

## Clinician involvement in the teaching of anatomy to medical students

Gerard Ahern

Melbourne Clinical School, The University of Notre Dame Australia, Werribee, VIC, Australia

---

### EDITORIAL

---

Please cite this paper as: Ahern G. Clinical involvement in the teaching of anatomy to medical students. *AMJ* 2015;8(7): 247–248. <http://doi.org/10.21767/AMJ.2015.2467>

---

#### Corresponding Author:

Dr Gerard Ahern  
Senior Lecturer, Medical Education and Assessment  
Melbourne Clinical School  
The University of Notre Dame Australia  
Werribee, VIC, Australia 3030  
Email: [gerard.ahern@nd.edu.au](mailto:gerard.ahern@nd.edu.au)

---

As an examiner for a specialist college, I regularly mark first-part papers. The candidates are accredited registrars with many years of medical experience. They are managing real patients with real pathology. I often find the experience depressing and concerning. Many candidates cannot recognise basic structures (e.g., mistaking cuboid for calcaneus) or even invent new ones (e.g., triceps femoris). “Peroneal” is mistaken for “perineal”. When asked to describe the left ventricle, they write on the left lateral ventricle of the brain. They cannot spell anatomical names and basic grammar is poor. These errors involve first- and second-year student anatomical knowledge.

What is going on? The deficiencies in the teaching of anatomy to medical students has been highlighted in multiple articles,<sup>1–3</sup> but the level of anatomy knowledge required by young doctors has skyrocketed in the past 20 years. Use of sectional imaging in particular has led to a whole new area of anatomy that must be added to a congested curriculum. This imaging cannot be sufficiently taught by non-doctors (without appropriate clinician advice) who simply do not have the experience required to read imaging adequately. If you cannot read imaging, you cannot teach it—in fact, doctors without adequate skills also cannot teach it. And with the onset of research-driven anatomy departments, Australian university anatomy departments employ very few (appropriately skilled)

doctors. But non-medical staff could be advised by experienced medical staff on how to teach it. Yet some universities no longer have medically trained staff. To not have medically trained staff on hand to give advice to non-medical staff who are teaching medical students is not acceptable.

Making the situation worse, often money provided by the government for anatomy teaching is redirected to research. The research building is shiny new while the old anatomy museum roof still leaks. The congested anatomy programme can be reduced by just teaching clinical anatomy—i.e., anatomy that is used in relation to a patient interaction—whether it be gross or radiological. Curricula volume can be markedly reduced in this way, but would require anatomy departments to request and take clinician advice. Despite what some surgeons say, it is not necessary to significantly increase hours spent on anatomy—it just requires a revision of content.<sup>4</sup>

Anatomy departments appear to feel that they are there to teach textbook anatomy and anything to do with a patient is something for clinical years. This means useless facts are learnt (such as details of intrinsic back muscles) and specific non-textbook clinical anatomy (such as the importance of the calcar femorale) are not learnt. Anatomy should be taught in the same manner from first year to college graduation. Relearning anatomical facts is not a failure by the student (we all do it) but compounds retention. This retention is improved if anatomy is taught with regard to principles that provide deep learning and allow a principle to be applied to multiple regions of the body to come up with correct answers. The successful “Anatomeia” programme produced by the University of Melbourne is based on this idea.<sup>5</sup> Any national anatomy curriculum, as has been proposed, should throw out useless non-clinical information and include useful applied anatomy.<sup>6</sup> Hence it should be written or at least edited by senior clinical anatomists or involved senior clinicians.

Some non-medical anatomists feel threatened by clinical anatomists and instead choose to close their doors to

doctors. With the presence of inventions such as “triceps femoris”, this growing major deficiency in anatomical knowledge in senior residents and registrars must be potentially dangerous for patients. A sarcoma may be mistaken as the normal third head of triceps femoris. A multi-trauma patient with both head and chest CT scan and clinical notes indicating left ventricular trauma, may have their lateral ventricle more closely scanned. A fractured calcaneus may be missed as the cuboid is the bone concentrated on. One can only imagine the bizarre results of mistaking peroneal for perineal.

Universities must accept that their clinical schools should work hand-in-hand with their anatomy departments in their teaching. There is no place for pettiness where patients are at risk.

---

## References

1. Smith P. Young docs admit poor grasp of anatomy. The Australian Doctor [Internet]. 2014 Apr 28. [cited 2015 Jun 14]. Available from: <http://www.australiandoctor.com.au/news/latest-news/half-of-young-doctors-admit-to-poor-grasp-of-anato>
2. Spielmann PM, Oliver CW. The carpal bones: a basic test of medical students' and junior doctors' knowledge of anatomy. *Surgeon*. 2005 Aug;3(4):257–9.
3. Total Assist Group. Medical students lack anatomical knowledge. 2014 Jun 30. [cited 2015 Jun 14]. Available from: <http://totalassist.co.uk/medical-students-lack-anatomical-knowledge/>
4. Fitzgerald JE, White MJ, Tang SW, et al. Are we teaching sufficient anatomy at medical school? The opinions of newly qualified doctors. *Clin Anat*. 2008 Oct;21(7):718–24. doi: 10.1002/ca.20662.
5. Anatomedia. A new approach to medical education. 2015 [cited 2015 Jun 14]. Available from: <http://www.anatamedia.com>.
6. Craig SJ, Tait N, Boers D, et al. Review of anatomy education in Australian and New Zealand medical schools. *ANZ Journal of Surgery*. 2010;80(4):212–6.

## PEER REVIEW

Commissioned. Peer reviewed.

## CONFLICTS OF INTEREST

Gerard Ahern is an editorial board member of the Australasian Medical Journal.