

# Subretinal hemorrhage after mini-percutaneous nephrolithotomy

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## CASE REPORT

A 44-year-old female with a left kidney stone measuring  $1.8 \times 1.5$  cm and with a density of up to +1370 HU was prepared for mini-percutaneous nephrolithotomy. The concomitant pathology included obesity [body mass index (BMI)  $37.1 \text{ kg/m}^2$ ], arterial hypertension, and type 2 diabetes mellitus. The surgery was performed under general anesthesia in the modified Galdakao-Valdivia position. Moreover, mini-percutaneous nephrolithotomy (PCNL) was performed without any peculiarities (Figure 1). We found that the patient's vital functions were stable at the end of the operation; however, at the extubation stage, the patient had a hypertensive crisis. The arterial pressure was normalized in the OR.

In the first hours after surgery, the patient started complaining about decreased visual acuity and the presence of a floating spot in the right eye. An examination by the ophthalmologist on direct ophthalmoscopy revealed subretinal hemorrhage in the right eyeball. Furthermore, we performed an optical coherence tomography of the eye and magnetic resonance imaging (MRI) of the eye cavity with contrast enhancement, which confirmed the presence of subretinal hemorrhage in the right eyeball (Figure 2). The patient reported no history of hemorrhage, clotting disorders, COVID-19, or anticoagulant therapy, but she had arterial hypertension and impaired glucose

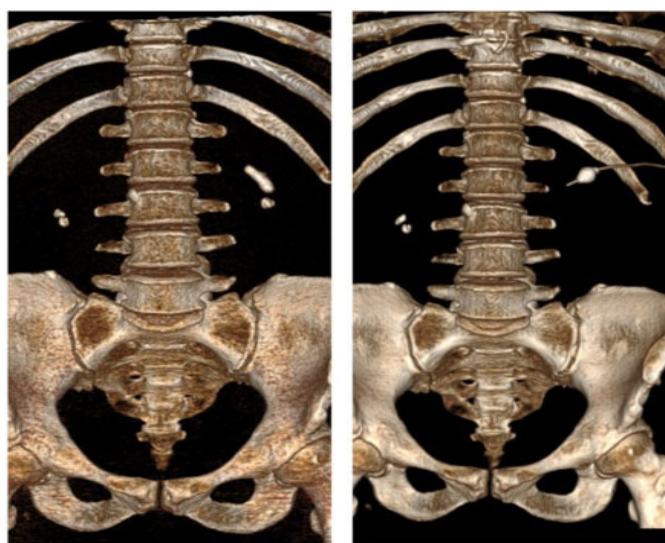


Figure 1: 3D Volume rendering computed tomography (VR CT) scan before and after mini-percutaneous nephrolithotomy (PCNL).

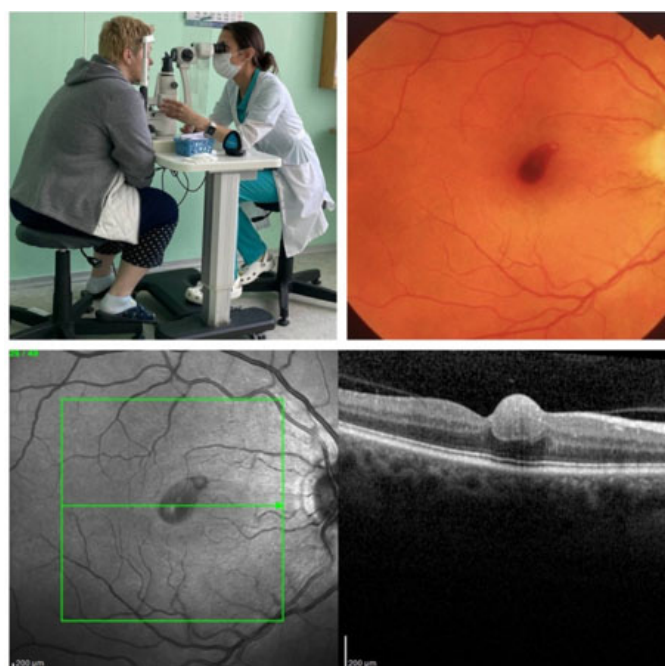


Figure 2: Eye examination after surgery.

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tolerance, which might be triggering factors in her concomitant pathology. Therefore, hemostatic therapy with antifibrinolytic agents was recommended for the patient. On the sixth day after the operation, repeated ophthalmoscopy demonstrated positive dynamics in the form of a decrease in the SC size. During the follow-up which was conducted three weeks after the operation, the vision of the patient recovered completely.

## DISCUSSION

Subretinal hemorrhage is an accumulation of blood between the retinal pigment epithelium and the neurosensory epithelium, which often causes its extensive detachment. In clinical practice, this pathology is quite rare. All cases of SC described in the literature have at least one predisposing factor. Systemic risk factors include anticoagulants, blood dyscrasia, malignant tumors in the decay stage, arterial hypertension, and diabetes mellitus, while macular subretinal neovascularization and retinal blood supply abnormalities are among the ophthalmic risk factors. Therefore, timely diagnosis of SC and timely treatment are the cornerstones of controlling this complication [1–6].

We suppose that the hypertensive crisis at the extubation stage is the main trigger for subretinal hemorrhage which appeared in the background of hypertonic and diabetic retinopathy.

## CONCLUSION

This paper described an atypical complication that emerged after mini-percutaneous nephrolithotomy. Even in ophthalmologic practice, subretinal hemorrhage is rather rare pathology. However, the probability of its occurrence should be taken into account in patients with diabetes mellitus and hypertension.

**Keywords:** Body mass index, Magnetic resonance imaging, Subretinal hemorrhage

### How to cite this article

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## Author Contributions

NK Gadzhiev – Conception of the work, Design of the work, Acquisition of data, Analysis of data, Interpretation of data, Drafting the work, Revising the work critically for important intellectual content, Final approval of the version to be published, Agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved

VM Obidnyak – Conception of the work, Design of the work, Acquisition of data, Analysis of data, Interpretation of data, Drafting the work, Revising the work critically for important intellectual content, Final approval of the version to be published, Agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved

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Ibragim Malikiev – Conception of the work, Design of the work, Acquisition of data, Analysis of data, Interpretation of data, Drafting the work, Revising the work critically for important intellectual content, Final approval of the version to be published, Agree to be accountable for all

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Authors declare no conflict of interest.

**Data Availability**

All relevant data are within the paper and its Supporting Information files.

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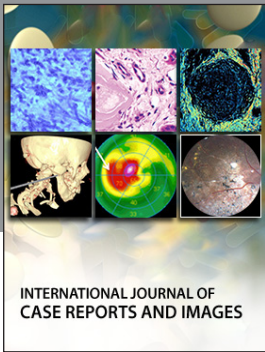
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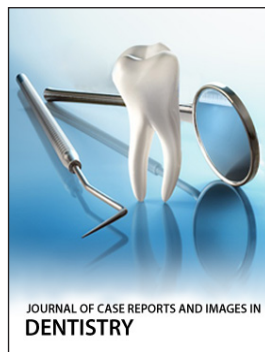
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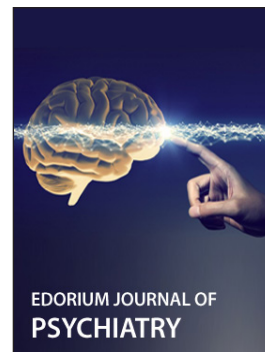
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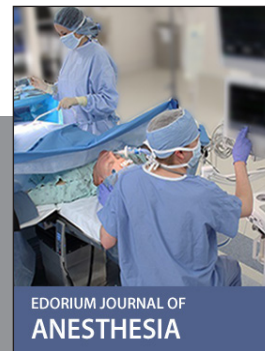
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