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Constructing the Human Face: Learning Anatomy Through Sculpture

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## Constructing the Human Face: Learning Anatomy Through Sculpture

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### Abstract

A good appreciation of complex facial anatomy is critical for head and neck surgeons. Facial anatomy and its subtle nuances is not taught adequately at a junior surgical level and comprises a small niche in the Membership of the Royal College of Surgeons (MRCS) examinations. Learning facial anatomy through sculpture is a novel way for trainees to fully appreciate not only the anatomy, but also the subtleties and variations of the ageing patient. In this article, the author describes his experience of a 5 day course teaching facial anatomy through sculpture.

### Key Words

Education; Sculpture; Face, Anatomy

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The meticulous retrieval of evidence at the scene, the interview of suspects, the officers' best objectivity when analysing such a violation of nature. But most importantly, the crux of the investigative process is identification of the victim. And that's the trouble in a small proportion of murders where the body may not be identifiable, with only the skull to lend clues to the victim's identity.

And that's how it starts, "with just a skull", tells Richard Neave (a retired forensic artist and anatomist). During the five-day course, Richard and a faculty of expert consultant surgeons take a group of 8 trainees through reconstruction from a bare skull, to a complete bust of a live model. The course is run annually in Birmingham and is convened by senior plastic surgeon Francis Peart. It is designed to teach participants the anatomical approach to reconstruction. This involves building layer upon layer over the skull- from accurate muscular attachments, glands and arteries, to discrete fat pads of the face and finally the skin.

Richard starts by explaining the context and importance of skills we are about to learn, choosing an exemplar from his past. He describes in detail how the reconstruction of a skull led to the identification of a young murdered woman in the 1980's. We start from a bare skull with the eyes, observing the bony prominences and foramina that compose the orbit after an informative lecture from an expert oculoplastic surgeon (Fay Mellington). As

a surgeon in training, I spent the lion's share of my learning using the powerful tool of observation- a tool that can go only so far in augmenting and consolidating new knowledge. Such is the power of this course: having learned the anatomy of the orbit, we start by sculpting the delicacy of the tarsal plate and canthal ligaments, out of wax, with careful reverence of their insertions.

At this stage, the sculptures look nothing more than skulls with strangely expressive eyes, disturbingly staring just behind you into the distance. Later in the day we move to the nose, observing and sculpting the shape from wax formed by numerous complex discrete cartilages. Some moments can be frustrating as you realise that your keen sense of observation may not have been as accurate as you'd first envisaged. Missing a detail leads to your nose looking strangely odd. Fortunately, Richard is quickly at hand to correct your mistake and explain the subtlety in the anatomy before we move on to sculpting the many muscles of the face (including the longest named levator labii superioris alaeque nasi muscle).

Sculpting is not the only interest of this course. For each discrete area of the face, sessions are interspersed with seminars and tutorials from experts. This year, Demetrius Evriadiades (a military head and neck surgeon), gave an outstanding lecture on the application of anatomy when reconstructing severe facial injury from the Afghanistan and Iraq

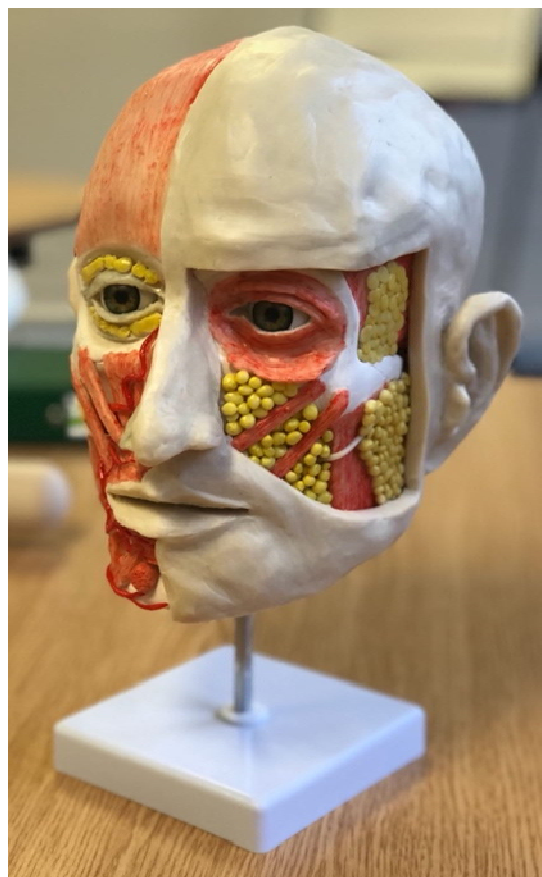
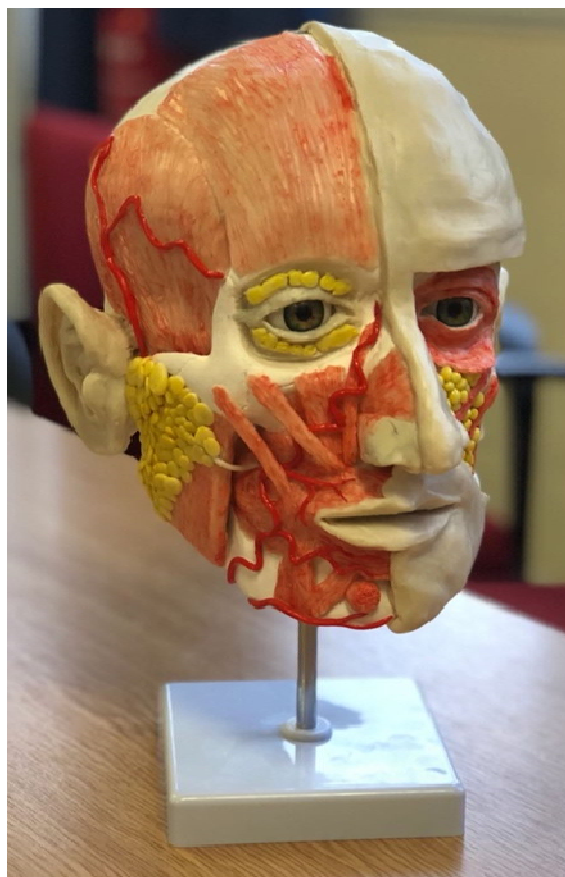
wars. An autologous ear reconstruction surgeon from Hull (Cher Bing Chuo) gave her practical experience when sculpting the key cartilaginous components for a new ear from a harvested rib graft. Interestingly, Francis Peart also gave his excellent guidance on the anatomical variations of the face when aging, and the rationale for surgical intervention for improved cosmesis.

Participants on the course were from all grades and backgrounds, from University students to junior registrars and senior consultants. Not everyone was new to sculpting, with the opportunity to learn from those who had sculpted regularly. For all participants, the course provided the opportunity to kindle the love of human anatomy form through wax sculpture in an environment away from the pressures of clinical practice- a luxury which I certainly very much appreciated. By the end of the course everyone had a great sense of achievement on completion of their sculpture. Each person had

created a unique model, with the individual style and freedom to display key parts of anatomy important or new to them (Figure 1 and 2).

I would whole heartedly recommend this course to anyone interested in surgery or anatomy. Or simply those who are interested in the artistry of how the face is affected by deeper structures. Indeed, one participant was a student artist who used the anatomy learned to create more realistic characters in the film industry.

I think as a plastic surgery trainee, it is imperative to not only appreciate the anatomy but also the beauty and form of the face. The cost of the 5 day course a not unreasonable £600 for trainees and includes artistic material and gourmet hot lunches by the hotel. The course is endorsed by the Royal College of Surgeons of Edinburgh and attracts 29.5 CPD points ([www.buildingthebody.co.uk](http://www.buildingthebody.co.uk)).



*Figure 1 and 2: My completed sculpture*



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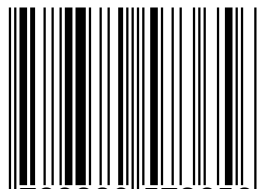


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