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## Ancient Greco-Roman Views of the Testicle in Celsus and Beyond

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### ABSTRACT

The subject of this discussion is one of the tiniest parts of the male body: the testicle. What did the ancient Greeks and Romans make of it? How was its vascular system described? Did they grasp its role in the reproduction process and its place in the body in the same way as we do today? What consequences would an ancient male have expected if it was taken away?

These are questions raised by two sections in the work of the Latin medical writer Celsus, passages that play a crucial part in the ancient history of castration.

### Introduction

Any historian investigating castration in ancient Greece and Rome will eventually arrive at two passages in *De Medicina*, the work of first-century AD Roman author Celsus.<sup>1</sup> These passages are valuable for the history of castration, as they seem to be the earliest surviving Greek and Roman sources that show us, explicitly, some medical motives for castration.

In passage 6, 18, 6B, Celsus tells us of the necessity to remove a testicle if, as the result of a blow, the testicle no longer receives food. In 7, 22, 5 he advises this operation if the enlargement of a vein has developed between the inner testicular tunic and the testicle and its cord, one of the reasons being that the testicle no longer contributes anything to the process of procreation.

In this article I shall discuss three questions raised by these passages:

- How much did Celsus know about the blood-vessels of the testicle? He clearly refers to these in the second passage, but also in 6, 18, 6B when he is talking about the feeding of the testicle - blood-vessels were thought of as the suppliers of nutrition to the body.<sup>2</sup>

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<sup>1</sup> For the purposes of this article, castration is hereby defined as the elimination of one or both testicles, and not necessarily the penis. I thank Manfred Horstmanshoff for his valuable recommendations.

<sup>2</sup> See, for instance, Hippocrates, *De natura hominis* 11 (ed. Littré vi 60). For Celsus cf. *De medicina* 8, 1, 1: 'Remains the part related to the bones'. [...] First then there is the skull, [...]. The bones are hard

- What exactly could he have had in mind when thinking of the contribution of the testicle to which he refers in passage 7, 22, 5?
- What did he know about the side-effects of castration?

### Vascular system of the testicle

To answer the first question I need to present a brief survey of how Celsus' predecessors described the place of the testicle in the vascular system.<sup>3</sup>

In the oldest vascular theory that we know of, the testicles were directly connected to two main blood vessels coming down from the head.<sup>4</sup>

In the Hippocratic tract *De natura ossium* we find all veins branching out from one single, circular vein, situated – again - around the head. We also find a vessel, in connection with the spine, which sends out roots into the testicles, in the form of a close network of thin, rigid branches. This network sounds very like the complex which today we call 'plexus pampiniformis'. Next, we read that the 'genital' has veins growing through it, and that in males one vessel, between testicle and penis, is coiled round the testicles; a blood vessel, apparently, containing most of the 'generative matter'.<sup>5</sup>

Aristotle, on the other hand, saw a vein called the '*aorta*' and another, called the 'big vein', running straight from the heart to the testicles. A third vessel from the testicle to the penis initially contained blood-like moisture, but further on it contained white liquid - semen we may presume.<sup>6</sup> Therefore, what we now see as a 'seminal duct' separated from the vascular system, according to Aristotle was part of the blood-vessel system, as it was in the Hippocratic *De natura ossium*.

Celsus never tells us explicitly where to find the starting-point of the blood-vessels connected to the testicle. He does, however, clearly describe a pair of veins and arteries on each testicle coming down from the groin along with a sinew which in

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on the outside, but the parts inside where they are interconnected are softer; and between these run those large veins of which it may be believed that they supply the nutrition to these latter parts.'

<sup>3</sup> For a fuller account of the ancient Greek views of the vascular system please consult Duminil 1983; Harris 1973.

<sup>4</sup> Syennesis ad Aristotle, *Historia animalium* 3, 2: 511b20-30.

<sup>5</sup> Hippocrates, *De natura ossium* 11-2; 14-5; 17 (ed. Littré ix 182;186-190;192). For the meaning of *dia tou aidioiu* (through the 'genital') in chapter 15 see Harris 1973: 67-8. He remarks that the bent or twisted veins suggest the testicle rather than the penis. In line with Harris' suggestion, I think that the word *aidoion* should probably be made to include both.

<sup>6</sup> Aristotle, *Historia animalium* 3, 1: 510a12-35; cf. *ib.* 1, 17: 496a4-27; 3, 3: 513a15-b7; 3, 4: 514a29-515a5; *De generatione animalium* 2, 2: 735a29-736a23.

modern terms is most probably to be identified as the spermatic cord.<sup>7</sup> He further describes a complex of veins on the scrotum which could – in modern terms again – be identified as scrotal veins and '*plexus pampiniformis*'.<sup>8</sup>

One of the arteries must be what we now call the '*arteria testicularis*'; the second artery is most probably to be identified as the artery accompanying the seminal duct that transports semen to the penis. One of the veins must be the '*vena testicularis*'. Celsus does not explicitly mention the seminal duct, therefore we have to reckon with the possibility that for him the second vein functioned as such. Some decades after Celsus, Rufus of Ephesus writes that a third hollow vessel, through which the sperm was carried away from the testicle, was neither an artery, nor a vein. This suggests that others before Rufus may very well still have thought of this seminal passage as a vein.<sup>9</sup>

### Functions of the testicle

Before reconstructing the views of Celsus, we must look again at what other ancient theorists understood about the functions of the testicles.

None of the ancient Greeks or Romans seems to have realised that it is the testicle that plays the lead role in the creation of the male hormone that we now call testosterone. When it comes to the role of the testicle in the production of the male seed, however, things are a bit more complicated. Some accorded a principal function to the testicle here; others did not.

In the oldest ideas about seed formation that we know of, seed was made out of marrow, coming down from the head.<sup>10</sup>

In later views, seed production was part of the process of food digestion. According to the author of the Hippocratic treatises *De genitura*, and *De morbis* 4, for instance, the seed came from the whole of the body, be it still, mostly, from the head. It was formed, above all, from the juices in the body, of which he says there were four species: blood, bile, water and phlegm (slime). These 'humours', as they are usually called in modern studies, were innate, but had to be supplemented during life. This is why they had to be extracted from the food and drink in the belly. After this first step in the digestive process, the blood passed through the heart, the bile through the

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<sup>7</sup> Celsus, *De medicina* 7, 18, 1 (cf. 7, 22, 5).

<sup>8</sup> Celsus, *De medicina* 7, 18, 9-10 (cf. 7, 18, 8; 7, 19, 1-3; 7, 22, 1-5). Such a network was already described in Hippocrates, *De natura ossium* 14 (ed. Littré ix 186-88).

<sup>9</sup> Rufus, *De satyriasmis et gonorrhoea* 9-10 (ed. Daremberg and Ruelle 67-8).

<sup>10</sup> For a full account of ancient Greek views of the role of the testicle in seed formation please consult Jouanna 1992; Lesky 1950.

liver, the water through the spleen, the phlegm through the head.<sup>11</sup> In the process, the testicle is awarded merely a modest function as passage for the seed.

Aristotle, in his turn, made the relationship between seed-production and the process of food digestion quite explicit. According to him, the food was – by way of cooking in the belly – converted into a fluid which was then transported to the heart and turned into blood, only. Part of this blood was converted into seed. The testicle, again, had no role in this production at all.<sup>12</sup>

Herophilus subscribed to the Aristotelian view that seed was made out of blood. For him, however, the testicle functioned as a minor production place of semen.<sup>13</sup>

Between Herophilus and Galen some advancement seems to have been achieved. Rufus the Ephesian tells us that he *thinks* that the generative source of the seed lies *in* the testicles.<sup>14</sup> But a treatise more or less contemporary to Rufus still claims that the seed was perfected in the vessels that come after the testicles.<sup>15</sup>

In line with prevailing medical opinion, it can be assumed that Celsus thought that the nature of semen was (concocted) blood. Even though he does not explicitly choose between the various digestion theories at his disposal, he nevertheless describes the concept of digestion systematically in the Aristotelian way as ‘concoction’.<sup>16</sup> He also sees the nutrition of the body as coming from the blood-vessels.<sup>17</sup> Furthermore, in passage 4, 28 Celsus implies an Aristotle-like connection between the food eaten by a man and the production of his seed.

The question of what Celsus thought about the role of the testicle in this seed formation process, however, remains. A reasonable suggestion is that he regarded the testicle as a (minor) producer of seed. Only slightly later than Celsus, Rufus believed this, as, later still, did Galen.<sup>18</sup> The idea seems to have stuck, certainly in the minds of the most important medical thinkers. Most importantly, however,

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<sup>11</sup> Hippocrates, *De genitura* 1-3 and 11 (ed. Littré vii 470-4 and 484); *De morbis* 4, 32-3 (ed. Littré vii 542-4).

<sup>12</sup> Aristotle, *Historia animalium* 3, 19: 521a17-8; *De somno et vigilia* 3: 456a32-b6; *De partibus animalium* 2, 3: 650a2-b13; 3, 4: 665b31-666a8 and 666b13-26 (cf. 3, 5: 667b13-9; *De generatione animalium* 1, 18: 724b23-8 and 725a3-27 (cf. 1, 19: 726b1-5); 2, 2: 735b37-736a18; 4, 8: 776b3-15; 5, 7: 787b19-31; 1, 4: 717a12-b2; 5, 7: 788a7-11).

<sup>13</sup> Vindicianus (?), *Fragmentum Bruxellense de semine* 1 (ed. Wellmann 208; Galen, *De semine* 1, 15 and 1, 16 (ed. Kühn iv 565 and 582).

<sup>14</sup> Rufus, *De satyriasmō et gonorrhoea* 12 (ed. Daremberg and Ruelle 69). My italics.

<sup>15</sup> Rufus, [*Anatomē*] 56-8 (ed. Daremberg and Ruelle 182).

<sup>16</sup> Celsus, *De medicina* 1, Prooemium 20-21 (digestion theories); 1, 2; 1, 4; 1, 6 and passim (concoction).

<sup>17</sup> Celsus, *De medicina* 8, 1, 1, cited above.

<sup>18</sup> Galen’s ideas about reproduction are found in his works *De semine* and *De usu partium*.

Herophilus, whom Celsus appears to follow in any case as far as the nature of the semen was concerned, did so, too.

### Physical consequences of castration

At least some of the Greek medical writers predating Celsus were well aware of the physical consequences of castration.<sup>19</sup> As such, in order to assess what Celsus may have known about these consequences, we can make use again of what they wrote.

Certain Hippocratic authors thought eunuchs incapable of the active, penetrating role in sexual intercourse. Nor did they expect the eunuch's body-hair to grow as it would in 'regular' adolescent males.<sup>20</sup>

From the 4<sup>th</sup> century BC, it was the femininity of the eunuch that was stressed above all. Aristotle pictured the testicles as loom weights: these kept the male body tense and masculine.<sup>21</sup>

The eunuch was just like a woman, as far as voice, hair, strength, adiposity, and breast-development went, but also in that he lacked fertile seed; in his sexual preferences; because he was cold and full of phlegm;<sup>22</sup> and in his immunity to certain diseases, as noted by Celsus himself.<sup>23</sup>

In lay literature we also find this shroud of femininity around the castrated person.<sup>24</sup>

On the other hand, being castrated as a boy was thought to preserve one's beauty and to excite lust. If one was willing to serve as a sex-object, either for men or for women, castration could actually be an asset.<sup>25</sup> Some young Alexandrians lusting after other men are reported to have castrated themselves out of free will for such reasons.<sup>26</sup>

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<sup>19</sup> To find further reading on ancient Greek and Roman castration practices and views of the consequences of castration please consult König 2005.

<sup>20</sup> Hippocrates, *De genitura* 2 (ed. Littré vii 472); *De natura pueri* 20 (ed. Littré vii 508-10).

<sup>21</sup> Aristotle, *De generatione animalium* 1, 4: 717a17-717b2; 5, 7: 787b20-32 and 788a7-11; cf. *De partibus animalium* 3, 4: 666b14-5.

<sup>22</sup> Aristotle, *De generatione animalium* 5, 3: 783b32-784a11; cf. 1, 20: 729a28-30 and 4, 5: 773b35-774a3; [*Problemata physica*] 4, 26 : 879a36-880a5; Galen, *De semine* 1, 15 (ed. Kühn iv 570-1); Alexander of Aphrodisias, [*Problemata physica*] 1, 7-8 (cf. 5-6).

<sup>23</sup> Celsus, *De medicina* 4, 31, 1.

<sup>24</sup> See e.g. Ovid, *Fasti* 4, 183; *Historia Augusta* 18, 23, 7.

<sup>25</sup> Quintilian, 5, 12, 19; Juvenalis 6, 366-8.

<sup>26</sup> Philo Judaeus, *De specialibus legibus* 37-42.

In late Antiquity, castration was thought to help some Christians in preserving their chastity, as is shown by the example of church father Origen.<sup>27</sup> Last but not least, castration could turn out to be beneficial for slaves, because at the Roman emperors' courts eunuch-slaves and -freedmen played important roles in politics.<sup>28</sup> This was a phenomenon that already existed at (and was probably copied from) the courts of the Hellenistic dynasties.

What Celsus knew or did not know of these consequences we can only guess. However, as he must have scrutinised the work of many of his predecessors for his medical books, he will surely have read what these men wrote about eunuchism.<sup>29</sup> Further, since in Celsus' day, the eunuch-slave was a familiar character in Roman society, he will also have observed it with his own eyes.

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<sup>27</sup> Eusebius, *Historia ecclesiastica* 6, 8.

<sup>28</sup> *Suda*, s.v. Σπάδων (ed. Adler iv 414): Again, some people had themselves castrated for this reason.

<sup>29</sup> *De medicina* includes an historical introduction to Greek medicine and a discussion of origins of dietetics, pharmacology and surgery. A good introduction to Celsus is Schulze 2001.

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\*\*\* The entry "Eunuch" contains an omission. Where it says: "Der E. sei vor bestimmten Erkrankungen geschützt (z.B. Cael. Aur. Chron. 5, 2, 29) wegen seiner angeblichen → Impotenz u. weil er keinen fruchtbaren → Samen besitze", please read:  
"Der E. sei vor bestimmten Erkrankungen geschützt, vor den auch die Frau geschützt sei (z.B.: Cael. Aur. Chron. 5, 2, 29); weiter werde er mit der Frau auf eine Linie gestellt wegen seiner angeblichen → Impotenz u. weil er keinen fruchtbaren → Samen besitze".