

From Terror to Treatment: a History of Human Castration

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Introduction: Castration is any action, surgical or chemical, by which an individual loses use of the gonads, most commonly referring to loss of the testicles. Reference to elective castration has been, according to Diodorus, as old as the human record itself, first being practiced in pharaonic Egypt. Castration has been practiced as a means to produce eunuchs, a punitive measure in military and secular courts, and a source of trophy-taking in warfare. The role of castration in the control of advanced and metastatic prostate cancer became a well recognized standard of care in the mid-20th century earning Nobel Prizes for its pioneers. Our aim was to better understand the history of human castration and its transformation from an instrument of terror to a standard and sometimes life-saving urological treatment.

Sources and Methods: A literature review on human castration was performed through Medline, PubMed, the Gutenberg Project, and Google Scholar searching words "castration", "eunuch", "orchiectomy" and "androgen deprivation". We accessed the public archives of the British Museum (London) and digital classical libraries as cited. Reports were collected to create a timeline.

Results: First reports of human castration date back to the 21st century (BCE) in the ancient city of Lagash, Sumeria when used for the creation of court eunuchs. Castration figured prominently in most ancient cultures from myth to jurisprudence. The god Uranus was castrated by his son, Cronus (Saturn), with an adamantine sickle, throwing the severed gonads into the sea. There is at least conjectural evidence of castration on medical, criminal, and even volitional grounds from pharaonic and classical history through medieval and modern times. Primitive medical observations recognized the different phenotypes of pre-pubertal and post-pubertal eunuchs especially on the voice which may account for the popularity of some castrati in the history of choral music. Castration was a well-established procedure in the domestication of animals for millennia but it was only in 1941 that Charles Huggins and others first demonstrated the effects of bilateral orchiectomy in the control of prostate cancer. Medical castration, now with special androgen receptor inhibitors, continues to be a mainstay in the management of metastatic and hormone refractory prostate cancer.

Conclusions: Medical or surgical castration plays an important role in the modern management of advanced prostate cancer. Castration has existed in human cultures for thousands of years, although its true prevalence is unknown, accounted for in the folklore and sparse records typical of ancient times.

Keywords: castration, orchiectomy, androgen deprivation

Castration is any action, surgical or chemical, by which an individual loses use of the gonads, particularly of the testicles for males (1). Surgical castration is bilateral orchiectomy and chemical castration uses pharmaceutical drugs to deactivate the testes. Androgen deprivation therapy (ADT) is the mainstay for the treatment of advanced prostate cancer. The use of ADT and orchiectomy, or medical and surgical castration, respectively, result in loss of endocrine testicular function (2,3). Human surgical castration, however, is a practice known from at least Sumerian

times from 4,000 BCE and had militaristic, punitive, and religious roles (4-6). Little is known, however, about the timeline of how castration evolved from its role in primitive jurisprudence to modern oncologic guidelines. We aimed to elucidate the history and roles of surgical castration in early human societies and draw a time line from its earliest descriptions to the seminal Nobel-prize winning work by Charles Huggins in the 1940s.

SOURCES

A literature review on human castration was performed

through Medline, PubMed, Google Scholar searching words "castration", "eunuch", "orchiectomy", and "androgen deprivation". We accessed original and classical texts through Project Gutenberg (www.gutenberg.org), BNF Gallica (bnf.gallica.fr), and online public domain digital repositories as cited. All reports were collected and a timeline of the history of human castration was performed. Public domain images were accessed for illustrations as cited.

RESULTS

Greek Mythology

Hesiod (fl 750-650 BCE) depicted in his *Theogony* the origins of the universe as an allegory of intergenerational warfare. "For Uranus (Heaven) hated all the children that were born of him and Gaia (Earth). He used to hide them all away in a secret place of Earth as soon as each was born to prevent them seeing the light of day". (7) Gaia pleaded with these many children to "punish the vile outrage of (their) father." Only Chronos accepted the challenge and, waiting in ambush, castrated his father with an adamant sickle, tossing the testicles into the sea, from the foam of which arose Aphrodite. (Figure

1) While Hesiod's tales may not reflect contemporary practices, castration as a form of military retaliation and the generation of slaves may have been well recognized (4,8). Herodotus (c 484-425 BCE) wrote of young Hermotime who was castrated by a certain Panione, a trader in eunuchs, and who eventually dispatched the boy to a Sardinian king. Years later, having risen in court favor, Hermotime, now on a Greek mission, called upon the Panione home outside Athens: "Oh wickedest of all men" Hermotime said of his former captor. "What insult have you received, you or those of your house, or of my relatives, for having reduced me to this miserable state in which, from a man that I was, I am now neither man nor woman?" (9) Hermotime then proceeded to have Panione and his four sons castrated which was the subject of scholarly debate for the limits of vigilante jurisprudence

Mesopotamia

Several historical writers provide conflicting accounts of the supposed origin of human castration. Vossius believed that the procedure evolved from the Persian village of Spada from which is derived the Latin root

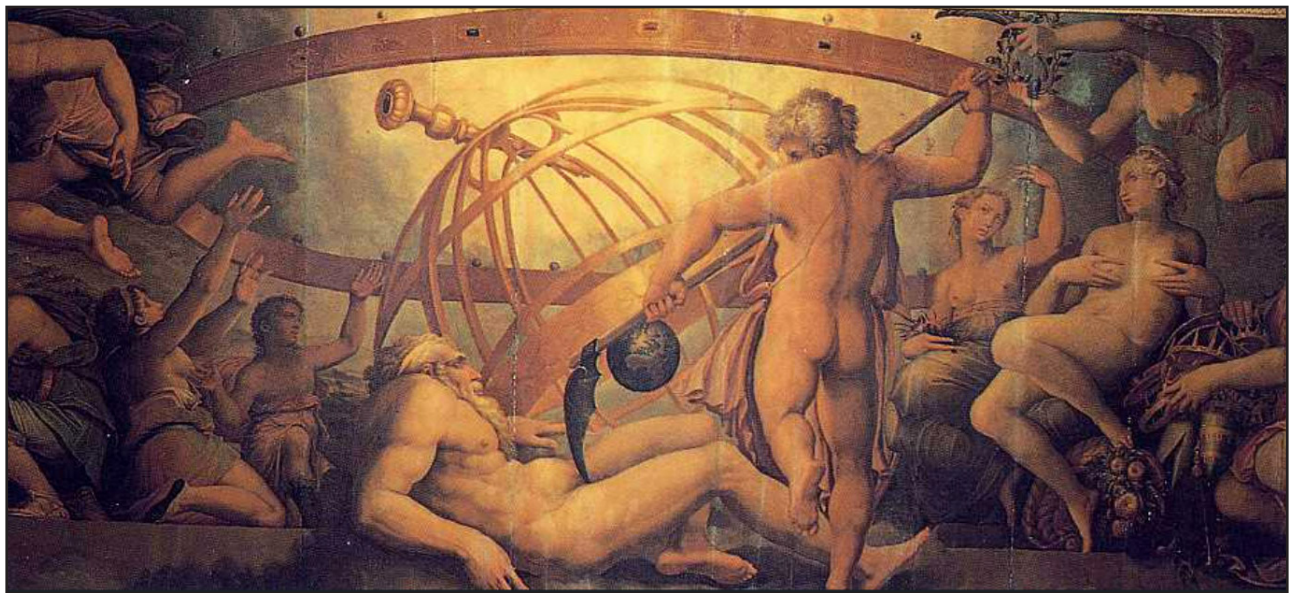


Figure 1. *Mutilasi Uranus* (Castration of Uranus) by Cronus (Saturn), at the behest of Gaia, Uranus' wife and Chronus' mother. By Giorgio Vasari (1511-1574) and Christofor Gherardi (1508-1566), from the ceiling of the *Sala degli Elementi* (Room of the Elements), 2nd floor, Palazzo Vecchio, Florence, Italy (Public Domain)

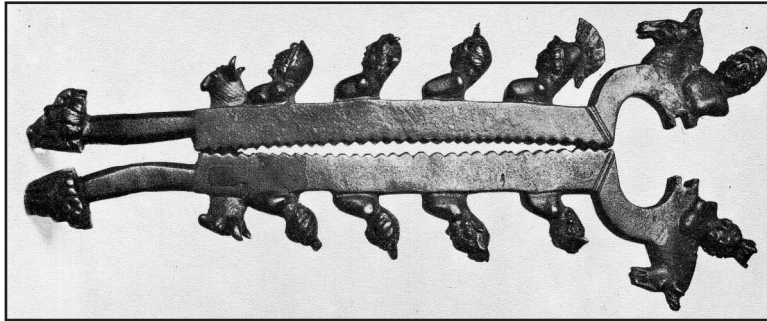


Figure 2. Roman bronze castration clamp, 3rd century AD, believed to have been used in the cult of Cybele, found in the Thames at London Bridge, London, 1840. "The outer edges of the clamp are decorated with the busts of ten divinities: Aty's (?), Mars, (Tuesday), Diana (Monday), Apollo (Sunday), Saturn (Saturday). Cybele, Mercury (Wednesday), Jupiter (Thursday), Venus (Friday), Ceres." From *British Art and the Mediterranean* by Franz Saxl and Rudolph Wittkower, Oxford University Press, 1948. (Public Domain)

'spado' (10). Diodorus, a Sicilian scholar of antiquity, claims that the Assyrian Queen Semiramis was known to subject her post-coital lovers to castration and thus may be the first regent in history to do so (10). Other scholars claim that eunuchs were created for use in the court in the ancient city of Lagash, near modern Telloh between the Tigris and Euphrates rivers in Southeast Iraq (4). Nebuchadnezzar (650-562 BCE), the Persian general who ravaged Jerusalem, was said to have castrated certain prisoners of war and conscripted them into his own service (11). Between 395 AD – 1453, during the Byzantine Empire, castration was considered as a punishment and due to bleeding or infection, was seen largely as a death sentence (8,12). In Arabian countries, castration was initially prohibited by Muhammad, but was eventually used to obtain a faithful group of harem guardians since at least 750 AD, underlying the etymology of the word 'eunuch' (*eunoukos*, Gk: bedroom guard).(4,5)

Pharaonic Egypt

Evidence of castration in pharaonic Egyptian civilian and court procedures is scant owing to the difficulties in interpreting hieroglyphic literature on the subject (13). Castration as a mean of war trophies was apparently undertaken by Ramses III in Medinet-Habu although the famous Merneptah Stele depicts these acts on the war dead and not on the creation of eunuchs (14). Diodoro himself found little evidence of eunuchs in pharaonic courtly life. The 18th century Egyptologist Jonkheere believed that the unique depictions of certain figures in hieroglyphic steles depicted the adipose, skeletal, and muscular changes of castration

as evidence for eunuchs. Ippolito Rosellini (1800-1843) concluded that the use of a yellow-brown color of some court figures, being a combination of the red ocre used in males and yellow in females, indicated the eunuch (15). One difficulty in figuring the role of the castration in Egypt is the ambiguity of the words for eunuch sometimes translated from the Egyptian word 'saris'. Both eunuch, derived from 'bed watcher' (see above) and 'saris', an Akkadian word for 'he who is at the head', are used interchangeably in some ancient texts (16). In Old Testament Genesis, Putiphar, known in many texts as the "eunuch of Pharaoh", was said to have brought Joseph to Egypt (17). The long-held belief that Putiphar was, in fact, castrated may have contributed to the legend of Putiphar's wife, Zuleikha, apparently bereft of consanguinity, to try and seduce Joseph himself. The latter, barely escaping Zuleikha's clutches, left behind his cloak, evidence which landed Joseph in pharaoh's jail and become the subject of many medieval and Renaissance artists.(Figure 2)

Asia

Evidence of human castration in Asia date back to the 11th century BCE. Eunuchs were said to have served as palace gate keepers and served the emperor during the Zhou Dynasty (18). Court eunuchs held great respect, and sometimes great power. The eunuch Zhao Gao (c 258-207BCE) was said to have usurped power after the death of the First Emperor of Qin (18). One of the most important court eunuchs may be Cai Lin (cc 50-62 – 121 AD) in the Eastern Han dynasty who, as legend has it, was inspired to invent paper by the observing the nest building of paper wasps.(19)



Figure 3. “Henry Hohenstaufen torturing the young William III of Sicily, son of Tancred”, circa 1410. In: *Des cas des nobles hommes et femmes* (Ms. fr. 190/2) by Giovanni Boccaccio (1313-1375). Fol. 169(r). Bibliothèque de Genève, Paris (Public Domain)

Religious Self-Gilding

There is some evidence that self-castration or ‘gilding’, may have played a role in some religious sects. Followers of the goddess Cibebe were said to castrate themselves during rituals in which they ‘gifted’ the resected gonads to her.(8)(Figure 2) In the New Testament book of Matthew, Jesus was said to state of eunuchs that “there are those who are this way from their mother’s womb, some who have been made eunuchs by men, and those who have made themselves eunuchs for the Kingdom of Heaven.”(20) In one of the more infamous cases of Biblical literalism, a certain 2nd century Alexandrian Christian, Origen (c 185-c 253), underwent self-gilding, because, according to Ancillon, “he resolved to execute to the letter the perfection which he persuaded himself that Jesus had proposed in those words of the Gospel”.(21) He was condemned by contemporaries, and self-gilding was prohibited by the General Council of Nicaea, but not before inspiring another sect, lead by a certain Valesiens, to require self-gilding as the price of admission.(22) Despite anti-castration canonical law, modern-era religious mutilation continued. The Skoptsy sect in present day

Russia was led by believers, primarily a one Kondratiy Ivanovich Selivanov (d 1832), who felt that the ‘purity’ of men and women could only be accomplished after the removal of the sources of sexual lust: the testicles in men and the breasts in women.(23) Selivanov and his followers were subjected to multiple arrests, exilement, and captivity, yet the Skoptsy sect lived on, even after his death, up until the 1970s.

Secular Self-Gilding

Tales of self-castration are found in medieval and Renaissance literature. The King of Syria commanded a certain Combabus, a learned scholar in his court, to accompany Queen Stratonice on a long, nearly three year journey. So fearful of being the subject of the King’s suspicions and jealousies, he reasoned that he would either lose his life or his sex. “As soon as he was at home...after having sighed deeply he cut off the secret parts that we do not name and put them well embalmed in a box which he sealed; When it was time to leave (with the Queen), he gave the box to the King in the presence of a large number of people, and asked him to keep it for him until his return. He told him that



Figure 4. "Abelard and his Pupil, Heloise", by Edmund B Leighton (1852-1922), 1882. a Victoria rendering of the medieval couple in a pensive moment. Peter Abelard's castration, ordered by her vengeful uncle Fulbert, was chronicled by Abelard (1079-1142) himself, who went on to be an important scholar of the 12th century.(Public Domain)

he had put something there which he valued more than gold and silver and which was as dear to him as his life. The King put his stamp on this box & gave it to the Master of his wardrobe to keep."(24) Alanna Skuse writes of the 17th century surgeon James Yonge being called to stemp the bleeding of a 20 year old victim of self-gilding or, as Yonge described it, 'Origen Secundus'. (25) Yonge's patient claimed religious motives but the surgeon suspected a somewhat poorly thought out and violent exercise of self-repudiation perhaps in response to a recent sexual rejection.

Reprisals and Jurisprudence

There is no doubt that castration as a form of secular or military reprisal figured prominently in tales of dread and terror (Figure 3). Roman law castrating adulterers was codified hundred of years before and lived on the Gaelic laws of the 1st-5th centuries AD. "It may also be said that it was founded on that law of equity, which says

that the penalty must be inflicted on that member of the body who has been the instrument, or the accomplice of the crime".(26) Castration as a form of retribution may be as equally severe and few cases exceeded the literary reach of the fable of Abelard and Heloise. Heloise was one of the most well-educated women of her time and, it was said, a great beauty. She fell in love with Abelard and the two conspired to marry (Figure 4). Heloise's Uncle Fulbert strongly disapproved and, suspecting his niece's apparent impregnation, forwent civil jurisprudence and ordered Abelard's castration during a notorious home invasion. Abelard himself recovered and wrote of the evening. "Violently incensed, they laid a plot against me, and one night while I all unsuspecting was asleep in a secret room in my lodgings, they broke in with the help of one of my servants whom they had bribed. There they had vengeance on me with a most cruel and most shameful punishment, such as astounded the whole world; for they cut off those parts of my body



Figure 5. Portrait of Farinelli, the stage name of Carlo Maria Michelangelo Nicola Broschi (1705-1782), a celebrated castrato of the 18th century and who was named chamber musician for the court of King Philip V of Spain.

with which I had done that which was the cause of their sorrow".(27) Abelard convinced Heloise to join a nunnery and he himself a monk, becoming a prolific scholar of religious works. Abelard's attackers themselves were apprehended, castrated and blinded, reminiscent of the contemporary fate of a young William III (c 1186-c1198). The Hohenstaufen emperor Henry VI (1165-1197) claimed the throne of Sicily, exiling the then 8 year old regent and his mother to remote Swabia. At some point, Henry VI opted to change William's worldly form, and had the now 12-year old castrated and blinded but was able to nevertheless survive a few years longer in that miserable state.(28) Even in mid-18th century England, castration was considered as a reputable, and formidable, form of corporeal punishment. Skuse writes that "In 1731, for example, it was suggested that thieves be punished by gelding rather than branding or hanging. The reasons advanced for this proposition were various: the punishment would be a deterrent; it would prevent the influence of 'lewd women'; it would eradicate criminal bloodlines; and it would produce men potentially useful as singers or caretakers for noble wives and daughters."(29)

The Castrati.

Not all castrations, apparently, were based on violence and reprisals. From the late 16th century, castration was carried out in Italy to preserve the unbroken male voice into adult life (30). The initial stimulus for the production of castrati came from the Sistine Chapel in Vatican. In 1737, The most famous castrato singer in history Farinelli (1705-1782) was named chamber musician by the Spanish King Philip V and 'criado familiar', or servant to the royal family (Figure 5). These singers, or castrati, underwent pre-pubertal castration, before the subject could either provide consent or demonstrate true musical ability. Still, the practice of maintaining pure or 'white' voices in adult men remained a custom in some church choirs even up until 1922 with the death of the world's last known Italian castrato Alessandro Moreschi (1858-1922), whose singing can still be heard on YouTube (31).

Therapeutic

Hippocrates once observed that "eunuchs were never bald (and)...they have a more complete brain than other men to whom Venus causes them to lose a good part

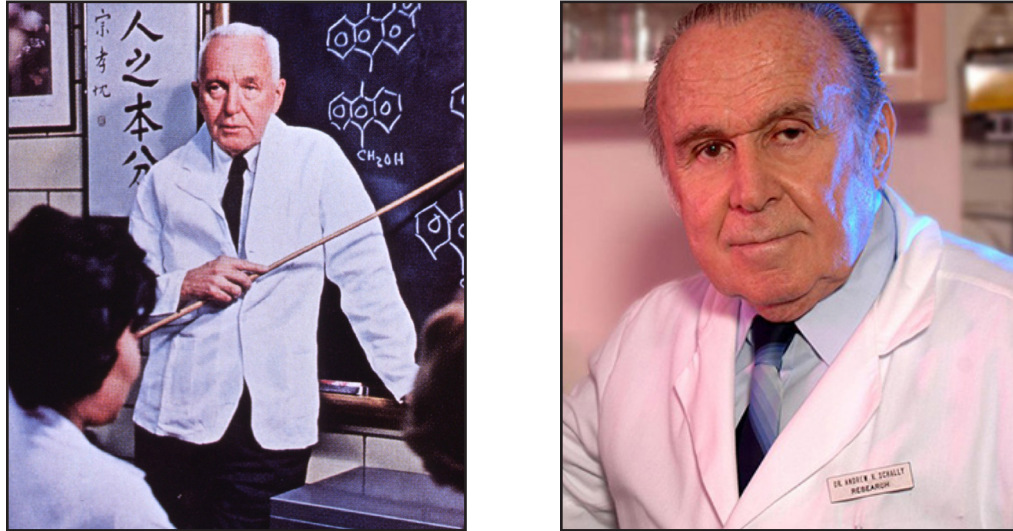


Figure 6. Nobel Prize winning pioneers of androgen-based therapy of prostate cancer. **(Left)** Charles B. Huggins who first identified the effect of medical castration on advanced prostate cancer (From Modern Medicine). **(Right)** Andrew V Schally (1926-) who discovered the hypothalamic regulation of the pituitary gland, work which led to the treatment of prostate cancer via GnRH manipulation. (Vantage Point blog, November 15, 2021. Accessed December 1, 2022. https://www.va.gov/HISTORY/Features/Dr_Schally_009.asp)

of" (32). Pliny (AD c 25- c79), it is said, thought that eunuchs also evaded gout (33). John Hunter (1728-1793), in his pivotal works of the 18th century, made the observation, however, that "the prostate gland, Cowper's glands, and the glands along the urethra, are in the (normal) male large and pulpy, secreting a considerable quantity of slimy mucus... and is only thrown out when in vigour for copulation : while in the castrated animal these are small, flabby, tough, and ligamentous, and have little secretion. From this account there appears to be an essential difference between the parts connected with generation of the (intact) male, and those which remain in one that has been castrated, more especially if that operation had been performed while the animal was young." (34)

The relationship between testicular function and prostatic enlargement was not unknown to later surgeons. In fact, J William White, of the University of Pennsylvania, in his 1893 paper to the American Surgical Association, described the successes of relieving symptoms of advanced prostatic hypertrophy after "double castration" as an alternative to suprapubic prostatectomy, which had a quoted mortality rate of 20%. (35).

Charles B Huggins of the University of Chicago addressed the somewhat conflicting observations of White and others study castration and its effects on BPH through histologic analyses (Figure 6). He obtained prostatic sections before and 3 months after castration in 3 subjects with prostatic enlargement and urinary retention, subject #2 of whom had prostatic carcinoma and pelvic metastases.

While there was some effect of castration on prostatic stroma and hyperplastic glands in patients #1-3, epithelial cells demonstrated marked atrophy and, in subject #2 with prostate cancer, "there (was) no evidence of malignancy in (the) sections." (36) Huggins hypothesized that "the prostatic epithelium, (was) at least...under control of the testes" and, building upon observations by Robinson and coworkers, Huggins embarked on a biochemical study assessing the affect of castration on serum alkaline phosphatase levels in patients with prostate cancer and skeletal metastases. "At least with respect to serum phosphatases," Huggins wrote, "disseminated carcinoma of the prostate is inhibited by eliminating androgens, through castration or neutralization of their activity by estrogen injection." (37)

Huggins later reflected upon the early days of his observations noting that "we became certain we had something important. I was excited, nervous, happy. That night I walked home one mile and I had to sit down two or three times, my heart was pounding so. I thought: This will benefit man forever. A thousand years from now, people will be taking this treatment of mine." (38)" Huggins was nominated for the Nobel prize in 1950 and 1951 and was successfully awarded in 1966, the 2nd urologist, after Werner Forssman in 1956, to be so awarded, but the 1st award for work in the field of Urology.(39)

In 1944, treatment with diethylstilbestrol (DES) was described as the first method of reversible castration (40). Although more expensive, medical castration is currently the standard considering its hypothetical reversible effect

and the psychological trauma related to surgery (40). Medical castration, however, like its surgical analogue, also became abused by institutional powers. In 1952, the pioneering computer scientist Alan Turing accepted chemical castration with DES instead of imprisonment when convicted of homosexuality (40). In 1966, psychologist John Money infamously employed medroxyprogesterone acetate as a treatment for pedophilic urges (40-41). Medical castration by means of medroxyprogesterone acetate or cyproterone acetate is also said to be used for convicted rapist or sex offenders in some countries (41). Castration via reduced GNRH expression, now the mainstay of long-term androgen deprivation, was heralded into use by Andrew Victor Schally (Figure 6). Schally and Roger Guillemin showed in the 1970s that advanced prostate cancer patients treated with daily doses of LHRH agonists experienced a 75% decrease in serum testosterone levels and a marked reduction in cancer-associated bone pain. Schally and Guillemin shared the 1977 Nobel prize in Medicine (41-43).

CONCLUSIONS:

Castration for a variety of punitive, religious, and quasi-medical reasons has been documented since at least the 21st century BCE. While surgical castration is now an uncommon but still utilized method in the control of advanced prostate cancer, the achievement of the castrated state is now a standard of care in treatment of metastatic disease. The timeline of castration shows that the procedure has emerged over 5000 years from primordial tales of myth and brutal, primitive jurisprudence, to a potentially life-saving modality in the treatment of prostate cancer.

Timeline of Human Castration: from Terror to Treatment

- 2100 BCE. First documented castration in the Sumerian city of Lagash
- 1100 BCE Eunuchs serve as palace gate keepers, Zhou Dynasty
- 258-207 BCE Zhao Gao usurps throne after death of Emperor Qin
- 200-100 BCE Possible court role of eunuchs in Pharaonic Egypt
- 100 AD Activity of the Cybele cult
- 200 AD Self-castration of Origen; the rise of the Valesien sect
- 395-1453 AD Castration codified punishment in Byzantine law
- 750 AD Castration used to produce harem guards
- 1119 AD Castration of Abelard
- 16th century Italy: rise of the *castrati*
- 1707 Definitive historical text on eunuchs by Charles Ancillon, Paris
- 1737 *Castrato* Farinelli named court musician for Philip V of Spain
- 1750s-1970s activity of the Russian *Skopcy* sect
- 1890s use of double castration in the management of BPH
- 1922 Death of Moreschi, last known Italian operatic castrato
- 1941 Huggins et al. induce castration to control prostate cancer
- 1952 Alan Turing undergoes medical castration with DES
- 1966 'John Money' Era: medroxyprogesterone to treat pedophilia
- 1970s Schally et al. identify hypogonadal control of pituitary LH

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