

REMBRANDT VAN RIJN AND CATARACT SURGERY IN 17TH CENTURY AMSTERDAM¹

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Few artists have been more closely associated with medicine from an artistic as well as professional standpoint than Rembrandt van Rijn. His group portrait, *The Anatomy Lesson of Doctor Nicolaas Tulp*, the commission that was instrumental in bringing the then 26 year old painter to Amsterdam and which established his early reputation in the capital city, is among his best known works, and is, more than any other work of art symbolic of the traditional elements of medical education. Rembrandt's medical interests went far beyond group portraits of patrons in the Amsterdam Surgeon's Guild. He was a keen observer of the human condition, casting a critical eye on the elderly, the disfigured and the sick around him. Of particular interest to those ophthalmologically inclined is the small oil, *Tobias Healing His Father's Blindness*, painted in 1632. In this painting graphic medical detail is incorporated into a serene, dreamlike composition eloquently expressing many powerful themes. To the physician it offers a rare glimpse of how cataract was treated in early seventeenth century Amsterdam.

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The timing of Rembrandt's arrival in Amsterdam was auspicious. No artist could have hoped for an environment more conducive to art than Amsterdam in the 1630's, and from the outset, Rembrandt had the good fortune to be patronized and befriended by some of the prime movers of Amsterdam's renaissance – men such as the physician and statesman Nicolaas Tulp and the extraordinarily versatile scientist and writer Constantijn Huygens. Rembrandt was well equipped to take advantage of such men being not only supremely gifted but also acutely receptive to the intellectual and artistic influences around him.

Many of Rembrandt's drawings, etchings and paintings in which the blind are portrayed have as their thematic basis one of his favorite Old Testament narratives, the apochryphal Book of Tobit (a notable exception is the horrific *Blinding of Sampson by the Philistines* which like *Tobias Healing His Father's Blindness* was painted in 1636). The Book of Tobit does not appear in the King James version of the Bible as it was suppressed by the Church of England, but during the Reformation was authorized by the Synod of Dordrecht.

The story of Tobit proved to be a fertile ground for Rembrandt's imagination as five paintings and over fifty etchings and drawings dealing with various aspects of the tale are extant. It is a story in which faith and piety are rewarded by divine intervention in the form of angel Raphael. The story contains many themes, the return of the Prodigal, the guardian angel and the restoration of sight.

The elderly Tobit having been blinded years before after "*sparrows muted warmth into mine eyes*" (MAYOR, 1978) while nobly trying to bury the body of a murdered Jew, dispatched his son Tobias to collect an old debt in the city of Rages. On this perilous journey the son was joined by another young traveler, Azarias, who was in fact, the angel Raphael in disguise. During a brief rest stop along the river Tigris a fish was caught, and upon the suggestion of Azarias, the gall and liver were carefully removed and saved. The two then travelled on and later stopped at the home of Tobit's second cousin Sara, who had had the deep misfortune of having her first seven husbands killed on the nuptial by a malicious spirit. Tobias fell in love with her but was understandably unsettled about the prospect of marrying her. With Raphael's help the evil spell was broken using the magical quality of the fish entrails. Sara, Tobias and Azarias then returned to Nineveh and the waiting Tobit. There the angel revealed his true identity and instructed Tobias to anoint his father's eyes with the gall "*and being pricked therewith, he shall rub, and the whiteness shall fall away, and he shall see thee*" (MAYOR, 1978).

In depicting the dramatic cure of Tobit's blindness Rembrandt departed from the narrative and chose, instead, to graphically depict in considerable detail the surgical treatment of cataract. When it came to interpretation of biblical themes Rembrandt took the Bible quite literally, and he most likely used the Lutheran translation of the Bible in which Tobit's affliction is described as a "star" or cata-

ract (GREEFF, 1907). This may well have been an erroneous interpretation as the original source for the Apocrypha is written in Greek, and therein the cause of blindness is given as bilateral leucomata. Over the centuries there has been much speculation as to what it really was that blinded the hapless Tobit, possibly pterygia, trachoma or corneal scars, all somehow the result of being in the wrong place at the wrong time as a guano-laden sparrow circled overhead.

For Rembrandt the cause of blindness was cataract, and it is easy to speculate that the young painter, habitually careful to thoroughly research his subject matter, then set out to learn more about the state of the art in treatment of this affliction. Rembrandt's medical thoroughness is evident in the *Anatomy Lesson of Doctor Nicolaas Tulp* where the corpse of Aris Kindt is surrounded by texts, the large open tome at its feet the *De Fabrica* of Adreaen van der Spieghel, a so-called *imitatio Vesalii*, published in 1627 and based upon the classic work of Vesalius, *De Humani Corporis Fabrica Libri Septem* (HECKSCHER, 1907). It is possible that Rembrandt himself may have owned some of those medical works, but it is more likely that his sources for anatomic and surgical information were his acquaintances in the Surgeon's Guild.

By getting to know Nicolaas Tulp, Rembrandt immediately found himself, at the age of 26, among the upper crust of Amsterdam's medical, political and intellectual circles. A young painter newly arrived in the capital city could not have done better than befriend and paint the portrait of this distinguished burgher. The large number of commissions Rembrandt received after the *Anatomy Lesson* was completed underscores his almost overnight success. Tulp was truly a renaissance man in a city undergoing its own renaissance. Although only 39 years of age at the time he was immortalized by Rembrandt, Tulp was already one of Amsterdam's most distinguished citizens. As a clinician he had no contemporary equal among his 60 or so colleagues. His classic collection of clinical histories, the *Observationes Medicae* first published in 1641, encompasses a broad range of medical and surgical subject matter (TULP, 1641). As an anatomist Tulp was the first to describe the *vasa lactea* and the *ileocecal valve*. He was Praelector of the Amsterdam Surgeons' Guild from 1628 to 1653 and was instrumental in establishing the city's first anatomical theater in 1639. He was also the "*Vesalius redivivus*", an heir to the anatomical legacy of Vesalius, being the student of Peter Pauw who himself was a disciple of Vesalius at Padua.

Tulp's interests outside medicine included membership in the select *Muiderkring*, the foremost literary salon of its day.² He was an active politician, four times the mayor of Amsterdam, and he acted as overseer to many civic, philanthropic and educational institutions. It is not hard to understand that a man with

² Prominent members of the *Muiderkring* included Constantijn Huygens, Caspar van Baerle (one of Holland's greatest literary figures and a patient of Tulp) and the poet Jacob Cats.

such varied and deep interests as Tulp would be sympathetically inclined to the young, highly talented artist. In turn, for Rembrandt Tulp must have been a goldmine both as a source of publicity and future commissions and as a source of medical and scientific information.

As to by what means Rembrandt was able to gather the information needed to accurately depict a couching procedure in *Tobias Healing His Father's Blindness* little is known. Cataract surgery as practiced in 17th century Amsterdam was work left to the general surgeons, who were still very much influenced both directly and indirectly by the medieval works of Benvenutus Grassus passed on in the writings of Guy de Chauliac (1300–1368). Grassus theorized that the cataract was, in fact, the result of foreign humors which upon entering the eye coagulated and caused the clinically visible opacity.³ The works of Amboise Paré (1510–1590) which included detailed descriptions of the indications for and techniques of cataract surgery were known to the Amsterdam surgical community as was the *Augendienst* of George Bartisch (1535–1606) who, although lacking any kind of formal medical training wrote this first medical text on the diseases of the eye (BARTISCH, 1583). Carefully described with ornate illustrations is the instrumentation and technique of couching.

Rembrandt most certainly had access to the works of Paré, Bartisch and Pieter van Foreest (1522–1597) known in the Lowlands as the “Batavian Hippocrates”. Van Foreest wrote extensively on a variety of medical subjects and included diseases of the eye in his *Observationes et Curationes Medicae* (cf. VAN FOREEST, 1587–1610). Another source available to Rembrandt were the collected works and translations of Carel Baten, a Flemish surgeon who practiced in Dordrecht until his death in 1618. BATEN's *Handboek der Chirurgijns* was published in 1594 and subsequent editions were printed for nearly a century. Also popular was Baten's translation of JACQUES GUILLEMEAU's treatise on the diseases of the eye, *Tracktaet van alle de Ghebreken der Oogen*.

Rembrandt was not one to be satisfied with clinical descriptions of cataract and couching procedures, and in all likelihood sought first hand experience before he undertook his composition. The many extant etchings and drawings of Tobias operating on the eyes of his father, some depicting an operation on the right eye, others an operation on the left, attest to Rembrandt's familiarity with his sub-

³ That the cataract was actually lenticular in origin was not established until ANTOINE MAITRE-JAN (1650–1730) in 1691, as part of a post-mortem examination, dissected the eye of a patient he had couched earlier. The initial work of MAITRE-JAN was confirmed and amplified in the *Traité de la Cataract et di Glaucome* by MICHEL BRISSEAU (1676–1743) who by correlating anatomic study with pathologic material demonstrated that the cataract was an opacity of the lens and that it was the lens that was displaced after a couching procedure.



Fig. 1: "Tobias Healing His Father's Blindness", by Rembrandt van Rijn (Staatsgalerie Stuttgart, F.R.G.)



Fig. 2: Frontpiece "Observationes Medico-Chirurgicæ" by Job van Meekeren (Yale University School of Medicine Library)

ject.⁴ GREEFF (1907) suggested in his monograph, *Rembrandts Darstellungen der Tobiasheilung*, that a young general surgeon, Job Jansz. van Meekeren, might very well have been the one who gave Rembrandt the demonstration of cataract surgery that he needed to make his painting accurate.

Van Meekeren was five years Rembrandt's junior and passed his final medical examinations in 1635 after studying under Tulp in Amsterdam. The young surgeon, only a year out of his formal training would have been quite flattered to have the artist who had painted his professor's ceremonial anatomy lesson express an interest in his work. Van Meekeren was truly a general surgeon treating a broad variety of surgical problems. Little of Van Meekeren's life is known⁵ although the rich variety of his surgical practice is revealed in his *Observationes Medico-Chirurgicae* (fig. 2) published posthumously (cf. VAN MEEKEREN, 1682). He was the first to report a bone graft and one of the first to describe pathologic fractures caused by syphilis. The early work on bone grafting was apparently short-lived because of pressure from the church which objected to transplantation. He studied the hepatic circulation in an effort to understand the development of liver abscesses. His ophthalmologic writings include detailed descriptions of the anterior segment, the cause and treatment of cataract, and the management of orbital masses. Van Meekeren's conception of cataracts seems to be quite consistent with the theories of Benvenutus Grassus.

In the section entitled "*De Processu Oculi Ciliari*", van Meekeren counsels a young nobleman as to the nature of his cataract, underscoring his points with a schematic diagram of the eye (fig. 3). Van Meekeren writes:⁶

"In response to the question of what can cause blindness in a young man of noble birth, I answer, a cataract occupying the inner part of the eye can do this; but if it is not complete and in a position pushed back against the crystalline humor, it can leave a free passage in the area of the major angle allowing some vision to persist.

External injury such as a blow or fall can allow the entry of foreign into the aqueous humor located in the front of the eye between the uvea and the crystalline lens which is suspended from the ciliary processes. With time, the foreign humor within the eye hardens and assumes the appearance of a membrane.

⁴ Rembrandt continued to be interested in this part of the Apocrypha for many years. Sketches of Tobias operating on his father's eyes dated 1650 and 1651 are in the collections of the Albertina in Vienna and the Nationalmuseum in Stockholm respectively.

⁵ Van Meekeren, as a member of the Surgeons' Guild, appears several times in the municipal archives of the city of Amsterdam. On October 23, 1654 the directorship of the Surgeons' Guild met at Tulp's townhouse on the Keizersgracht to discuss the election of a new Praelector. Tulp had just been elected mayor of Amsterdam and had to give up his leadership in the medical society. In addition to van Meekeren and Tulp, Cornelius Kerchem, Jacob Block, Isaac de Min, Matthijs Evertsz and Isaac Barrevelt were among the physicians and surgeons attending. As "proefmeester" van Meekeren was apparently in the running to succeed Tulp, but it was Joan Deyman who was elected. Rembrandt painted his other extant medical group portrait, *The Anatomy Lesson of Doctor Joan Deyman* in 1656. A fragment of the painting, which was partially destroyed by fire, hangs in the Rijksmuseum in Amsterdam.

⁶ Author's translation.

... so, if one desires to clear the lens with the help of a needle, he will find the membrane adhering tightly, and he will experience difficulty in removing it. To our understanding, the origin and maturation of the cataract are the result of vital spirits ...

Therapy, which involves removal of the cataract, allows the free passage of essences including those related to vision. A surgical result is achieved when a needle is inserted through the conjunctiva and through cornea into the anterior chamber where the cataract is adherent. The needle detaches the cataract so that it can be pushed to the inferior part of the eye where, after a certain period of time, it is consumed by intraocular essences.

The most convenient time to perform cataract surgery is in the Spring or Fall. I surmise that April is the best time to operate, for if the cataract is left alone for a longer period of time it will become hard and very difficult to displace with the needle." (VAN MEEKEREN, 1682).

Such was the state of anatomical and surgical ophthalmology, in the words of Rembrandt's contemporary, Job van Meekeren. Whether it was the young van Meekeren or another Amsterdam surgeon who gave Rembrandt the living example he needed to compose his small masterpiece, we are, nonetheless, left with a timeless symbol of medical practice that eloquently captures the beauty and quiet nobility of treating the visually impaired. In simple surroundings, with the elderly Tobit carefully positioned before an open window, Tobias gently touches his patient, his left hand retracting the upper lid, while his right delicately manipulates the needle that will restore his father's sight.

Summary

Rembrandt's painting "Tobias healing his father's blindness" offers a rare glimpse of how cataract was treated in the early 17th century in Amsterdam. The story of Tobit must have strongly influenced Rembrandt's mind, as five paintings and more than fifty etchings and drawings were made. It appears that Drs. N. Tulp and J.J. van Meekeren were the contemporary Amsterdam surgeons through whom Rembrandt became acquainted with cataract surgery.

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HEINEMANN, M.H. et PINELL-STAEHLE, H.C. — Rembrandt van Rijn et la chirurgie de la cataracte à Amsterdam dans le XVIIe Siècle

Resumé

Le tableau de Rembrandt «Tobias guérissant la cécité de son père», donne une idée de la façon dont la cataracte était traitée à Amsterdam au début du XVIIe Siècle. Cette histoire de Tobit doit avoir fortement impressionné Rembrandt, puisqu'il lui a consacré 5 peintures et plus de 50 gravures et dessins. Il est probable que Rembrandt ait reçu des notions chirurgicales sur l'opération de la cataracte par les célèbres médecins d'Amsterdam, les Drs. Nicolaas Tulp et Job Janson van Meekeren.

HEINEMANN, M.H. und PINELL-STAEHLE, H.C. — Rembrandt van Rijn und die Kataraktchirurgie im Amsterdam des 17. Jahrhunderts

Zusammenfassung

Rembrandts Gemälde „Tobias heilt die Blindheit seines Vaters“ vermittelt einen guten Eindruck über die Verfahren der Kataraktchirurgie im 17. Jahrhundert in Amsterdam. Die Geschichte des Tobit hat anscheinend Rembrandt sehr beschäftigt. Er fertigte nicht weniger als 5 Gemälde und über 50 Stiche und Zeichnungen über diesen Stoff an. Seine Kenntnisse über die Kataraktchirurgie seiner Zeit verdankt Rembrandt allem Anschein nach den beiden Amsterdamer Chirurgen Dr. Nicolaas Tulp und Dr. Job Janson van Meekeren.

**HEINEMANN, M.H. y PINELL-STAEHLE, H.C. = Rembrandt van Rijn
y la cirugía de la catarata en el Amsterdam del siglo XVII.**

Resumen

El cuadro de Rembrandt "Tobías curando la ceguera de su padre", da una idea de la manera que se trataba la catarata en Amsterdam a principios del siglo XVII. Esta historia de Tobit debe haber impresionado grandemente a Rembrandt, puesto que le ha consagrado 5 pinturas y más de 50 grabados y dibujos.

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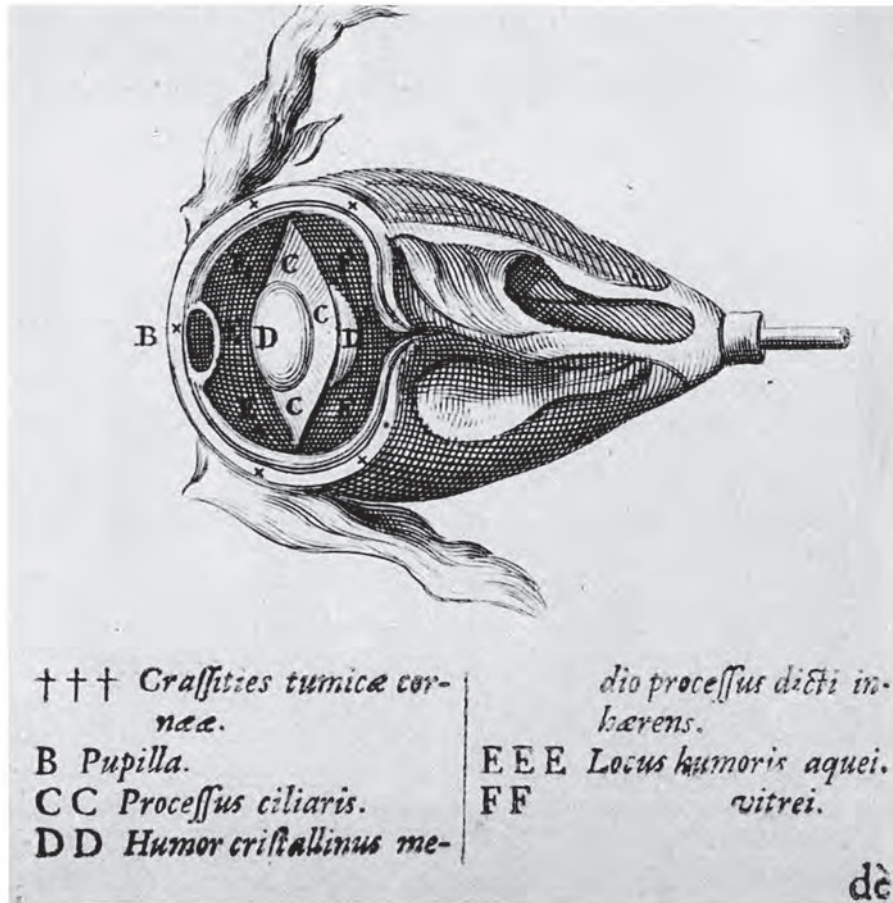


Fig. 3: Illustration from "Observationes Medico-Chirurgicae", chapter entitled "De Processu Oculi Ciliaris" by Job van Meekeren (Yale University School of Medicine Library)