Medialisation laryngoplasty (ML i.e. Type I Isshiki thyroplasty) and arytenoid adduction are the mainstay of surgical management of unilateral vocal cord paralysis. Their relative merits and indication continue to be debated, however most authors agree that while arytenoid adduction alone does not provide adequate sustained glottic closure, improved long-term phonatory results are achieved with medialisation laryngoplasty. In addition ML also has the advantage of being reversible and fine tuning of the voice can be achieved when the procedure is done under local anaesthesia.

Medialisation laryngoplasty originally described by Isshiki in the early 1970s consisted of a cartilage graft to medialise the vocal fold. Subsequently Koufman popularised the use of Silicone elastomer. A variety of implant materials have been described by different authors to achieve this with no study proving the superiority of one material over another. To date this remains a matter of surgeon’s preference.

However, Silastic (hardened silicone) and Gore-Tex (expanded Polytetrafluoroethylene, ePTFE) remain popular in the majority of laryngeal framework surgery. Implants carved from a block of Silicone during surgery can be associated with handling problems such as difficulty in carving accurately, rough or irregular edges, migration, and increased length of surgery. The technique also requires precise window placement.

To counter these problems we have found Vascular-Patch made of aliphatic Polyester Urethane (Braun Aesculap, Germany) very useful with predictable results and good intraoperative handling.

Technique

The laterality and degree of vocal cord paralysis is confirmed via flexible laryngoscope on the day of surgery. The procedure is performed under local anaesthesia, with sedation reserved for anxious patients. This ensures that the patient is responsive during surgery to help assess the voice and assist in positioning of the implant. The patient is placed supine with slight neck extension. Nasal cannulas are used to deliver oxygen during surgery and the patient’s vital signs are monitored throughout. The skin is cleansed and draped from the mandible to the clavicles. We do not use Tran nasal flexible laryngoscopy during surgery.

Thereafter the thyroid notch, cricoid cartilage, midline and the lateral thyroid cartilage margin are identified and marked. Local anaesthesia is infiltrated along a horizontal line bisecting the thyroid ala and haemostasis achieved.

After wide exposure the next step is creation of a cartilage window in the thyroid ala. Measuring scales are used to mark out a window. This is 0.5 cm from midline with a dimension of 0.5 cm height x 1.0 cm length; projecting inferiorly from the horizontal line bisecting thyroid ala. Depending on the calcification of the cartilage a blade or a burr is used. Care is taken at the deeper part to maintain the integrity of inner perichondrium. This is then elevated circumferentially using a Freer elevator while taking every precaution to maintain its integrity.

Thereafter the implant is prepared. This is 1 x 7 cm Vascular-Patch ribbon which is routinely used for vascular surgeries. This is rolled in the form of a Swiss roll. A blunt instrument placed in the window at different points is used to provide temporary medialisation of vocal fold by depressing it and the voice assessed continuously. Once the point of maximum improvement is determined the ribbon is placed there and the voice assessed. Positional manipulation is carried out to fine tune and find the area of maximum improvement. If the voice appears too tense the ribbon is partially unfolded and part of the length excised to decrease the volume. Once the voice is deemed satisfactory after manipulations, the roll is secured by a through and through 4/0 Prolene and placed in the pre determined area. The graft is secured between the perichondrium medially and by tucking it under the

The patient is nursed overnight and discharged the following day. No antibiotics are prescribed.

The patient is advised to have the sutures removed by his General Practitioner at around seven days’ time.

Isshiki Thyroplasty

The patient is nursed overnight and discharged the following day. No antibiotics are prescribed. The patient is advised to have the sutures removed by his General Practitioner at around seven days’ time.

The patient is nursed overnight and discharged the following day. No antibiotics are prescribed. The patient is advised to have the sutures removed by his General Practitioner at around seven days’ time.

The patient is nursed overnight and discharged the following day. No antibiotics are prescribed. The patient is advised to have the sutures removed by his General Practitioner at around seven days’ time.
edges of the thyroid cartilage laterally. Occasionally the implant is further secured by separate 3-0 nylon sutures placed through the ribbon and thyroid cartilage around the window or by application of bone wax. Finally the wound is irrigated and closed in layers and the skin closed with 6-0 Ethilon. Drains are rarely needed.

The patient is nursed overnight and discharged the following day. No antibiotics are prescribed. The patient is advised to have the sutures removed by his General Practitioner at around seven days’ time. We advise normal voice use but to avoid shouting for one week post-operatively. The patient is reviewed after four weeks to assess voice and confirm endoscopic medialisation. To factor in postoperative oedema and vocal fold adaptation, the patients are made aware of the expected gradual evolution of voice after surgery. Supportive voice therapy is advised as needed.

Discussion
We have found the malleable Vascular-Patch ribbon an excellent tool for medialisation laryngeal framework surgery. This is easy to handle and permits precise placement and volume manipulation as the voice is dynamically assessed. This also allows a great degree of flexibility in terms of window placement as it can even be manipulated to paraglottic areas not immediately underlying the window. In addition they are easy to remove or manipulate during revision surgeries if needed in future.

Contributors to ‘How I Do It’

Mr Muhammed Shakeel, FISTIA in ENT, Aberdeen Royal Infirmary, Aberdeen,

Mr Mrinal Supriya, Specialist Registrar, Aberdeen Royal Infirmary, Aberdeen,

Mr Kim W Ah-See, MD, FRCS, FRCS(ORL), Consultant Otolaryngologist-Head and Neck Surgeon, Aberdeen Royal Infirmary,

Correspondence Aberdeen Royal Infirmary, Foresterhill, Aberdeen, AB25 2ZN, UK.
+44 (0)122 455 3571
Email: kim@ahsee.plus.com