptoms relieved. The remainder of her hospitalization was uneventful and she was discharged on the 5th postoperative day in a healthy state.

Thyroid storm is usually precipitated by surgery, trauma, ketoacidosis, or infection.\(^3\) Its underlying mechanisms are not fully understood. An increased number of \(\beta\)-adrenergic receptors on target organs may contribute to hyperresponsiveness to catecholamines.\(^4\) This patient appeared to be insensitive to \(\beta\)-blocker. This may be due to abnormalities in the properties and number of \(\beta\)-adrenergic receptors in the heart. An increased dose of \(\beta\)-blocker may be required in these patients, but the underlying causes of insensitivity are still to be determined.

**Declaration of interest**

None declared.

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**Rotational vertigo and nystagmus rapidly after an intrathecal block with bupivacaine and fentanyl**

Editor—We report a case who developed rotational vertigo and horizontal nystagmus 5 min after intrathecal block with bupivacaine and fentanyl. The symptoms completely resolved after 70 min.

A 64-yr-old man (height 180 cm; weight 80 kg) was scheduled for elective total hip arthroplasty due to osteoarthritis. The patient was otherwise healthy, with no current medications or allergies. Spinal anaesthesia was chosen for the surgery. In the sitting position, after preparation with chlorhexidine alcohol solution and lidocaine infiltration of the skin at the L3–4 level, a 25 G pencil-point (Portex\(^w\), Smiths Medical, USA) spinal needle was inserted in the L3–4 interspace. Clear liquor, without any trace of blood, was observed and 2.8 ml isobaric bupivacaine 0.5% (Marcain\(^w\), Spinal, AstraZeneca, Sweden) and 0.4 ml fentanyl 50 \(\mu\)g ml\(^{-1}\) (Fentanyl\(^w\), B. Braun, Germany) were given. The patient experienced no pain or paresthesia during the placement of the needle or injection of the drug. The patient was then placed in the right lateral position. About 5 min later, the patient experienced severe rotational vertigo. Bilateral horizontal nystagmus was observed. The systolic arterial pressure decreased from 110 to 66 mm Hg. Ephedrine 10 mg was given with a rapid recovery of the arterial pressure to 130/70 mm Hg. The patient had normal sensory perception and strength in his upper extremities. The surgery was cancelled due to the continued horizontal nystagmus and vertigo. The patient was taken to the post-anaesthesia care unit (PACU) for observation. In the PACU, arterial pressure was 140/75 mm Hg, respiratory rate 13 bpm, saturation 100%, haemoglobin 12.2 g dl\(^{-1}\), and troponin T was negative. ECG was normal as was a computed tomography scan of the head without contrast. Neurological examination was normal above the T4 level except for the horizontal nystagmus and rotational vertigo. The nystagmus and vertigo were not related to the body position. The symptoms gradually resolved and had completely disappeared after about 70 min. The motor function in the lower extremities recovered after a couple of hours and showed Bromage of 0. Two weeks after this, the patient underwent an uneventful elective total hip arthroplasty under general anaesthesia.

NAP3 in the UK found the incidence of permanent harm after spinal anaesthesia to be 1.6–2.6:100 000.\(^1\) Complications associated with intrathecal opioid administration include nausea, vomiting, pruritus, and urinary retention.\(^2\) Neurological complications are rare,\(^3\) although vertical nystagmus after epidural opioids has been reported.\(^4\) Small doses of epidural opioids have been reported to cause vestibular dysfunction.\(^5\) Impaired auditory function is a relatively lesser recognized complication of spinal analgesia.\(^6\) Downbeat nystagmus, nausea and vomiting 10 h after preoperative intrathecal administration of bupivacaine and morphine have been described.\(^7\) The symptoms spontaneously disappeared after 24 h. A 43-yr-old woman undergoing Caesarean section developed rotational vertigo and horizontal nystagmus 3.5 h after spinal anaesthesia injection with tetracaine HCl and morphine HCl.\(^8\) After two doses of naloxone 0.1 mg, the nystagmus disappeared.

Nystagmus and rotational vertigo rapidly after an intrathecal injection of bupivacaine and fentanyl has not been reported previously. Possible mechanisms include bupivacaine or opioid central nervous system toxicity, a vestibular
pressure effect of the injected drugs, or a partly subdural drug injection.

**Declaration of interest**

None declared.

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**Uvular trauma from a laryngeal mask**

Editor—Sore throat is common after operation with reported rates of around 40% after intubation and around 7–12% in laryngeal mask use.¹ Pain typically resolves after 24–36 h. However, persistent or worsening pain, associated with a sensation of something in the throat, odynophagia, or gagging, is a rare occurrence and likely to indicate some degree of uvula trauma (oedema or necrosis) or infection.

Uvula necrosis has been reported after tracheal tube intubation as far back as 1978.² Necrosis of the uvula may also occur after long-term intubation,³ blind suctioning,⁴ gastrointestinal endoscopy,⁵ and transnasal bronchoscopy.⁶ Necrosis is thought to result from simple mechanical interruption of blood supply to the uvula tip.

We report the case of a female, aged 32 who presented to ENT emergency clinic with severe oropharyngeal pain, dysphagia, and difficulty swallowing. The oropharyngeal pain had worsened over 3 days since undergoing a minor gynaecological procedure 4 days previously under general anaesthesia with a laryngeal mask airway. The procedure was short, lasting 15 min, no throat pack was used, and there was no use of oropharyngeal suctioning perioperatively.

After operation, the patient noted an oedematous uvula which progressively became indurated, blue and latterly turned white. These changes were accompanied by worsening oropharyngeal pain unresponsive to paracetamol and ibuprofen. Visual inspection revealed a necrotic uvula (Fig. 1). She was treated conservatively with reassurance, augmented analgesia, hydrogen peroxide gargles, and prophylactic antibiotic cover with a good outcome.

Uvular trauma has been reported after laryngeal mask airway (LMA) use.⁷ LMA cuffs are permeable to nitrous oxide and carbon dioxide, which can result in increased cuff pressure during prolonged procedures, resulting in postoperative sore throat and pharyngeal/uvula oedema. However, this is unlikely in this case, given the short anaesthetic.

Review of the literature back to 1984 produce 14 reported cases where routine perioral interventions have led to uvula necrosis. Details regarding age and gender were available in nine cases [eight males, mean age 34.5 (range 20–57)], suggesting that males are more at risk of severe uvula oedema or necrosis. Given the younger age of many of these cases, trauma/oedema/necrosis may result from a relaxed approach to oropharyngeal care as this group may be seen as having fewer co-morbidities and shorter procedure times. However, it is more likely, as is the case in obstructive sleep apnoea, that men may be truly at greater risk of uvula/pharyngeal trauma, given that there are significant structural differences in the upper airway between men and women. Men have significantly more non-fat soft tissue in the neck, especially a more bulky tongue and soft palate.⁸ This non-fatty tissue is predominantly muscle and thus on reduction in muscle tone as a result of anaesthesia or sleep may result in flaccid soft tissue that is prone to mechanical disturbance.

Whatever the mechanism of trauma leading to uvular necrosis, potentially severe airway compromise can result. We suggest that it is prudent to consider male patients undergoing day-case procedures as ‘at more risk’ of