

TWJ Short Fellowship report

European Institute for ORL, Sint Augustinus, Antwerp

April 2019

I visited the European Institute for ORL at the Sint-Augustinus site, Antwerp, Belgium with the principal intention of learning a new technique – bony obliteration tympanomastoidectomy for cholesteatoma. Having not had a great deal of exposure to mastoid obliteration in my training I felt this would be a very useful technique to learn as I begin my otology practice as a new consultant.

I came away from Belgium with far more than I expected. Not only was the surgical technique explained, demonstrated and taught in fine detail, but also the philosophy behind this approach was argued and the impressive results presented. I observed a variety of other major ear surgeries, picking up a range of useful tips and methods along the way.

On the first morning I was welcomed and shown around the department by Professor Offeciers and his Fellow Dr Schneider. The Otology department in Sint Augustinus is very nicely presented with excellent facilities and an impressive communal meeting room, which appears to be the hub of this busy unit. It was noticeable how the surgeons, audiologists, research scientists, radiologists and other supporting staff all worked efficiently in and around this area.

The theatre set up is similar to most I have worked in within the NHS, with a few noticeable exceptions. There is a large 3D TV set up which allows the assisting theatre staff and observers to follow the surgery in greater detail. This was also linked up to the communal room to allow remote observation. The choice of music in theatre was also a point of great interest; Professor Offeciers preferring either a mellow jazz or classical soundtrack to operate to. My poor knowledge of the UK jazz scene was shown up. The lists ran smoothly with an air of quiet efficiency, calmness with no distractions, despite the complexity of the cases.

A difficult stapedectomy was the first case; a tertiary referral due to active disease around the footplate and cochlea. The pre-op cone-beam CT images give amazing detail of the stapes suprastructure and otic capsule. The 'double-oblique' views used here really were impressive, even on the standard computer screen used in theatre.

Useful tips demonstrated included fully dissecting the chorda anteriorly to give maximal mobility and avoid stretching and trauma. Also, performing the stapedotomy and prosthesis insertion first, followed then by removal of the remaining suprastructure, which reduces trauma and therefore bleeding around the footplate and can improve the operative field particularly with active disease. Providing there is a good fit of the Teflon piston within the stapedotomy, no tissue is used to seal the hole.

In Antwerp, the patients are routinely kept in for 2 days at which point the ear canal dressings are removed and bone conduction is tested. If the thresholds are reduced the patient is given an inhalation treatment with higher CO₂ concentrations in an attempt to improve inner ear vascularity. This practice has come about following in-house research within the department.

I was able to observe other surgeries including cochlear implant insertion, sub-total petrosectomy with blind-sac closure and of course the bony obliteration tympanomastoidectomy (BOT). All were performed with meticulous attention to detail from the opening incision to the placement of ear canal dressings (crafted from Melolin and surgical scrubbing sponges).

I was invited to attend a radiology meeting, hosted by radiologists Dr Bert de Foer and Dr Anja Bernaerts, who have recently published their work on MRI imaging for Ménière's disease. Complex cases were presented and the images systematically reviewed and explained, which lead to interesting discussions in a truly multi-disciplinary fashion about patient management. The value of a truly engaging, dedicated and well-resourced radiology service was clear.

The BOT course comprised 3 days of lectures, temporal bone dissection in the department's skills lab and live video surgery. Hosted by Professor Erwin Officiers and Dr Andrzej Zarowski the faculty also included guests Prof Benghalem from Casablanca and Prof Cenjor from Madrid who both gave inspirational talks on petrous apex cholesteatoma and endoscopic ear surgery respectively.

There were eleven delegates, ten hailing from Belgium and the Netherlands and myself. Fortunately for me the course was delivered in English and the Brexit jokes were all good-natured!

The theories around how and why recurrent and residual cholesteatoma occur were discussed in depth and how this has lead to the formulation of the bony obliteration technique. There are clear differences between the way cholesteatoma is addressed here and what I have observed in my training in England. The most striking fact was that canal-wall down surgery is simply no longer performed, largely due to the success of the BOT technique. Unhygienic/problematic mastoid cavities are also reconstructed using this technique, often requiring an ear canal and tympanic membrane allograft.

The skills lab was well equipped and each delegate was able to dissect both ears on a cadaver head. Each microscope had a camera, allowing the surgeon to take photos or videos of his or her dissection. There was ample time to practice the M-oblique meatoplasty, tympanomastoidectomy with obliteration, subtotal petrosectomy with blind sac closure techniques described in the lectures.

The BOT technique involves an initial combined approach / canal wall up approach to clear the cholesteatoma. The mastoid cavity is then separated from the middle ear by using bone chips to seal off the posterior tympanotomy and

epitympanum. The chips are harvested with a chisel from the cortical mastoid bone. There is a definite craft in this technique, shaping and positioning the chips in layers securely, paying close attention to the very anterior aspect. The level of separation depends on the state of the ossicular chain, and the remainder of the cavity is fully filled with bone dust harvested and stored in Rifampicin.

Throughout the course and observation period I was made to feel most welcome. I genuinely feel that I have learnt a new way of tackling cholesteatoma. There is more to this philosophy than just the surgery; high-class radiology plays a large part as well. I look forward to the challenge of introducing and developing this method in my own practice in the near future and would highly recommend this Fellowship to any final year trainee / new consultant with an interest in otology.

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