

Tröhler U (2003). Cheselden's 1740 presentation of data on age-specific mortality after lithotomy.



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The name of William Cheselden is closely linked with the operation of lithotomy, an operation to remove bladder stones. When Cheselden was trying to make his way in London in the 1710s, he had used suprapubic lithotomy. Although he did eight successful (private) operations out of nine between May and October 1722, his enthusiasm for the suprapubic operation soon faded.

Cheselden's idea was to use a perineal approach. As in the suprapubic approach, he first filled the bladder with water through a catheter, then incised the bladder through the perineum. He had heard about this approach because it had been developed by Friar Jacques de Beaulieu in France in the 1690s. The medical establishment there had rejected it because, in their eyes, Friar Jacques was not a qualified lithotomist.

As with some surgical operations today, Cheselden developed the technique of lateral lithotomy gradually. He began using the new technique in August 1725, but had lost four out of ten patients by 1726, and so slightly altered his technique. He first published an account of his new results in 1732, in an 'Appendix' to the fourth edition of his book *The Anatomy of the Human Body* :

The first twenty seven patients cut this way recovered, and I believe are all living at this time: Indeed I had cut thirty one who recovered before one died, having cut four more between the 28th was cut, and the time he died; but I scorn to use any fallacious way of representing my success. Some of these being cut in the hospital, and some privately, the truth of this account might be suspected by those who do not know me. I cannot take the liberty to mention the names of private patients, therefore I will give a detail of those only which I cut this way in the hospital, where the first twenty five recovered, to the truth of everyone of which I had above twenty witnesses, and I do believe these patients are all living at this time. (Cheselden 1732, pages 342-344).

Cheselden's fame spread quickly. Indeed, it reached Paris even before he had had time to publish his results in 1730. It is worth following how his operation was introduced into the French capital that had so severely censured its principal originator, Friar Jacques, thirty years earlier.

Considering the claims and counterclaims about the results of different methods of lithotomy in the past, it is not surprising that Cheselden went to considerable trouble to assure his readers of the truthfulness of his results. He gave a list of all 46 patients operated on between March 1727 and July 1730, with their ages and dates of operation. Only two had died by 1732, even though "many" of the at least 32 children under fifteen years had had smallpox during their recovery. Cheselden continued to keep accurate records of his supra-pubic practice, for in the next edition of his *Anatomy* (1740) (reproduced here) we read:

What success I have had in my private practice I have kept no account of, because I had no intention to publish it, that not being sufficiently witnessed. Publicly in St. Thomas's Hospital I have cut two hundred and thirteen; of the first fifty, only three died; of the second fifty, three; of the third fifty, eight, and of the last sixty-three, six." (p 332). If the trend in mortality rates had increased somewhat, Cheselden believed that this was because in the later series the operation being sought by "even the most aged and most miserable cases expected to be saved by it.

Cheselden's report has been included in the *James Lind Library* because it is an early example of a recognition of the need, in trying to make fair assessments of medical treatments, to take account of the age distribution of patients receiving treatment, when age may influence treatment outcome. "But what is of most consequence to be known",

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Cheselden wrote, "is the ages of those who recovered, and those who died." ([p 333](#)) He grouped his 213 patients in 10-year age groups and reported the number of deaths for each group, thus showing the substantially lower mortality among children than in adults. I have drawn up the following table from Cheselden's figures.

Age/Years	10 or under	11-20	21-30	31-40	41-50	51-60	61-70	71-80	Total
Operated	105	62	12	10	10	7	5	2	213
Died	3	4	3	2	2	4	1	1	20

The importance of this analysis was not noticed for a long time. In spite of the fact that this passage in Cheselden's *Anatomy* was republished unaltered long after his death (for example, a 13th edition was published in 1792), crude (overall) mortality figures after lithotomy continued to be presented as a measure of the success of the operation well into the 19th century. In a dispute about the interpretation of mortality figures associated with lithotomy in the late 1820s, John Yelloly (1774-1842) drew attention to the importance of Cheselden's age-specific analysis published nearly a century previously, and further stressed that the gender of the patients and the sizes of the bladder stones should also be taken into account (Tröhler 1978; [2000](#)).

References

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