INTRODUCTION

HISTORICAL EVOLUTION

Among complications threatening sight in association with cataract extraction, retinal detachment is the most common (Stark et al., 1983).

The recent improvements in intraocular lens implant surgery have made cataract extraction and the intraoperative correction of aphakia a particularly safe and effective technique in comparison with the results of conventional cataract surgery without intraocular lens implantation (FDA studies on intraocular lenses, Stark, 1983).

There has been world-wide acceptance of intraocular lenses for rehabilitating aphakic patients during the past 15 years, the intraocular lenses are estimated now to be implanted in about 90% of all cataract operations performed in the United States (Stark et al., 1987). In many centers pseudophakic retinal detachment has replaced the aphakic retinal detachment, and this trend is likely to continue. Therefore retinal surgeons can expect rapid and progressive increase in the number of pseudophakic detachments referred for surgery (Hagler, 1982). The more widespread application of lens implants, however, raises two important questions:

- Has the implantation of an artifical lens increased the risk of retinal detachment?
- Does an intraocular lens jeopardize retinal reattachment in a pseudophakic eye?

However, up till now there is no evidence demonstrating that implantation of an intraocular lens does increase or decrease the incidence of a retinal detachment as compared to the same type of cataract extraction without a lens implantation.

The purpose of this work is:

- to review from the available literature a sight threatening complication associated with cataract extraction which is retinal detachment, with or without a lens implantation.

- to compare the results of retinal detachment surgey on 70 pseudophakes managed by the so called " minmal retinal detachment" procedures without cerclage and drainage of the subretinal fluid with the conventional method of detachment surgey mentioned in the literature.

Daviel, 1748; **Tadiny**, 1766; **Casaamata**, 1797; **Ridley**, 1949; **Tasman**, 1966. Aphakia is a man-made iatrogenic abnormality, a product of surgical technology.

Daviel (1748) was the first pioneer who attempted a real extraction of the human opaque lens, this dramatic innovation, which seemed an approach to perfection, since the defective part could be removed through a wound which heals with an almost invisible scar, has restored excellent visual acuity to countless thousands, but his operation achieved only half the cure of cataract, since it left the eye aphakic.

Tadiny, an itinerant Italian healer had the credit for the idea of replacing the opaque crystalline lens of the human eye with an implant. He showed Casanova in 1766 in Warsaw tiny crystalline lenses which he claimed he could insert under the cornea to replace the natural lens of the eye (Taieb, 1955; R. Max, 1978; Fechner et al., 1980).

Cassamata, an Italian ophthalmologist who lived in Dresden, was the first person to attempt the actual implantation of an artifical lens (Munchow, 1964; Ascher, 1965), they commented that Shiferli, a Swiss ophthalmologist, described in 1797 the lens implantation he had observed Cassamata doing in Leipzig. He commented on the attempt as follows : "It is known that after surgery vision is not restored to the normal condition since the lens is missing. To repair this loss, Cassamata attempted to insert a glass lens through the corneal wound into the eye. He observed, however, that this glass lens could not replace the natural lens since the glass lens immediately fell to the bottom of the eye."

Ridley (1949) announced forty years ago the new era of lens implantation. His genuine innovation made the surgical cure of cataract after more than 200 years almost complete. The original Ridley lenticulus was a PMMA biconvex lens placed in the posterior chamber as a secondary procedure after an extracapsular cataract extraction at the St. Thomas Hospital in London. Later, because of the high incidence of complications, he abondoned the use of the lens in 1960.

Baron (1952) implanted the first anterior chamber lens which was the second type used clinically and employed fixation in the anterior chamber angle. Although numerous complicatons were associated with early models of this style of lens, the author was unaware of published reports of retinal detachment in eyes with these older models of anterior chamber lenses.

Iris fixation lenses were the next type to be used, and these were the first models to be implanted in significant numbers in the United States. The Copeland modification of the Epstein lens was the first popular lens of this type (Epstein, 1959) and it was usually inserted after intracapsular cataract extraction (ICCE). The Copeland lens was later surpassed in popularity by the Binkhorst iris- supported lens, which used loops rather than solid haptics for support (Binkhorst, 1959).

Tasman (1966) published the first report of retinal detachment in seven pseudophakic eyes in which Ridley's posterior chamber lenses were implanted. Three of the seven eyes had glaucoma, the others had subluxated or dislocated lenses; one dislocated lens was adherent to the retina and another free-floating. Six eyes underwent a repair procedure, which was successful in only four eyes of the six cases. He also pointed out problems in visualization of the peripheral retina in the presence of an intraocular lens.

Initial reports of retinal detachment in eyes with either Copeland (Norton, 1977) or Binkhorst (Jungschaffer, 1972) type iris-supported lenses stressed that treatment of retinal detachment was compromised by difficulty in visualizing the peripheral retina.

Recently several authors report on retinal detachments in patients with modern intraocular lenses as will be shown in (table 3) page 23.