DOI: https://doi.org/10.2298/SARH250706091B
UDC: 617.713-007.23

CASE REPORT / ПРИКАЗ БОЛЕСНИКА

Mystery corneal opacity ring

Marija Božić, Tanja Kalezić, Vesna Marić, Bojana Dačić Krnjaja

University of Belgrade, Faculty of Medicine, University Clinical Center of Serbia, University Eye Hospital, Belgrade, Serbia

SUMMARY

Introduction We present a case of an incidental finding of unusual ring-like bilateral corneal opacities in otherwise clear corneas in a person with no other ophthalmological disease except cataract. Clinical findings, laser scanning *in vivo* confocal microscopy and corneal topography findings do not correspond to any described corneal degeneration, so the aim of this presentation is to consult with fellow ophthalmologists regarding the origin and significance of the described changes.

Case outline "Mystery corneal ring" is found incidentally as a bilateral, asymptomatic, almost perfectly round in shape, white and situated adjacent to limbus. The appropriate diagnostics performed did not give an answer as to the origin of these symmetrical opacites.

Conclusion We present previously undescribed symmetrical bilateral corneal opacities, in search of an answer as to whether any of our fellow ophthalmologists have had similar cases in their practice or know what type of disorder it is.

Keywords: cornea; opacity; dystrophy

INTRODUCTION

Congenital anomalies of the cornea are changes of a wide spectrum and do not all have to lead to a decrease in visual acuity or other symptoms. Corneal findings in those cases are most often bilateral, although they can be asymmetric and are very well classified and described. However, occasionally in clinical practice we encounter a finding on the cornea that does not correspond to any entity described so far. The aim of this case report is to share our findings with a wider ophthalmological audience and to obtain the opinion of our colleagues regarding the origin of the described changes.

CASE REPORT

A 75-year-old woman presented for cataract surgery. Best corrected visual acuity (Snellen eye chart) was 0.4 in her right and 0.6 in her left eye. The corneas were otherwise normal, with single regular, ring shaped, opacification approximately 3 mm from the limbus. The epithelium overlying the hazed part of the cornea was regular. Cortical and nuclear opacities were noted in right lens. Intraocular pressures (Goldmann applanation tonometry) were 14 and 16 mmHg. Cup to disc ratio was 0.3/0.3 in both of her eyes. Central corneal thickness was 525 μm and 524 μm. Corneal sensations were normal in both eyes. Corneal opacity did not affect visual acuity.

We did laser scanning *in vivo* confocal microscopy and corneal topography that reviled sharply demarcated single corneal ring, with smooth surface, and no deposits or pigmentations, and band like condensations in corneal stroma (Figure 1 and 2).

Ethics: The patient gave written consent for this case report to be presented, and the Ethics Committee of the University Clinical Center of Serbia gave permission for the presentation (number of approval 192-22).

DISCUSSION

Similar cases of bilateral ring-shaped opacities in the cornea have been published earlier, but none of them corresponds to the case that we

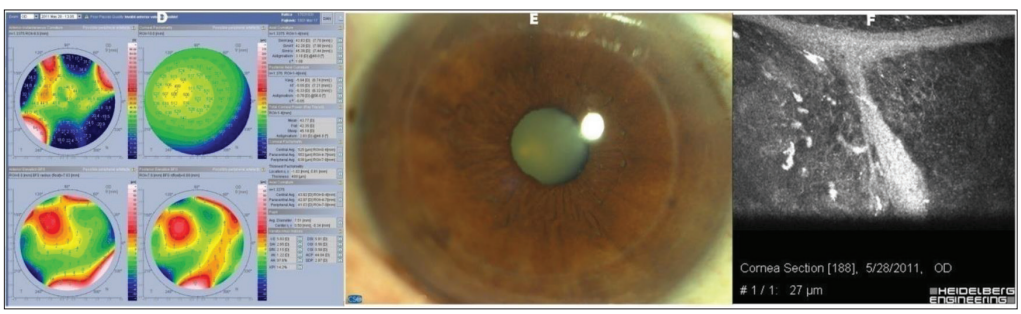

Figure 1. Topography, slit lamp photography and Heidelberg retinal tomography of the right eye

Received • Примљено: July 6, 2025
Accepted • Прихваћено: November 12, 2025
Online first: November 28, 2025

Correspondence to:
Marija BOŽIĆ
Pasterova 2
11000 Belgrade
Serbia
ammilovic@gmail.com

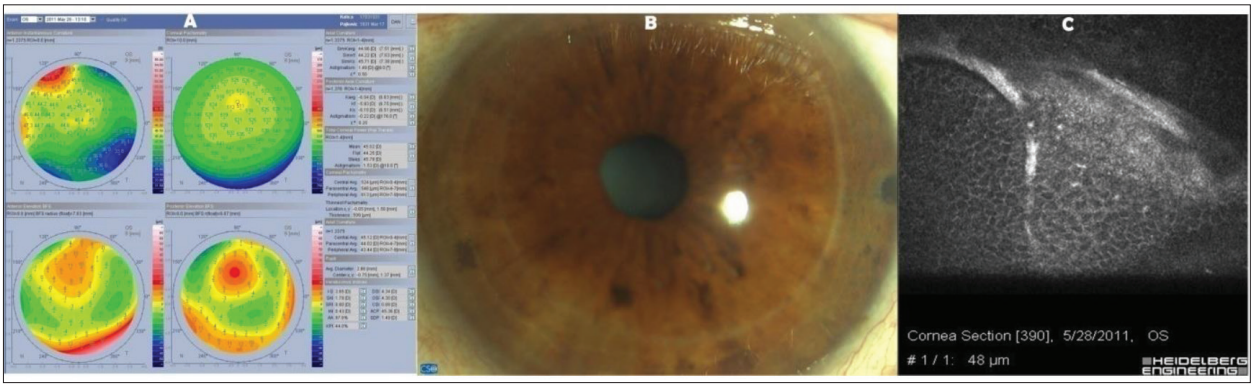

Figure 2. Topography, slit lamp photography and Heidelberg retinal tomography of the left eye

are presenting [1, 2]. Opacities in the form of geometrically regular rings on the periphery of the cornea in the described case look almost like scars from corneal transplant, but the patient did not undergo this surgery. Some of the similar peripheral corneal opacities are part of the clinical picture of the well-known corneal dystrophies [3, 4, 5]. Common feature about these previously described corneal rings is that they become visible at older age and are non-progressive. In the case that we present, we do not have data on when the clouding of the cornea appeared, because the patient did not even register them considering that they do not affect visual acuity or cause any symptoms.

We do not have an answer to the question of why our patient developed bilateral, symmetrical, almost geometrically regular hazy corneal rings. Considering that the patient has no other ophthalmological problems apart from cataracts, it is unlikely that a cornea replacement will be planned, so we cannot expect a histological answer to our question. In this case, we would like to initiate a discussion of our fellow ophthalmologists who would share their experiences and opinion.

Conflict of interests: None declared.

REFERENCES

1. Uddaraju M, Mascarenhas J, Das M, Prajna NV. A case of bilateral, multiple, symmetric, concentric ring-shaped opacities in the cornea. JAMA Ophthalmol. 2015;133(4):483–4. [DOI: 10.1001/jamaophthalmol.2014.5379] [PMID: 25569602]
2. Petrovic T, Stanojlovic S. Tomographic changes after corneal collagen cross-linking for progressive keratoconus – one-year follow-up study. Srp Arh Celok Lek. 2022;150(7–8):445–50. [DOI: 10.2298/SARH200731062P]
3. Melles GR, de Séra JP, Eggink CA, Cruysberg JR, Binder PS. Bilateral, anterior stromal ring opacity of the cornea. Br J Ophthalmol. 1998;82(5):522–5. [DOI: 10.1136/bjo.82.5.522] [PMID: 9713059]
4. Megalla M, Li E, Branden P, Chow J. Bilateral idiopathic corneal opacity: A report of Ascher ring and a review of the literature. Am J Ophthalmol Case Rep. 2021;22(23):101176. [DOI: 10.1016/j.ajoc.2021.101176] [PMID: 34368499]
5. Nofal N, Darvish-Zargar M, Teboul B. A case of symmetric bilateral ring-shaped corneal opacities. Can J Ophthalmol. 2022;57(2):e42–e44. [DOI: 10.1016/j.jcjo.2021.07.006] [PMID: 34419420]

Мистериозни прстенови на рожњачи

Марија Божић, Тања Калезић, Весна Марић, Бојана Дачић Крњаја

Универзитет у Београду, Медицински факултет, Универзитетски клинички центар Србије, Клиника за очне болести, Београд, Србија

САЖЕТАК

Увод Приказујемо случајни налаз необичних прстенастих билатералних замућења на иначе провидним рожњачама код особе без других офталмолошких болести осим катаракте. Клинички налази, *in vivo* конфокална микроскопија и налази топографије рожњаче не одговарају ниједној описаној дегенерацији рожњаче, па је циљ ове презентације консултација са колегама офталмолозима у вези са пореклом и значајем описаних промена.

Приказ случаја „Мистериозни прстен рожњаче" је случајно уочен као билатерални, асимптоматски, готово савршено округлог облика, беле боје и смештен уз лимбус. Одговарајућа дијагностика није дала одговор на порекло ових симетричних замућења.

Закључак Представљамо раније неописана симетрична билатерална замућења рожњаче, у потрази за одговором на питање да ли је неко од наших колега офталмолога имао сличне случајеве у својој пракси или поседује сазнања о каквој врсти поремећаја се ради.

Кључне речи: рожњача; замућење; дистрофија