ARCHIVOS DE LA SOCIEDAD ESPAÑOLA DE OFTALMOLOGÍA

www.elsevier.es/oftalmologia

Review

Intraoperative floppy-iris syndrome☆

J. González Martín-Moro[a,*], *F. Muñoz Negrete*[b], *I. Lozano Escobar*[a], *Y. Fernández Miguel*[a]

[a] *Servicio de Oftalmología, Hospital del Henares, Coslada, Madrid, Spain*
[b] *Servicio de Oftalmología, Hospital Ramón y Cajal, Universidad de Alcalá de Henares, Madrid, Spain*

ARTICLE INFO

Article history:
Received 17 January 2011
Accepted 11 September 2011
Available online 11 April 2013

Keywords:
IFIS
Intraoperative-floppy iris syndrome
Tamsulosin
Cataract
Alpha-1A adrenoreceptor

ABSTRACT

Objective: Intraoperative-floppy iris syndrome (IFIS) has been recently described. It has been demonstrated that this new syndrome complicates cataract surgery. In this paper we have reviewed the syndrome, and offer practical information specially related to the origin and management of this syndrome and we offer practical information.
Material and methods: A review of the related medical literature using PubMed and Cochrane databases. Combining the search terms tamsulosin, cataract, IFIS and intraoperative floppy iris syndrome, more than 200 articles were found. Eighty-two of them were obtained and analyzed. In the remaining only the abstract could be studied.
Results: The aetiological association between IFIS and tamsulosin (and to a lesser degree between IFIS and other alpha-antagonists) is well established. Other aetiological associations are doubtful. Most of the literature is centered on cataract surgery. However, a similar syndrome has been described during trabeculectomy. A possible association between these drugs and choroidal detachments has also been described. Undoubtedly tamsulosin treatment makes cataract surgery more difficult and increases the probability of intraoperative complications. Protocols to manage the syndrome have not yet been developed. Intracameral injection of alpha-adrenergic agonists seems to be useful. However, there is no evidence of the usefulness of discontinuing the drug or using preoperative mydriatics.
Conclusion: The aetiological and clinic features of the syndrome are well established. More studies are needed to provide scientific evidence on the most appropriate way to cope with this syndrome.

Síndrome del iris flácido intraoperatorio

Palabras clave:
IFIS
Síndrome del iris flácido intraoperatorio

RESUMEN

Objetivos: Recientemente se ha descrito el síndrome del iris flácido intraoperatorio (IFIS). Este síndrome complica la cirugía de catarata. Con este trabajo pretendemos revisar el síndrome, y ofrecer información práctica, especialmente en relación con los aspectos etiológicos y terapéuticos del mismo.

☆ Please cite this article as: González Martín-Moro J, et al. Síndrome del iris flácido intraoperatorio. Arch Soc Esp Oftalmol. 2013;88:64–76.
* *Corresponding author.*
E-mail address: juliogmm@yahoo.es (J. González Martín-Moro).

2173-5794/$ – see front matter

Tamsulosina
Catarata
Receptor adrenérgico alfa1A

Material y métodos: Revisión de la literatura biomédica relacionada, utilizando las bases de datos PubMed y Cochrane. Combinando los términos tamsulosin, cataract, IFIS e intraoperative floppy iris syndrome se identifican más de 200 artículos. Ochenta y 2 pudieron ser localizados y estudiados. En los restantes se estudió el resumen.

Resultados: La asociación etiológica con la tamsulosina, y en menor medida con los restantes antagonistas de los receptores alfa, está bien establecida. Otras posibles asociaciones etiológicas son más dudosas. Aunque la mayor parte de los artículos se centran en la cirugía de catarata, también se ha documentado la aparición de un síndrome similar durante trabeculectomía, y se ha descrito la asociación de los antagonistas alfa con desprendimientos coroideos. El consumo de tamsulosina hace más difícil la cirugía de catarata y aumenta la probabilidad de que se produzcan complicaciones. La forma más adecuada de manejar el síndrome no está protocolizada. La inyección intracamerular de un agonista alfa adrenérgico mejora el comportamiento del iris. No existe evidencia científica de que suspender el fármaco o el uso de midriáticos preoperatorios resulte útil.

Conclusiones: Los aspectos etiológicos y clínicos del síndrome están bien establecidos. Se precisan estudios que aporten evidencia científica sobre la forma más adecuada de manejar este síndrome.

Introduction

In 2005, Chang and Campbell published an article describing a new syndrome which they named intraoperative floppy iris syndrome [IFIS][1] which they related to the consumption of tamsulosin. Since then, interest in this syndrome has grown and to date over two hundred articles have been published on this topic.

The significance of this new syndrome is derived from three facts. Firstly, tamsulosin is a very frequently prescribed drug (there is a clear tendency toward medical treatment for benign prostate hypertrophy). Secondly, cataract surgery is the most common surgical procedure. Thirdly, the appearance of this syndrome is an unquestionable factor which increases the difficulty of the surgery and the probability of complications. A number of articles have been published not only in the ophthalmological but also in general biomedical literature which leave no doubt at all that an important number of complications which arise during cataract surgery in recent years are attributable to the consumption of tamsulosin.[2]

While the syndrome is very well defined from the aetiological, physiopathological and clinical viewpoints, the fact remains that the most adequate management is far from being protocolized. There is no scientific evidence to support the usefulness of the withdrawal of tamsulosin or the application of presurgery mydriatics.

Historical review

Six years ago, Chang and Campbell published an article under the title *Intraoperative floppy iris syndrome associated with tamsulosin* which for the first time related this syndrome with the use of tamsulosin.[1] Until then, the situation was not systematically defined as a syndrome although many ophthalmologists were aware that in some situations the patient experienced an incomprehensible loss of pupil dilatation during surgery. In said paper, Chang and Campbell published the first series and classified the findings to categorize the entity as a syndrome. The new syndrome was defined on the basis of three criteria: poor initial midriasis, sudden loss of pupil dilatation during surgery and a tendency toward iris prolapse through the incisions. The study criteria combined in varying degrees during surgery, increasing the probability of complications.

Epidemiology

This syndrome appears in 0.5–2% of the general population but has an incidence of about 60% in patients who consumed tamsulosin at the time or had consumed it in the past.[1,3] A review published by the American and European Cataract Surgery Societies established an odds ratio (OR) of 206.5 with a confidence interval of 50.9–836.5, estimating a relative risk (RR) of 99.3 with a confidence interval of 30–327.8.[4] On very few occasions OR and RR of this magnitude have been published in biomedical literature.

Some studies considered that benign prostate hypertrophy affects half of the male population over 50 and 90% of males over 85. As regards cataracts, a prevalence of 20% is estimated for the age group between 65 and 74 years, and this prevalence is of 50% in the age group over 75. The prevalence of cataracts doubles every decade after 40 years of age[5] and there is no doubt that cataract surgery is the most frequent surgery (it is estimated that in the United States about 2,000,000 cataract surgeries are performed each year).[2] It is easy to understand that both entities go together in a very high percentage of the adult male population.

In recent years, improvements in alpha receptor antagonist drugs have brought about changes in the therapeutic approach to benign prostate hypertrophy, to the point that pharmacological treatment is more frequent nowadays than a few years back.[6,7] In addition, the increased safety of alpha 1A receptor antagonist drugs has made them the most prescribed drugs. Precisely this group of drugs has been clearly related to the appearance of IFIS. Of all the adrenergic alpha receptor blocker drugs available at present to treat obstructive prostate disease,