

HISTORY OF CATARACT SURGERY

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ABSTRACT

Cataract may be simply defined as denoting any opacity in the lens. Indian history is however more precise, lens has been described as a distinct structure inside the eye in Sushruta Samhita as early as 3000 years back and cataract was called LINGANASHA. The history of the evolution of the surgical relief of cataract is long and full of interest, which has been presented in this article.

From the historical point of view, a rational understanding of the nature of the diseases of the lens is of comparatively recent date. It was thought to be the essential organ of vision situated in the centre of the globe and the opacification of cataract was regarded not as lenticular but due to the accumulation and solidification of evil humours in the empty space (Locusvacous) between it and the pupil (Celsus and Galen) Greek-learning of Alexandrian school.

Cataract may be simply defined as denoting any opacity in the lens. It is most common and fortunately one of the most easily remedied causes of visual incapacity and blindness. Senile cataract may be looked

up as a normal evidence of senescence occurring to some degree in 65% of people in the sixth decade and in over 95% above 65 years of age.

Neither the morphology nor the functioning status of the lens as a structure inside the eye was precisely understood till the beginning of 16th century. In fact the concept of visual loss of the eye in old age was conceived in early history as some type of an aberrant fluid in the eye ball and the spokes of lens opacity against this concept of fluid background gave the disease, the term of cataract, a Greek word meaning a water fall. The Greek literature, however, does recognise lens as a solid mass and this ill defined concept was passed

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on to the Romans and the Arabs and continued to be so understood till about the 16th century.

It is natural that a condition so common and obvious associated with effects so dramatic upon vision, should have known as early as historical records survive. Indeed the history of cataract goes back some 3000 years and probably further.

Indian history is however more precise, lens has been described as a distinct structure inside the eye in Sushruta Samhita as early as 3000 years back and cataract called *Lingana*.

Bearing a name associated in the popular mind with the catastrophe of blindness or alternatively with the order of an operation, with a symptomatology characterised by a slowly progressive and apparently, inevitable diminution of vision at a time when physical debilities make the patient depend necessarily more and more upon reading for his happiness and having a course which no palliative treatment can appreciably alter.

Cataract presents a therapeutic problem with all the characteristics necessary to stimulate the exploitation of more or less illegitimate 'Cures'. The methods which have been advised for treatment of cataract are legion. They may be considered under two headings—treatment

designed to delay the development or cause the absorption of opacities and treatment designed to improve the nutritional and metabolic disturbances or deficiencies which may play some determining part in the opacification of the lens. There remain the provision of optical expedients to aid the patient when diminution of vision becomes embarrassing and finally the removal of the opaque lens by operative measures.

History of cataract surgery is fascinating to any ophthalmologist. The history of the evolution of the surgical relief of cataract is long and full of interest. The earliest authentic records come from ancient Hindu medicine long before the Christian Era. In this amazingly advance community, the occurrence of cataract was recognised as an opacity developing in the eye. 'Eye apple' long before the acceptance of this view in Europe in the second half of the 18th century and its treatment by *Couching* the lens was widely practised. The greatest exponent of this school was Sushruta who taught the foundation of surgery based on anatomical dissection and practised aseptic surgery (advising that the operating room be fumigated with sweet vapours and the surgeon must keep his hair and beard shaved, his nails and hands to be clean and to wear a sweet smelling dress) and apparently used some kind of inhalant/anaesthetics. In the wealth (Sushruta

Samhita) of his teaching on ocular surgery, he dealt systematically and elaborately with anatomy, physiology and pathology of the eye and he described several varieties of cataract such as reddish cataract, calcified cataract, and shapes of cataract etc., and also difference between mature and immature cataract giving an admirable account of the technique of its treatment by *Couching* and the post operative care which he successfully practised. Some specialities are in favour to consider the technique as *Pars Plana Lensectomy*. Sushruta even mentioned to operate right eye with the left hand and left eye with right hand. Imagine how precise the approach to surgery was even in those ancient days.

It would seem obvious that this extremely detailed account certainly written before the Hippocratic era, was the out come of previous knowledge and experience accumulated over a long period in the rich civilization of early Hindusthan (India).

The operation of couching or reclinacion was widely employed in India in those early times and has been continued untill our present century. Sushruta's teaching reached Alexandria during or after the Indian expedition of Alexander the great (327 B.C.).

Surgery for cataract was practised in the Alexandrian school prob-

ably as an outcome of Hindu medicine. It is interesting that Hindus practised a safer method of couching than Alexandrian Greeks and Romans. Probably this technique has passed on to Greeks who recorded its practice 300 B.C. Roman surgeon, Celsus (25 B.C.) and Galen (135 A.D.) followed up by the same technique of Sushruta. The Arabs also continued the same practice. The historical operation of Reclinacion or Depression of cataract as practised in ancient times is most safely under taken. Such an operation is now rarely performed but may occasionally be legitimate in dealing with a dislocated lens occupying the pupillary area of a cataract in an old or frail patient whose life expectancy is not sufficiently long to allow time for the development of a phacolytic uveitis, a Glaucoma or a retinal degeneration or detachment.

It was not until a century latter when the great and original French surgeon Jacques Daviel (1748-53) immortalised himself by publishing and demonstrating his technique for the extraction of cataract that modern concept of diseases of the lens and their treatment emerged.

Jacques Daviel after doing planned extracapsular cataract in 18th century, inaugurated a revolution in ophthalmic surgery. The method of lens extraction devised by J. Daviel was a lower limbal extraction and

the lens being pressed out with blunt needle. Incidence of vitreous loss was fairly frequent in those years and hence further modifications during the last two and half centuries were done.

With the development of retro bulbar injection and facial block the intracapsular technique re-emerged, the favoured technique about 1930 and development of technique of suturing the cataract section during the last 30 years has made cataract surgery a really secure surgery with very good prognosis.

The remainder of the history of

cataract apart from the evolution of the methods of its treatment, developed on a rapid increase in our knowledge. The greatest early observer was Alfred Vogt of Zurich whose accurate and painstaking observation laid the foundation of modern knowledge. Finally progress has taken the form of research on the normal and abnormal metabolism of the lens in an endeavour to elucidate the cause of the condition with the hope of eventually preventing its occurrence—immensely complex biochemical problems still largely unknown but rapidly becoming classified as the years pass.

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सारांश

लिङ्गनाश में शल्यकर्म का इतिहास

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लिङ्गनाश की परिभाषा सामान्यतया मात्र इतनी की जा सकती है कि इसमें दृष्टिमणि में अपारदर्शिता की उत्पत्ति हो जाती है। भारतीय इतिहास के अनुसार आज से लगभग 3000 वर्ष पूर्व सुश्रुत संहिता में लिङ्गनाश का वर्णन मिलता है जिसको केटरेक्ट कहा जाता है। दृष्टिमणि को अक्षि में पायी जानेवाली एक महत्वपूर्ण सुव्यक्त संरचना कहा गया है। लिङ्गनाश की शल्य चिकित्सा के विकास का इतिहास बहुत प्राचीन और रोचक है, जिसको इस लेख में प्रस्तुत किया गया है।