

Analyzing the Difference between the Amphitheater and the Anatomy Hall/Laboratory

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ABSTRACT: The differences between the amphitheater and the anatomy laboratory/classroom are presented, acknowledging that amphitheatres originated in ancient Rome, primarily as venues for public gatherings, arising from the need to develop a specific architectural space with distinctive characteristics. These structures were divided into one or more levels of arcades, with an elliptical interior surrounded by seating for spectators arranged in ascending tiers. Centuries later, amphitheatres were adapted into anatomical amphitheatres for the performance of dissections, functioning as large and tall auditoriums designed to accommodate a large number of observers around an appropriate dissection table and equipped with good natural lighting to ensure visibility of these practices. Anatomy laboratories/classrooms eventually ceased to follow these classical teaching models due to the emergence of new technologies for the study of the cadaver.

KEY WORDS: education, amphitheater, anatomy laboratory

INTRODUCTION

In various scenarios related to macroscopic anatomy, discussions commonly arise regarding the curricular management of medical programs; likewise, in anatomical congresses and forums, among others, it is often noted that dissection practices used for training students, in order to engage in direct learning about the human body through dissection, make it essential that behavior within the amphitheater be appropriate (Florida Caicedo, 2016). Similarly, it is noted that the subject of human macroscopic anatomy is organized according to the classical teaching model, involving a practical component, generally in the amphitheater (Rodríguez García *et al.*, 2016, Rodríguez Campo & Osorio Toro, 2022).

The objective of this work is to indicate that, in most cases, anatomical practices of dissection and/or prosection are currently carried out in anatomy laboratories or dedicated rooms, without necessarily involving the use of amphitheatres.

HISTORICAL AND EDUCATIONAL CONTEXT

Role of anatomy laboratories in modern education

The teaching of anatomy has been fundamental in the training of surgeons, both from a technical point of view, guiding surgical gestures, and from an intellectual point of view, leading them to become familiar with scientific observation; however, the teaching of human anatomy, historically linked to the study of human cadavers through observation and dissection, despite the passage of time and advances in texts and multimedia tools, is not conceived without incorporating teaching–learning processes that take place in anatomy laboratories (Tiznado-Matzner *et al.*, 2019), whose anatomical practices involve dissection, teaching, or both (Fig. 1). Therefore, this corresponds to an anatomy classroom and the dissection laboratory (López Castro, 2016), not anatomical amphitheatres.



Fig. 1. Human macroscopic anatomy laboratory.

Historical origin of anatomical amphitheaters

These were the privileged and original place for the teaching of anatomy in Europe at the beginning of the 15th century, where modern surgery was born from the advances achieved in those amphitheaters (Marré & Villet,

2020), while others contradict this by indicating that the anatomy laboratory is an amphitheater (Florida Caicedo, 2016), since the initial amphitheaters located in Rome, in region IX Circus Flaminius during the transition from the Roman Republic to the Empire between the 1st century BCE and the 1st century (Fig. 2), some were public buildings that originated from the need to develop spectacles in a specific space, whose construction apparently originated in Campania but developed in Rome after the end of the Republic (Varela Larrota, 2024). Furthermore, the dissemination of medical tools in the Balkans during the Roman period was concentrated around military garrisons, in settlements built near military routes, and in those that had an amphitheater associated with gladiators (Baycan, 2017).

Architectural characteristics and function

These amphitheaters were mainly intended for gladiatorial combats and venationes—hunting spectacles and animal exhibitions—which previously took place in the forum, where temporary seating had been erected around the open area, forming an irregular ellipse (Rich, 1901; Varela Larrota, 2024). The exterior was always formed by an oval wall, divided into one or more levels of arcades depending



Fig. 2. Ruins of an ancient open-air amphitheater.

on the size of the building, and decorated with columns, pilasters, etc.; the interior formed an elliptical bowl, surrounded by seating for spectators, rising in steps (Rich, 1901).

Transition to anatomical theaters

This was the reason for the amphitheater's shape and its very name, which means "having seats on all sides," a feature that has long not been used in places intended for dissection and anatomical teaching (Varela Larrota, 2024). The first permanent anatomical theater appears to have been that of Salamanca, built with the support of Charles V in 1554, followed by Barcelona in 1573, Padua in 1584, Zaragoza in 1586, Leiden in 1593, and Paris around 1610. These places were established within institutions and had variable durations, and in some cases were constructed with great beauty (Fig. 3); examples include the Padua theater of 1594 and the Bologna theater in the Archiginnasio Palace, built in 1649 (Marré & Villet, 2020).

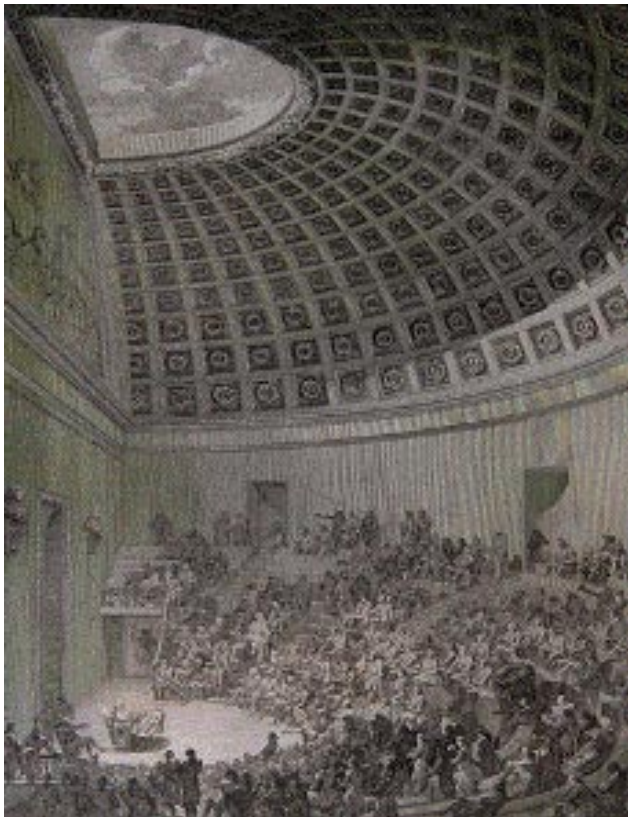


Fig. 3. The image is an engraving of the anatomical amphitheater of the old School of Surgery of Paris.

Early dissection practices and visibility limitations

Initially, dissections were performed by placing the cadaver on boards supported by wooden trestles and, in some exceptional cases, on marble tables, so it is evident that visibility for attendees at the anatomical lesson was almost nonexistent. This situation persisted until 1497, when the anatomist of Padua, Alessandro Benedictus, inspired by an ancient Roman amphitheater located in Verona, suggested that a dissection theater should have an auditorium large and high enough to accommodate a large number of observers, an adequate dissection table with good natural lighting, the best possible visibility for attendees, proper ventilation, at least two guards to prevent undesirable individuals from entering the premises, and a person responsible for collecting admission fees (Marré & Villet, 2020).

Decline of amphitheaters in anatomical teaching

During the 1830s, interest in anatomical amphitheaters declined, as they lost their appeal for the teaching of anatomy due to the increasing quality of illustrations, both in richly illustrated reference books and in everyday manuals for learning, and the general public developed other types of collective entertainment, such as circuses and fairs where anatomical "monstrosities" were displayed (Marré & Villet, 2020).

Ritualization of anatomical teaching practices

The theatricality of anatomy classes was meticulously ritualized, with regional variations, where the anatomist professor delivered the lesson seated in a chair, following the work of the dissector or prosector in charge of the dissection (Marré & Villet, 2020); the ostensor: an indicator of the structure (Duque Parra *et al.*, 2025). In addition, assistants collected the remains left behind to throw them to the dogs (Fig. 4) (Marré & Villet, 2020).

Emergence of audiovisual technologies in medical education

Between the late 1940s and the early 1950s, color medical television was presented to administrators and educators



Fig. 4. Frontispiece of *De Humani corporis fabrica* in which a dog, marked with a red circle, can be seen feeding on dissection remains.

of American hospitals as a form of enhanced visualization that could modernize, refine, and replace the amphitheater, to such an extent that actors from the television and pharmaceutical industries, together with educators and medical administrators, asserted this in their advertising materials and in statements to the press, positioning this tool as ideal for medical education, reconfiguring a series of procedures, visual strategies, and everyday management (Murray, 2020).

Contemporary anatomical education without amphitheaters

At present, dissection and the examination of prosected cadavers are tools for the teaching of anatomy (Mohedano-Moriano *et al.*, 2025), since, given the growing importance of diagnostic imaging techniques in clinical practice, comprehensive long-term anatomical training is required to ensure that students can accurately distinguish anatomical structures and interpret images. Therefore, anatomy laboratories, in order to improve student motivation and their perspectives on learning anatomy, develop

integrated anatomical practice programs combining cadaver dissection (Kawashima *et al.*, 2022), which do not require amphitheaters.

CONCLUSION

Anatomical amphitheaters arose from the designs of ancient circuses in Rome and were designed in such a way that they could have multiple seats to allow the visualization of dissections. With the advancement of anatomy, anatomical classes introduced prosections to have prepared body parts, which were developed in laboratories in a non-tiered manner. At present, and for many years now, amphitheaters are no longer used, but rather teaching rooms and anatomy laboratories.

REFERENCES

- Baykan D. Medicine in Balkans during the Roman period. *Balkan Med J.* 2017; 34(4):295-300. <https://doi.org/10.4274/balkanmedj.2017.0474>
- Duque Parra JE, Duque Colorado J, Ottone NE, Ballesteros Acuña E, Algieri RD, del Sol M. Andreas Vesalius, the Prince of anatomy: An anatomical analysis of the trachea, rectus abdominis muscle, and sacrum in *De Humani Corporis Fabrica*. *Int J Morphol.* 2025; 43(4):1402-1408. <http://dx.doi.org/10.4067/s0717-95022025000401402>
- Florida Caicedo CA. *Anatomía humana. Manual de laboratorio.* Universidad Nacional de Colombia, 2016.
- Kawashima T, Sakai M, Hiramatsu K, Sato F. Integrated anatomical practice combining cadaver dissection and matched cadaver CT data processing and analysis. *Surg Radiol Anat.* 2022; 44(3):335-343. <https://doi.org/10.1007/s00276-022-02890-2>
- Lopez Castro MB. El aula de Anatomía y el laboratorio de disección Una aproximación etnográfica al estudio de la anatomía humana. *Cuadernos de Antropología Social.* 2016; 43:129-142.
- Marre P, Villet R. Anatomy theaters in the history and teaching of surgery. *J Visc Surg.* 2020; 157: S73—S76. <https://doi.org/10.1016/j.jvisurg.2020.03.005>
- Mohedano-Moriano A, Romo-Barrientos C, Flores-Cuadrado A, Ubeda-Bañón I, Gonzalez-Gonzalez J, Gil Ruiz MT, Saiz-Sanchez D, *et al.* Anatomical dissection influences emotions of podiatry students. *J Foot Ankle Res.* 2025; 18(1):e70027. <https://doi.org/10.1002/jfa2.70027>
- Murray S. The new surgical amphitheater: Color television and medical education in Postwar. *America Technol Cult.* 2020; 61(3):772-797. <https://doi.org/10.1353/tech.2020.0073>
- Rich, A. *A dictionary of roman and greek antiquities with nearly 2000 engravings on wood from ancient originals.* Longmans Green, and Co, London, 1901.
- Rodríguez Campo A, Osorio Toro S. Enseñanza- aprendizaje de la anatomía macroscópica humana: estrategias de literacidad académica. *Salud UIS.* 2022; 54 (1):10.
- Rodríguez-García F, Miranda-Villera C, Peynado-Vila A, Prado-Cantillo D. Anatomía quirúrgica del músculo glúteo mayor: Espacio Intramuscular de FROD. *Cir Plást Iberolatinoam.* 2016; 42 (2): 149-156.

Tiznado-Matzner G, Bucarey-Arriagada S, Aravena PC. Journey through the reality of human anatomy laboratories of 12 chilean universities. *Int J Morphol.* 2019; 37 (1): 17-21. <http://dx.doi.org/10.4067/S0717-95022019000100017>

Varela Larrotta LS. Maestrante en Investigación Arqueológica Universidad Complutense de Madrid, España. De la Roma republicana a la Roma imperial. Anfiteatros iniciales del I a. C y I d.C: Estalio Tauro, Calígula y Nerón. *Lucem.* 2024; 9: 1-27.