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LETTER TO THE EDITOR

Outpatient vs. inpatient Descemet's membrane endothelial keratoplasty: Changing practice patterns in a COVID-19 environment

Kératoplastie endothéliale: prise en charge ambulatoire versus hospitalisation conventionnelle: une évolution suite au Covid-19

Surgical management of patients has evolved in recent decades and led to a dramatic reduction in the length of hospital stays and even outpatient management of many surgical procedures. In France, 57.6% of all surgical procedures were performed on an outpatient basis in 2019 [1]. The shift from inpatient to outpatient care can be explained by advances in anesthesia and surgical techniques allowing for feasibility and increased patient acceptance of outpatient surgery [2]. Ophthalmology is no exception to this evolution in patient care. In the treatment of endophthalmitis, outpatient management may result in a significant cost savings [3]. Significant technical and medical progress has occurred since the first keratoplasty performed in 1905, improving visual outcomes and long-term prognosis. In the case of endothelial keratoplasty, the required postoperative positioning for air tamponade has been considered an obstacle to outpatient follow-up.

Outpatient management of Descemet's membrane endothelial keratoplasty (DMEK) was developing but became a necessity at the time of the COVID-19 crisis in order to limit possible hospital transmission of the virus. This ''forced'' evolution of care allows us to re-evaluate our current practices and should push us to evaluate the potential risks and benefits of these changes.

The goal of this study was to analyze the relative risk of early complications after DMEK between outpatients and inpatients, especially the risks of pupillary block and graft dislocation requiring rebubbling.

This was a retrospective, single-center study of consecutive patients who underwent DMEK at the Rothschild Foundation Hospital (Paris, France). Clinical data were collected from December 2019 to February 2021. The research was approved by the Rothschild Foundation Hospital review board—IRB 00012801- under study number CE_20210323_7_DGT.

Surgeries were performed by a single surgeon with the same technique for all 44 patients. However, postoperative management of the air tamponade varied among patients.

Table 1 Patients characteristics and complications.

	Inpatients $n = 22$	Outpatients $n = 22$	P value
Age (years)[a]	71 (54—89)	70 (57—85)	
Sex (women/men)	13/9	16/6	
Laterality (left/right eyes)	10/12	12/10	
Pupil block (n, %)	2 (9%)	0	NS
Rebubbling (n, %)	4 (18%)	3 (14%)	NS

[a] Expressed as median (min-max). Fisher exact test was performed. NS: not significant.

We included the last 22 consecutive patients who underwent DMEK from November 2019 to March 2020 just prior to the lockdown in France due to the Covid-19 pandemic. These 22 patients were hospitalized for one night after the surgery and were discharged the following day after ophthalmological examination. All eyes had an intraoperative full air tamponade time of 10 minutes. The air tamponade was then decreased to 80% air fill of the anterior chamber. The patients were kept in the supine position until the next morning.

We also included the first 22 patients who underwent DMEK after the lockdown and resumption of surgeries from October 2020 to April 2021. Surgeries were performed in the morning from 8 a.m. to 12 noon. Patients were treated on an outpatient basis, being discharged at approximately 6.30 p.m. after examination by the surgeon. All eyes had a full air tamponade until discharge, at which time the air tamponade was reduced. The patients were kept in the supine position until discharge. Patients living over one hour away from the hospital were provided with accommodations in a local hotel.

Patient characteristics and complications occurring after DMEK were recorded, and the data are summarized in Table 1. Rebubbling was recorded if performed in the two first weeks after the surgery.

This study was performed in the context of changes in management necessitated by the global Covid-19 crisis. Outpatients did not experience significantly more early complications after DMEK than inpatients. The patients' readily accepted outpatient care. These results are promising and suggest the possibility of outpatient management of patients undergoing DMEK.

Rebubbling rates vary greatly between surgical centers and surgeons [4]. Over one third of DMEK graft detachments require rebubbling. The objective of rebubbling is to allow quick rehabilitation without compromising visual recovery or endothelial cell density of the graft. Our rebubbling rate was not different between the two groups. Although higher than in some studies, as the same surgeon performed all the surgeries, the fact that we observed no difference between the two groups appears statistically reliable.

Larger studies with a longer follow-up are necessary, particularly to explore the impact on visual acuity and graft survival depending on whether the graft is performed as an outpatient or inpatient procedure.

Disclosure of interest

The authors declare that they have no competing interest.

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