

The McGrath Series 5 Video Laryngoscope

Interview with Matt McGrath (CEO, Aircraft Medical) and Dermot McKeown (Consultant Anaesthetist, Edinburgh Royal Infirmary)

Matt McGrath: More than 60 million patients every year are intubated, which is placing an endo-tracheal tube into their airway so that a doctor and medics can secure a patient's breathing.

Dermot McKeown: Mother and baby units are specialist mental health units that are there to support new mothers with young babies, when they need to come into hospital.

The units are staffed by nurses with special experience and expertise in looking after babies. Our unit has a paediatrician, a psychologist and a pharmacist, who can specialise in giving advice, on the kind of medications that are safe in breastfeeding for example. And so if a new mother needs to come into hospital for mental health treatment, she doesn't have to be separated from her baby.

MM: So this is the traditional Macintosh laryngoscope, which was designed by Robert Reynolds Macintosh and his technician in, I believe, 1943. And it has a tubular handle section and a curved blade, quite a shallow curve. The blade's not sharp, and a bulb on here to illuminate the laryngeal area. So in use the laryngoscope is placed into the patient's mouth, sweep the tongue to the side, and what I'm trying to do now is to lift all of this anatomy, the jaw and the tongue and everything, so that I can get a direct view of the vocal cords. And to do that I'm having to use quite a significant level of force and trying not to put pressure on the teeth, which requires some skill.

DM: In a small number of patients that direct line of sight isn't easy to achieve. And particularly if the person is inexperienced, the chance of that failing to get the line of sight is more common. And even for experienced doctors there are some patients in whom it is not possible to get a line of sight view of the larynx.

MM: As you can imagine, the patient doesn't have oxygen during this critical time period, so anxiety levels go through the roof. So up to 500 000-plus patients a year suffer serious trauma as a result of failed intubations. So the need was to overcome those issues. The McGrath Series 5 Video Laryngoscope, which was developed by Aircraft Medical, is the world's first fully portable video laryngoscope. That means that it's the first video laryngoscope to have a camera and a screen incorporated in the device with no external cables. Other video laryngoscopes have been developed in the last five years, which have external screens and cables. The benefit of having this portable device is that it's ready for use both in routine hospital or operating room procedures, but also in emergency cases in ER and A&E, where time is short.

DM: Rather than the direct line of sight, this allows us to get the view on the screen looking, if you like, around the corner where previously we couldn't see. So this really converts many of those patients in whom we get less of an adequate view into, in our experience, to virtually 100 per cent getting a good view of the larynx.

MM:

So other features of this new product are, it's the first video laryngoscope to have a disposable blade, which is guaranteed sterile for every patient. And the first to have an adjusting length function, which means users don't have to carry different sized blades as you do with a traditional laryngoscope. So in use, the main differences are the blade is more curved than a traditional Macintosh, which means that it more naturally follows the anatomy. Of course, the camera is positioned here, which looks around the corner for you. And so in use, I would put the blade in the midline and I'm very delicately and gently curving the blade around and I can see on the screen here an image of the vocal cords with no problem. And I'm using no force and delicately I can take this tube and place it straight into the vocal cords under vision, whereas otherwise I would not be able to do that. And if you can imagine then, with a more difficult patient, where the head is forward or the teeth is closed, I still have a perfect view of the vocal cords.

Following the end of the Wellcome Trust-funded project, we then began to sign distribution contracts with specialist distributors. Our prime distributor in the US, exclusive distributor, is LMA North America, who are in my opinion the leading brand in airway management, who had developed their own airway product: the laryngeal mask. That since has – more than 300 million patients have been treated with that, so a phenomenally successful company. And so by engaging with LMA, that gave us the opportunity to access about 7000 US hospitals, plus the reputation of this company combined with our product, which was ground-breaking. It's an excellent partnership that we've got. And in 15 other countries we're working with other distributors already to address, probably accessing now more than 10 000 hospitals.

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