ARCHIVOS DE LA SOCIEDAD ESPAÑOLA DE OFTALMOLOGÍA

Original article

Usefulness of surgical complexity classification index in cataract surgery process☆

R. Salazar Méndez [a],*, M. Cuesta García [a], M.E. Llaneza Velasco [b], S. Rodríguez Villa [a], M. Cubillas Martín [a], C.M. Alonso Álvarez [c]

[a] Servicio Oftalmología, Área Gestión Clínica Servicios Médico-Quirúrgicos, Hospital Comarcal Jarrio, Coaña (Asturias), Spain
[b] Unidad Calidad, Investigación y Salud Pública, Hospital Comarcal Jarrio, Coaña (Asturias), Spain
[c] Asistencia Sanitaria y Salud Pública, Área I SESPA (Servicio de Salud del Principado Asturias), Hospital Comarcal Jarrio, Coaña (Asturias), Spain

ARTICLE INFO

ABSTRACT

Objective: To evaluate the usefulness of surgical complexity classification index (SCCI) to predict the degree of surgical difficulty in cataract surgery.

Material and methods: This retrospective study includes data collected between January 2013 and December 2014 from patients who underwent cataract extraction by phacoemulsification at our hospital. A sample size of 159 patients was obtained by simple random sampling ($p = 0.5$, 10% accuracy, 95% confidence). The main variables were: recording and value of SCCI in electronic medical record (EMR), presence of exfoliation syndrome (XFS), criteria for inclusion in surgical waiting list (SWL), and functional results. SCCI was classified into 7 categories (range: 1–4) according to predictors of technical difficulty, which was indirectly estimated in terms of surgical time (ST). All statistical analyses were performed using SPSS v15.0 statistical software.

Results: Prevalence of XFS was 18.2% (95%CI: 11.9–24.5). In terms of quality indicators in the cataract surgery process, 96.8% of patients met at least one of the criteria to be included in SWL, and 98.1% gained ≥2 Snellen lines. The SCCI was recorded in EMR of 98.1% patients, and it was grouped for study into 2 categories: high and low surgical complexity. Statistically significant differences in the distribution of ST were found depending on the assigned SCCI ($p < 0.005$) and the presence of XFS ($p < 0.005$).

Conclusions: The SCCI enables to estimate the degree of surgical complexity in terms of ST in cataract surgery, which is especially useful in those areas with high prevalence of XFS, because of the higher theoretical risk of surgical complications.

Utilidad del índice de complejidad quirúrgica en el proceso de cirugía de catarata

R E S U M E N

Palabras clave:
Catarata
Facoemulsificación
Síndrome de pseudoexfoliación
Procedimientos quirúrgicos
ambulatorios
Tiempo quirúrgico
Indicadores de calidad

Objetivo: Evaluar la utilidad del índice de complejidad quirúrgica (ICQ) como indicador de la dificultad técnica esperable en la cirugía de catarata.

Material y métodos: Estudio retrospectivo de intervenciones de catarata realizadas entre enero de 2013 y diciembre de 2014. Se realizó muestreo aleatorizado simple y se obtuvo un tamaño muestral representativo de 159 pacientes (p = 0,5, precisión 10%, seguridad 95%). Se analizó el registro y valuor del ICQ en la historia clínica electrónica (HCE), la presencia de pseudoexfoliación (PSX), el cumplimiento de criterios de inclusión en lista de espera quirúrgica (LEQ) y los resultados funcionales. Se clasificó el ICQ en 7 categorías (rango: 1–4) según factores predictivos de dificultad técnica, que se estimó de forma indirecta a través del tiempo quirúrgico (TQ). Se utilizó el programa SPSS aplicando t de Student y chi-cuadrado para la comparación de grupos.

Resultados: La prevalencia de PSX fue del 18,2% (IC 95%: 11,9–24,5). El 96,8% de los pacientes cumplía alguno de los criterios para su inclusión en LEQ y el 98,1% experimentaron una ganancia visual final ≥2 líneas, considerados ambos indicadores de calidad del proceso de catarata. El ICQ se había registrado en la HCE del 98,1% de los pacientes, y se agrupó para el estudio en 2 categorías: alta y baja complejidad quirúrgica. Se encontraron diferencias estadísticamente significativas en la distribución del TQ en función del ICQ asignado (p < 0,005) y la presencia de PSX (p < 0,005).

Conclusiones: El ICQ permite estimar la complejidad técnica de la cirugía de catarata en términos de duración de la intervención, lo que facilita la programación quirúrgica, especialmente en aquellas áreas con alta prevalencia de PSX, en las que el riesgo teórico de complicaciones es mayor.

Introduction

Good clinical practices are favoured by the standardization of procedures by means of protocols based on scientific evidence and updated regularly, in order to reduce their variability and cause of ineffectiveness or inefficiency.[1] Variations regarding surgical indication and management of cataracts are well-known[2–4] and can affect both the results and costs of the procedure.[5–7] These findings have proven the need for standardization of criteria for the inclusion in a surgical waiting list (SWL) by means of the creation of specific clinical guidelines, as well as for subsequent monitoring of its numerous indicators.

Analyses of the healthcare quality provided during the cataract surgery usually include certain common criteria, such as a decline in hospital admissions by means of major outpatient surgery (MOS) protocols, the implementation of informed consents, the non-cancellation of programmed interventions, the assessment of user satisfaction or the reduced incidence of complications.[1] With regard to the latter, having, for example, some sort of clinical classification system enabling a reduction in discrepancies between patient expectations and the surgical results achieved seems advisable. Thus, over the past few years, several authors, including Spaniards,[8] developed classification systems based on preoperative variables which allowed for predicting the result of a surgical procedure in terms of visual acuity and function.[8] However, no previous work has tried to identify those preoperative findings associated with a greater theoretical risk of intraoperative complications, that would not only jeopardize the results expected by the patient in a surgical procedure considered to be of "low risk", but also the quality of the healthcare provided, in the form of delays in the SWL, a low surgical performance or a high rate of complications, cancellations and rescheduling. An early identification of patient characteristics or aspects of the surgical intervention itself related to a greater risk of complications would enable the implementation of preventative measures to reduce their incidence (for example, assigning surgeons with greater expertise in difficult cases and avoiding the accumulation of complex cases in a same surgical field), as well as adjusting the prevalence of complications based on said predictive factors (in order to not assign worse results to a hospital only on the basis of the fact that it treated the most complex cases). Overall, this would improve the healthcare quality, which is the main goal of healthcare risk management.[9]

The surgical complexity classification index (SCCI) is a classification system capable of correlating the expected degree of technical difficulty and the estimated duration of a specific surgical procedure, taking into account several variables.[10] Its usefulness in certain surgical procedures has been proven within the past few years, including in laparoscopic cholecystectomy[10] (LC). If LC is the most common intervention carried out in general surgery services, cataract surgery represents the most frequent procedure not only