care is taken to fully engage the syringe to prevent the risk of leakage as mentioned by the authors as a risk with this combination. However, having used a Luer connection syringe for 15 yr in my practice, I am convinced that this makes displacement of the needle less likely to occur during connection.

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Editor—We thank Dr Davies for his comment. All currently available spinal needles have Luer pattern connectors, and what he is recommending is the use of syringes and needles with Luer-lock connectors. We can appreciate that their use might reduce the risk of anterior or posterior displacement, but we note that he still invokes the qualification ‘hopefully’, so the user must still be aware of the risk.

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Anaesthesia for a patient with Isaac’s syndrome and myasthenia gravis

Editor—Isaac’s syndrome is an extremely rare peripheral motor neurone disorder first described in 1961.1 Hyper-excitability of peripheral motor nerves leads to incapacitating muscle twitching, cramps, myokymia, pseudomyotonia, and mild weakness.2 The abnormal activity persists during sleep and general anaesthesia and may be unaffected, reduced, or abolished by peripheral nerve block.3–5 We describe the anaesthetic management of a patient with Isaac’s syndrome myasthenia gravis and thymoma. The presence of myasthenia gravis advocated avoiding neuromuscular blocking agents during surgery, but it was not known whether involuntary movements could be abolished without neuromuscular blocking agents.

A 65-yr-old male with a 2 yr history of myasthenia controlled with pyridostigmine 60 mg presented with hyperhidrosis, tremors in hands, easy fatigability, and weakness in hands and lower limbs increasing over a 6 month period. The patient had incapacitating muscle twitching, muscle cramp, and weight loss of about 6 kg in 2 months. Electromyographic studies led to the diagnosis of acquired neuromyotonia or Isaac’s syndrome. Fibrillation, positive sharp waves, and continuous muscle fibre activity at frequencies of 100–300 Hz were also present. The patient was put on carbamezapine 200 mg b.d. and showed some improvement in symptoms without complete resolution. His myasthenia had also deteriorated in the preceding 2 months. A CT of the chest showed the presence of thymoma and thymectomy was planned for the patient.

On examination, the patient had persistent involuntary movements of both the hands. The upper limbs showed weakness with power being 3/5 in all muscle groups. The other investigations were within normal limits. Pulmonary functions tests showed mild restrictive pattern.

Premedication was with ranitidine, ondansetron, and alprazolam. Monitoring included oximetry, ECG, non-invasive arterial pressure, neuromuscular monitoring, temperature, and central venous pressure. A thoracic epidural catheter was placed at T5–6 before induction. Anaesthesia was induced with fentanyl 2.0 \( \mu \)g kg\(^{-1}\) and sevoflurane was started at 6% volume with \( O_2-N_2O \) in the ratio of 50:50. The trachea was intubated without neuromuscular blocking agents using an 8.5 mm ID TT after direct laryngoscopy and spraying of larynx with xylocaine 10%. After induction, arterial pressure decreased to 88/64 mm Hg and an infusion of dopamine 4–6 \( \mu \)g kg\(^{-1}\) h\(^{-1}\) was started. Anaesthesia was maintained with sevoflurane 2.5–3% and an infusion of fentanyl 20 \( \mu \)g h\(^{-1}\) with controlled ventilation with \( O_2-N_2O \) in 50:50 ratio at fresh gas flow (FGF) of 2 litre min\(^{-1}\). After induction, there was complete loss of the involuntary movements of both the hands, and it was decided to proceed with the case without the neuromuscular blocking agent. Neuromuscular monitoring (Datex Ohmeda NMT module) using train-of-four at the ulnar nerve showed a T4/T1 ratio of 0.3–0.4 throughout the surgery which showed sufficient relaxation without the neuromuscular blockers and also led to the abolition of involuntary movements.

After 1 h of surgery, the i.v. fentanyl pump was switched over to epidural supplementation at the same rate. At the end of the surgery, the sevoflurane was discontinued, and spontaneous respiration returned. The trachea was extubated after adequate tidal volume, eye opening, sustained hand grip, and head lift was achieved. The patient was transferred to the intensive care unit for 3 days. The postoperative course was uneventful and the patient was discharged on the 10th day.

In patients with Isaac’s syndrome, involvement of bulbar and laryngeal muscles increases the risk of aspiration and acid prophylaxis is required. Respiratory muscle weakness should be assessed by pulmonary function. Stiff tongue and jaw may lead to difficult intubation. The major anaesthetic concern was the use of neuromuscular blocking agents for this patient. The presence of myasthenia gravis suggests avoidance of neuromuscular blocking agents, but the abnormal activity of the limbs which may...
persist during sleep was a major concern.\textsuperscript{3–5} We could not find any previous reports of general anaesthesia for myasthenia and Isaac’s syndrome.

We made the decision to induce anaesthesia with fentanyl and sevoflurane and intubate the trachea when adequate depth of anaesthesia was reached without the use of neuromuscular blocking agents, and that a neuromuscular blocking agent would be given only if abnormal activity of the limbs persisted. Anaesthesia abolished the involuntary movements, and a possible explanation of this is the increased sensitivity of patients with myasthenia gravis patients to neuromuscular depression by volatile anaesthetic agents.\textsuperscript{6,7}

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Apparent blind spot with the GlideScope\textsuperscript{®} video laryngoscope

Editor—The GlideScope\textsuperscript{®} video laryngoscope (GVL; Verathon Medical, Bothell, WA, USA) is a relatively new indirect laryngoscope for tracheal intubation. Although the first-generation GVL has only a large handle,\textsuperscript{1} the second-generation model has small and mid-size handles in addition to the large one.\textsuperscript{2} Using these little GVL handles, one can perform tracheal intubation even in young children.\textsuperscript{2–4} However, some reports describe problematic intubation in some neonates using the GVL, relative to direct laryngoscopy.\textsuperscript{2} In addition, the BURP manoeuvre (backward, upward, and right-sided pressure on the thyroid and cricoid cartilages) has been reported to provide better glottic exposure with paediatric GVL.\textsuperscript{3} The GVL exposes the glottic opening through non-line-of-sight, and in theory, there is no need for the BURP manoeuvre to view the glottis using the device. We suggest a possible reason for the occasional failure of the small GVL handle to expose the glottis and the need for the BURP manoeuvre in paediatric GVL for glottic exposure. The views of the small and mid-size GVL handles appear to have a blind spot just below the tip of the blade (Fig. 1). The camera’s field of view does not cover the tangent of the distal half of the blade. For the small GVL camera, the blind area appears to be 2 mm wide just below the tip of the blade (Fig. 1A), and for the mid-size GVL camera, the area is 13 mm wide (Fig. 1B). The infant’s airway is typically 3–4 mm in diameter; the small GVL handle, with a 2 mm width blind spot just below the tip of the blade, might affect intubation, especially in neonates with high- and anterior-positioned glottis. On the other hand, the mid-size GVL handle with 13 mm width blind spot may require a more anterior direction of the camera view and BURP manoeuvre, to obtain a better exposure of the glottis. Anaesthetists

![Fig 1 Actual LCD monitor view obtained through the GVL camera that captured a ruler. The tip of the blade was just placed at 0 mm of the graduation on the scale.](https://academic.oup.com/bja/article-abstract/103/3/460/245097)