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The Correlation between the frescos by Giorgio Vasari and Leonardo Da Vinci's Anatomy

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Abstract

The object of this research is the frescos of Giorgio Vasari. The details of each episode of the painting are interpreted in anatomical aspect and compared to the anatomical drawings of Leonardo da Vinci. The comparison reveals the similarity between the details of this painting and Leonardo's anatomy.

Keywords: Giorgio Vasari • Battle of Marciano • Human anatomy

Introduction

Ancient medical practitioners had contradictory views about the significance of the human anatomy. Renaissance physicians began to dissect the human body with greater frequency at the end of the fifteenth century.

Materials and Methods

The object of the research is the frescos performed by Giorgio Vasari in Palazzo Vecchio, which consists of six episodes (Figure 1).

Figure 1: "The battle of Marciano" by Giorgio Vasari
I- Defeat of the Pisans at the Tower of San Vicenzo
II- Maximilian of Austria attempts the conquest of Leghom
III- Pisa attacked by the Florentine troops
IV- The taking of Siena
V- The conquest of Porto Ercole
VI- The victory of Cosimo at Marciano in Val Di Chiana
The details of each episode of the painting are interpreted in anatomical aspect and compared to the anatomical drawings of Leonardo da Vinci.

Results

In first figure 1(I), episode the sequence is between the details that correspond to the right auricle, right atrium, right ventricular cavity, aortic bulb, ascending aorta, brachiocephalic trunk, left common carotid artery, left subclavian artery, left atrial cavity, mitral and aortic valves, left ventricular cavity, and superior vein cave (Figure 2).

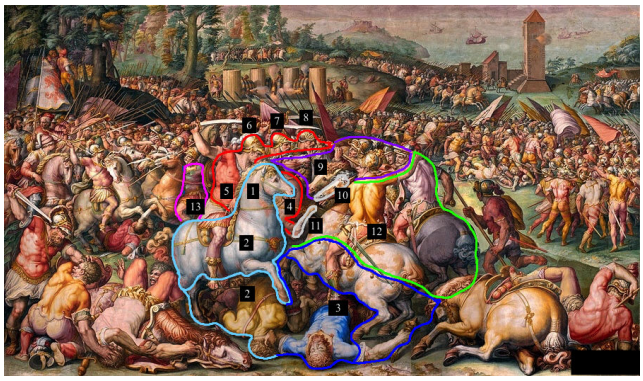

Figure 2: 1-Right auricle; 2-Right atrium; 3-Right ventricular cavity; 4-Aortic bulb; 5-Ascending aorta; 6-Brachiocephalic trunk; 7-Left common carotid artery; 8-Left subclavian artery; 9-Left atrial cavity; 10-Mitral valve; 11-Aortic valve; 12-Left ventricular cavity; 13-Superior vein cave.

The first episode of "The battle of Marciano" resembles a drawing of da Vinci, where the wizard depicts the heart cavities (Figure 3).

In figure 1(II), the sequence is between the details that correspond to the right lobe, left lobe, common hepatic artery, portal vein, gallbladder, duodenum, lumen of duodenum, the bile, and common hepatic duct (Figure 4).

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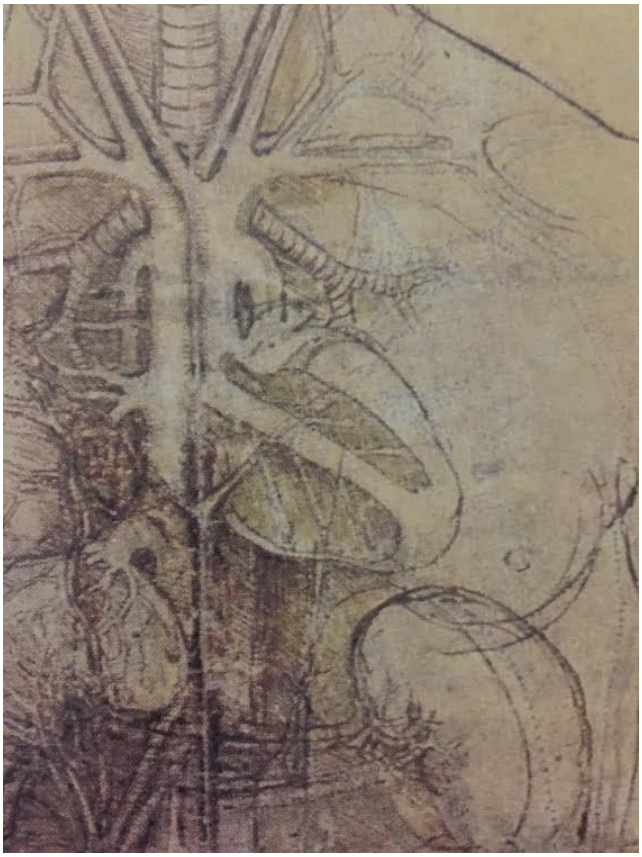

Figure 3: Anatomical sketch of Leonardo da Vinci-RL 12281r; K/P 122r.

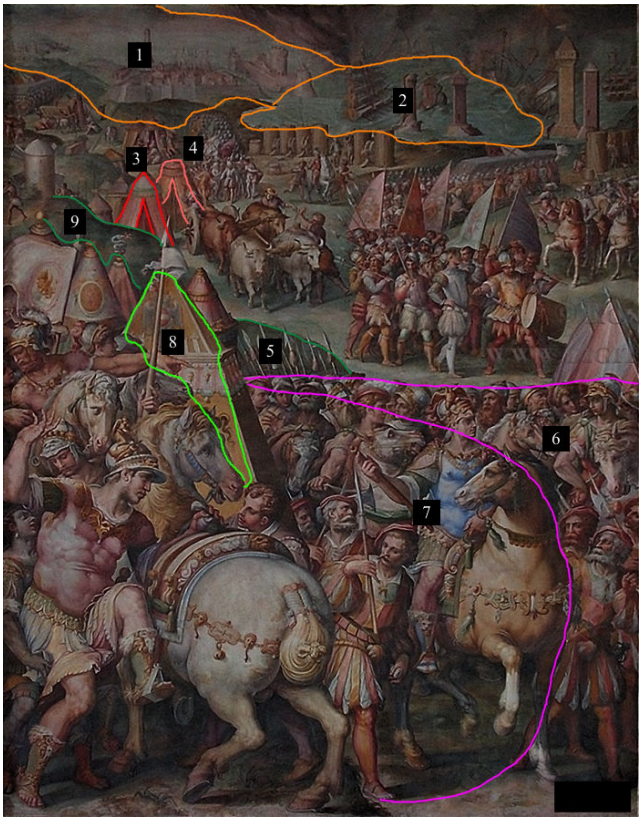

Figure 4: 1-Right lobe; 2-Left lobe; 3-Common hepatic artery; 4-Portal vein; 5-Gallbladder; 6-duodenum; 7-Lumen of duodenum; 8-The bile; 9-Common hepatic duct.

A topography similar to that of the liver and its neighboring anatomical elements is described in Leonardo's anatomical sketch (Figure 5).

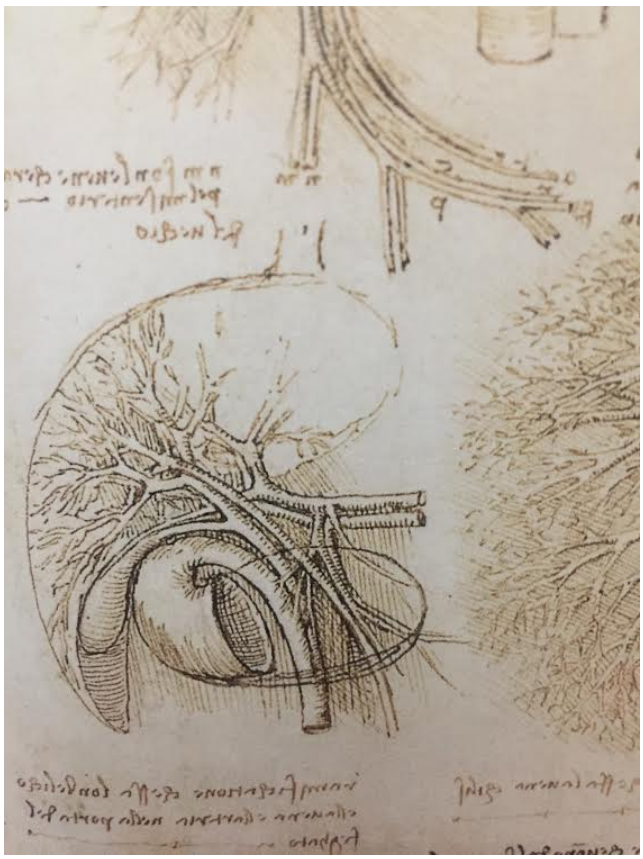

Figure 5: Anatomical sketch of Leonardo da Vinci-RL 19051v; K/P 60v.

In figure 1(III), episode the sequence is between the details that correspond to the trachea, primary bronchi, secondary bronchi, left lung, rib, and intercostal muscles (Figure 6).

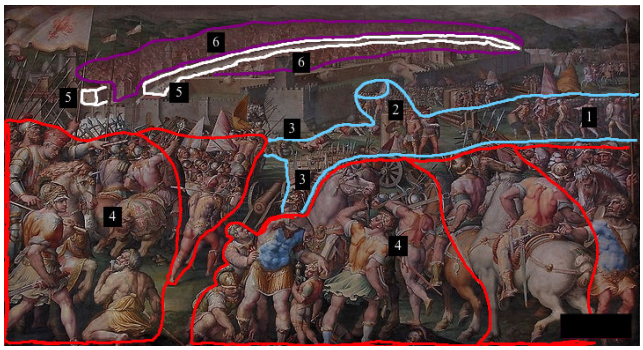

Figure 6: 1-Trachea; 2-Primary bronchi; 3-Secondary bronchi; 4-Left lung; 5-Rib; 6-Intercostal muscles.

The description bronchi and its branches are identical to the sketch by Leonardo (Figure 7).

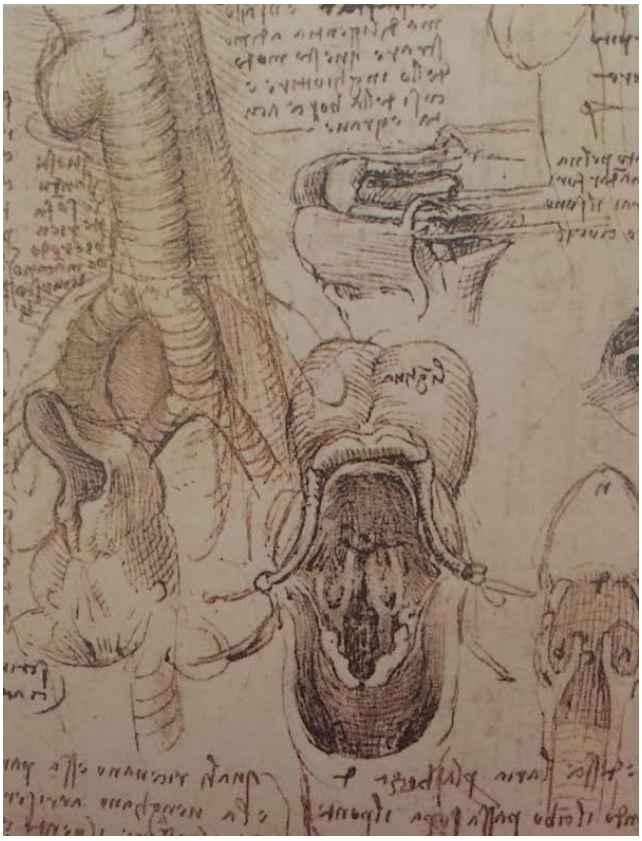

Figure 7: Anatomical sketch of Leonardo da Vinci-RL19002r; K/P 134r.

In Figure 1(IV), episode the sequence is between the details that correspond to the vagina, ovary, fallopian tube, fundus, lumen of uterus, cervical canal, spermatozoid, glans of penis, and corpus cavernosum (Figure 8).

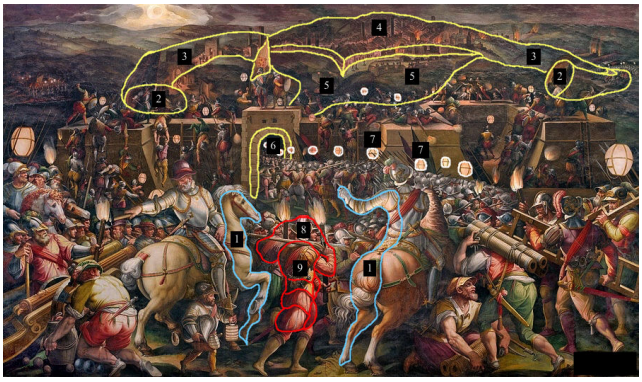

Figure 8: 1-Vagina; 2-Ovary; 3-Fallopian tube; 4-Fundus; 5-Lumen of uterus; 6-Cervical canal; 7-Spermatozoid; 8-Glans of penis; 9-Corpus cavernosum.

This episode depicts a coition that is very similar to the anatomical sketch of da Vinci (Figure 9). In both cases, the process of ejaculation is described in addition to the female and male genitals.

In Figure 1(V), episode the sequence is between the details that correspond to the ovary, fallopian tube, caudal eminence, umbilical cord, placenta, cervical canal, mesencephalon (midbrain) and spinal cord of the embryos (Figure 10).

Figure 9: Anatomical sketch of Leonardo da Vinci9097v; K/P 35r.

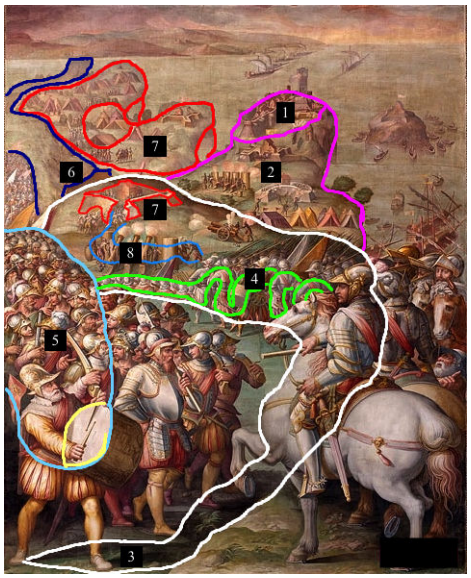

Figure 10: 1-Ovary; 2-Fallopian tube; 3-Caudal eminence; 4-Umbilical cord; 5-Placenta; 6- Cervical canal; 7-Mesencephalon (sagittal view of the midbrain); 8-spinal cord of the embryos.

The embryo and related anatomical elements Leonardo has described in a sketch (Figure 11).

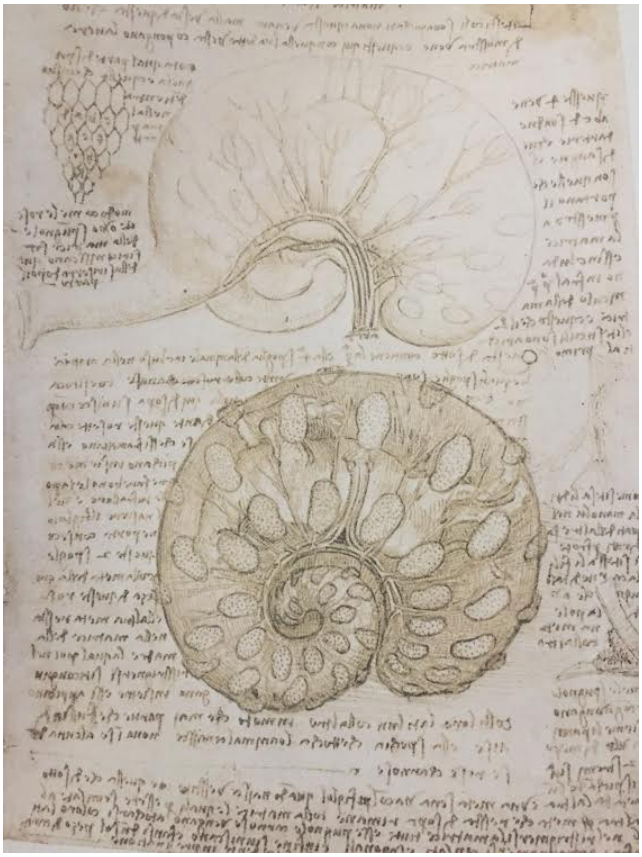

Figure 11: Anatomical sketch of Leonardo da Vinci19055r; K/P 52r.

In Figure 1(VI), episode the sequence is between the details that correspond to the appendix, cecum, ascending colon, hepatic flexure, transverse colon, colon lumen, kidney, bladder, and ureter (Figure 12).

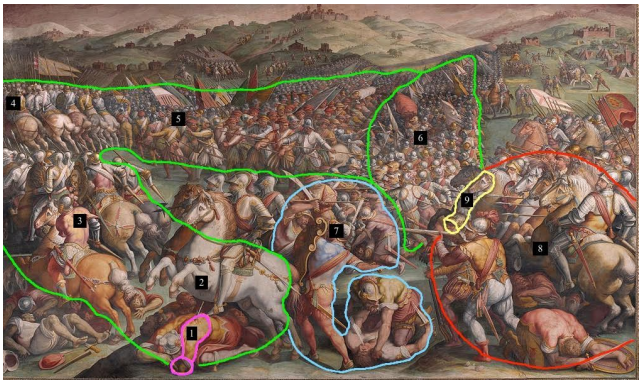

Figure 12: 1-Appendix; 2-Cecum; 3-Ascending colon; 4-Hepatic flexure; 5-Transverse colon; 6-Colon lumen; 7-Kidney; 8-Bladder; 9-Ureter.

Da Vinci's anatomy clearly describes the bladder, and the ureter (Figure 13).

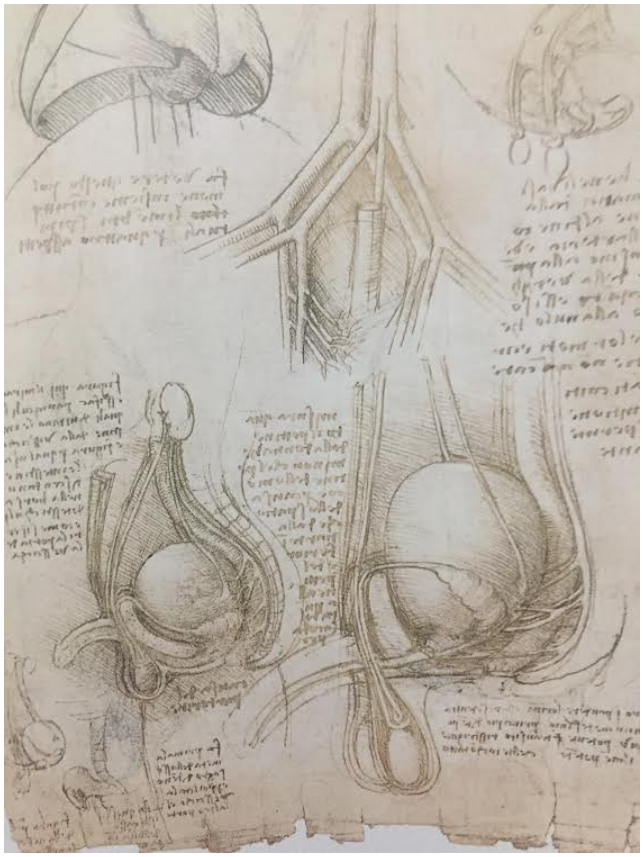

Figure 13: Anatomical sketch of Leonardo da Vinci-RL 19098v; K/P 106v.

Discussion

Giorgio Vasari (1511-1574), was Italian painter, architect, and writer. Contemporary scholars regard Vasari more highly as an architect than as a painter.

We could not find information about Vasari's anatomy, but he had access and possibility of fundamental study of the human anatomy and use this knowledge in the art like Leonardo da Vinci. It is likely that Vasari used the anatomical studies of Leonardo da Vinci.

Giorgio Vasari worshiped Leonardo's talent as expressed in the words: "In the normal course of events many men and women are born with various remarkable qualities and talents; but occasionally, in a way that transcends nature, a single person is marvellously endowed by heaven with beauty, grace, and talent in such abundance that he leaves other men far behind, all hisactions seem inspired, and indeed everything he does clearly comes from Godrather than from human art" – Giorgio Vasari : "Live of the Painters, Sculptors and Architects " (1568). It may be behind Giorgio Vasari s mural Battle of Marciano in Val di Chiana, 1563.

We could not find information about Vasari s anatomy, but he had access and possibility of fundamental study of the human anatomy and use this knowledge in the art like Leonardo da Vinci. It is likely that Vasari used the anatomical studies of Leonardo da Vinci. Da Vinci' s most penetrating anatomical studies began in 1506 with his

dissection of 100-year-old men and around 30 corpses were dissected by him until 1513 [1].

In this period anatomical knowledge in Europe was largely based on manuscripts from classical Greece and medieval Italy, the dissection of animals, and the intermittent dissection of the condemned criminal [2,3]. While criminals hung for murder were available for anatomical dissection, even by the 17th century there were not enough eligible hangings to accommodate the demand for bodies [4]. Despite the fact that cadaver dissection was illegal in this epoch, physicians still managed to deepen knowledge in human anatomy.

Descriptions of methods of the cadaver preservation were used in Europe for almost 1200 years, started at about AD 500. They have been preserved in the writing of physicians (Brenner) [5].

Conclusion

The anatomical interpretation of the frescos of Giorgio Vasari reveals the similarity between this painting and Leonardo's anatomy. Therefore, one might think that one of the sources of inspiration for Vasari to create "The Battle of Marciano" was Leonardo's anatomy.

If our hypothesis is close to the truth, then some questions arise: why did Vasari draw secretly anatomical elements? Did the author want to hint at this?

Acknowledgment

Materials have not been previously published and submitted elsewhere for publication and will not be sent to another journal until a decision is made by Journal of Morphology and Anatomy. The study does not include animal experiments.

Informed consent

Informed consent was obtained from corresponding author.

Author contributions

Corresponding author Grigol Keshelava contributed to the study conception and design. Material preparation, data collection and analysis by corresponding author.

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