

THE INFLUENCE OF DIFFERENT ANESTHETIC TECHNIQUES ON INTRAOPERATIVE BLEEDING DURING ENDORESECTION OF CHOROIDAL MELANOMA



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Background and aims:

Intraoperative bleeding during endoresection of choroidal melanoma may impair not only the visibility of the surgical field, but, if excessive, can have an impact on postoperative permanent visual loss. This study presents the influence of different anesthetic techniques on bleeding during this procedure.

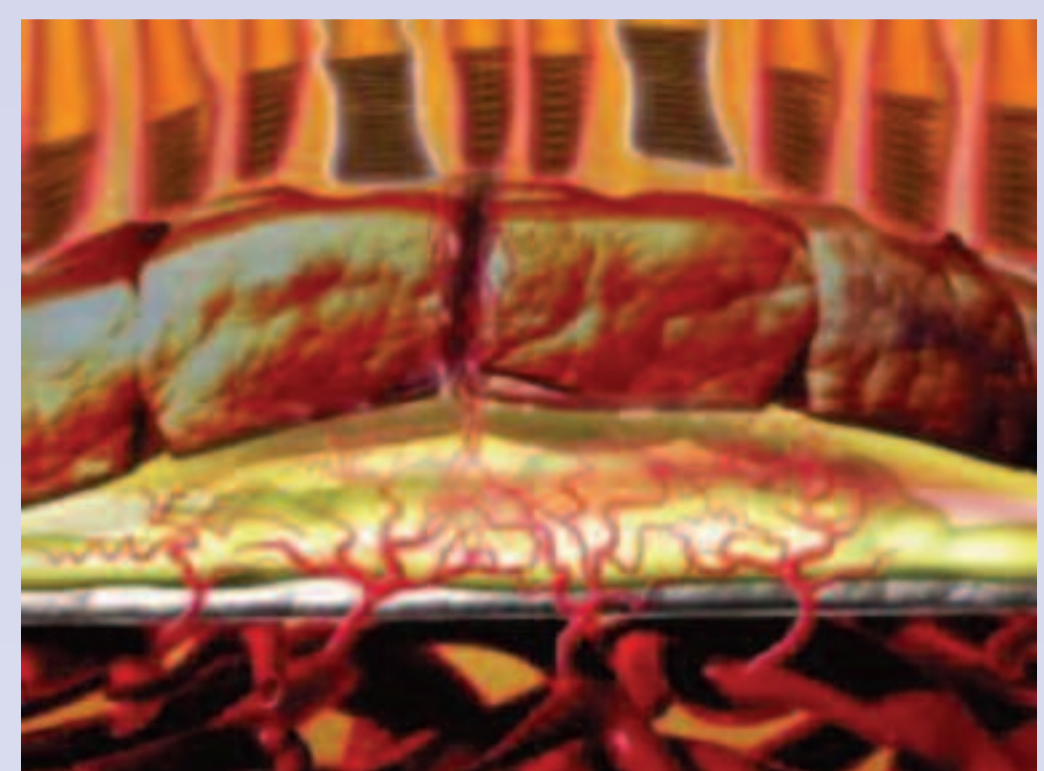


Figure 1. Schematic representation of melanoma occurrence (it's growth in choroid and 3D retina lifting off because of bleeding)

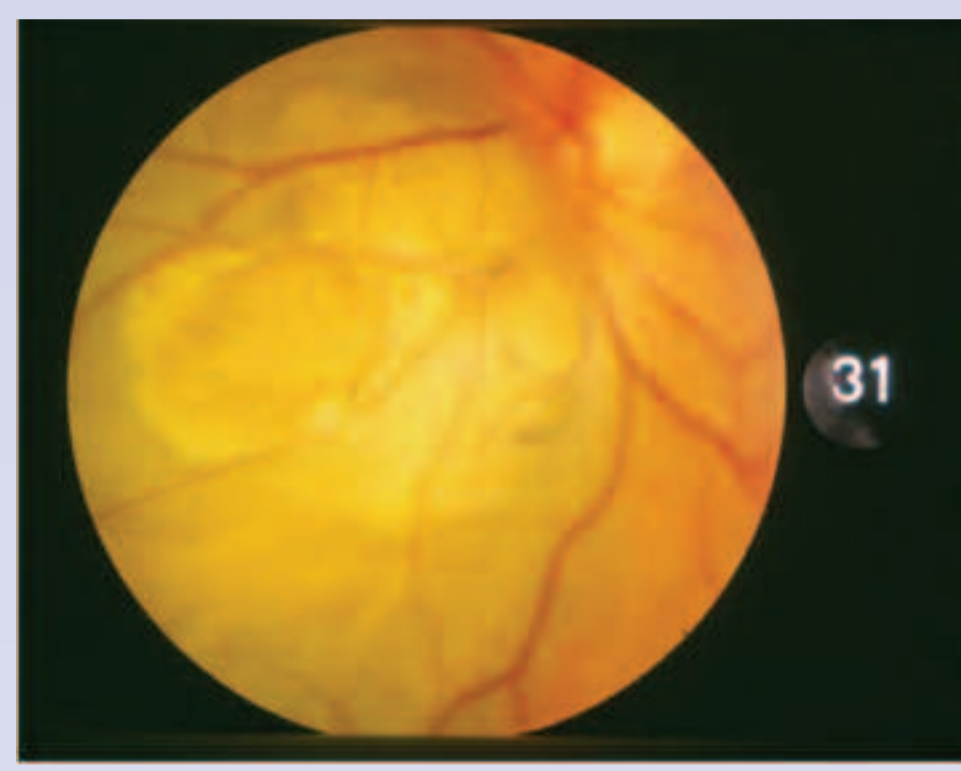


Figure 2. Choroidal melanoma

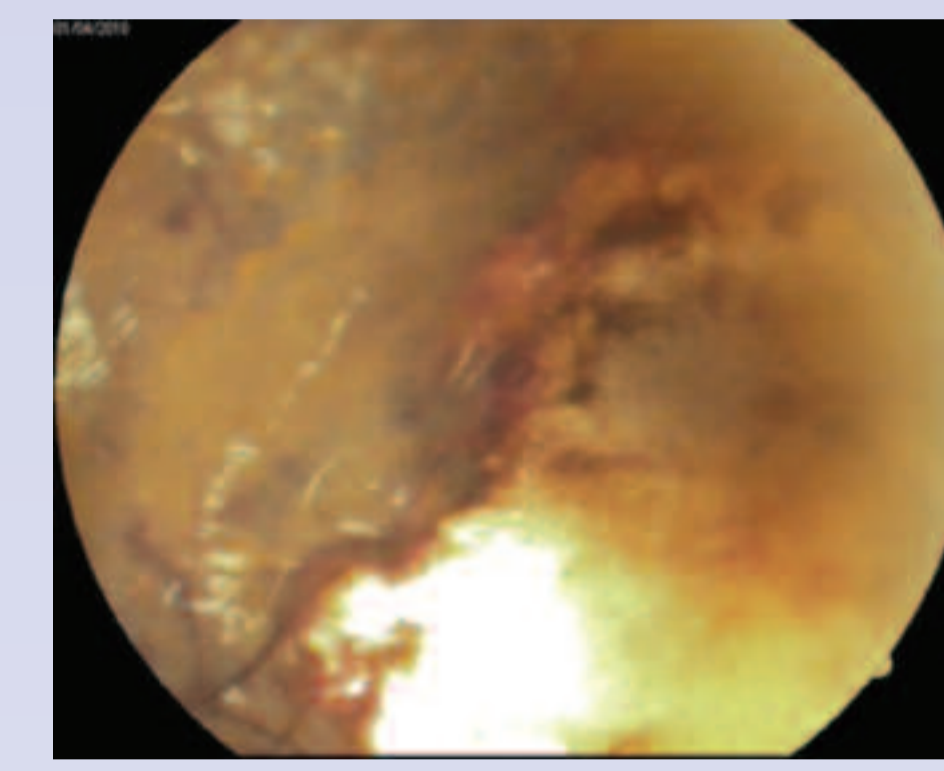


Figure 3. Chorioretinal defect/scar after endoresection

Patients and methods:

Nine consecutive patients under general moderate hypotensive anesthesia (target mean arterial pressure of 50-65 mmHg, MAP) were reviewed retrospectively. In six patients hypotensive anesthesia was based only on a combination of volatile anesthetics isoflurane or sevoflurane with opioids fentanyl or sufentanil. Three patients in addition received nitroglycerin (NTG) (n=1; 1 µg kg⁻¹ min⁻¹), urapidil (n=1; intravenous bolus of 12.5 mg) or esmolol (n=1; intravenous bolus of 1 mg/kg). MAP, heart rate (HR) and the Surgeon's Scale for Quality of Surgical Field (bleeding score, BS) were analysed.

Surgeon's Scale for Quality of Surgical Field:

- 0 - no bleeding, virtually bloodless field
- 1 - bleeding, so mild it was not even a surgical nuisance
- 2 - moderate bleeding, a nuisance but without interference with accurate dissection
- 3 - moderate bleeding that moderately compromises surgical dissection
- 4 - bleeding, heavy but controllable, that significantly interfered with dissection
- 5 - massive uncontrollable bleeding

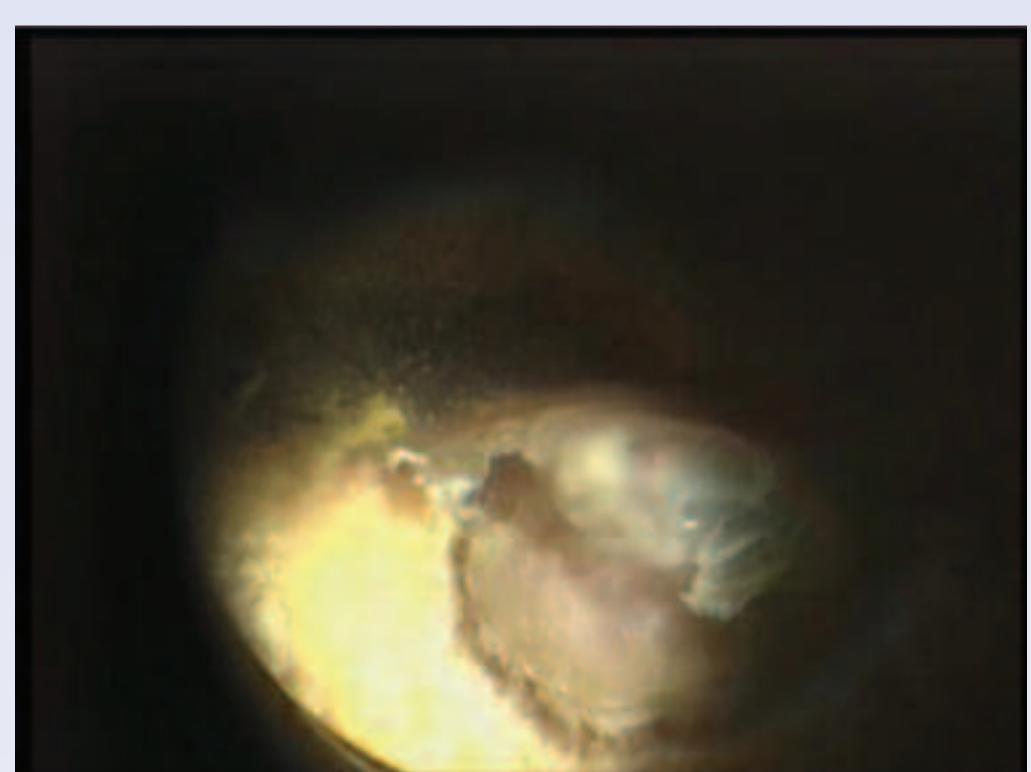


Figure 4. Intraoperative bleeding score 0

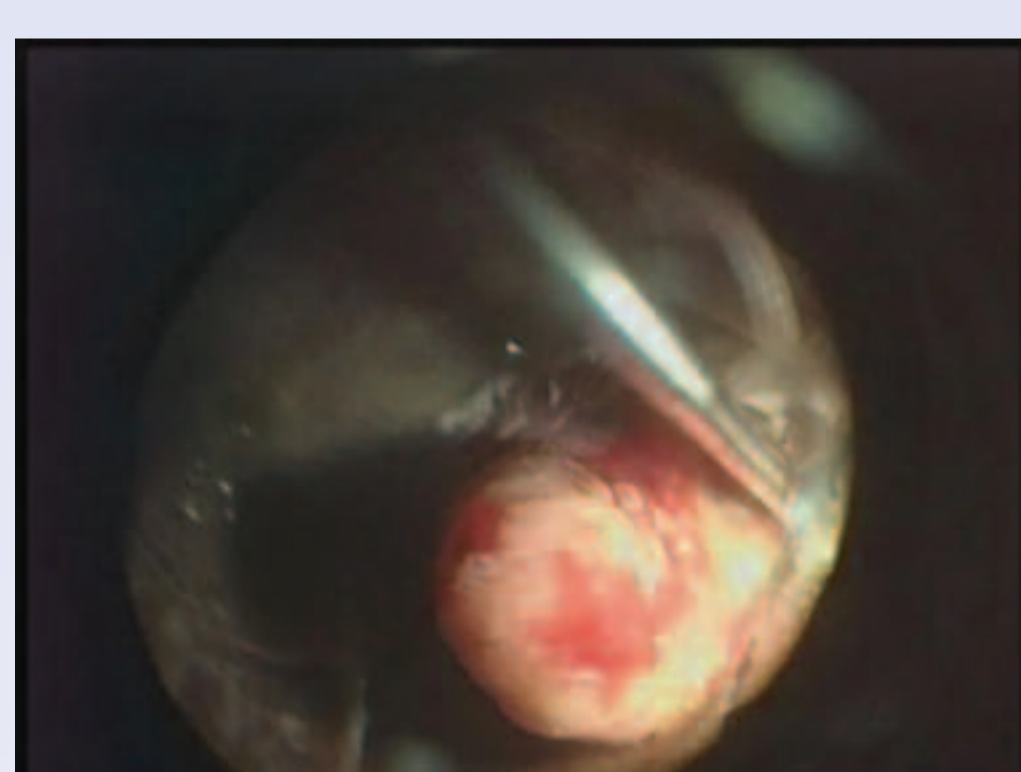


Figure 5. Intraoperative bleeding score 1

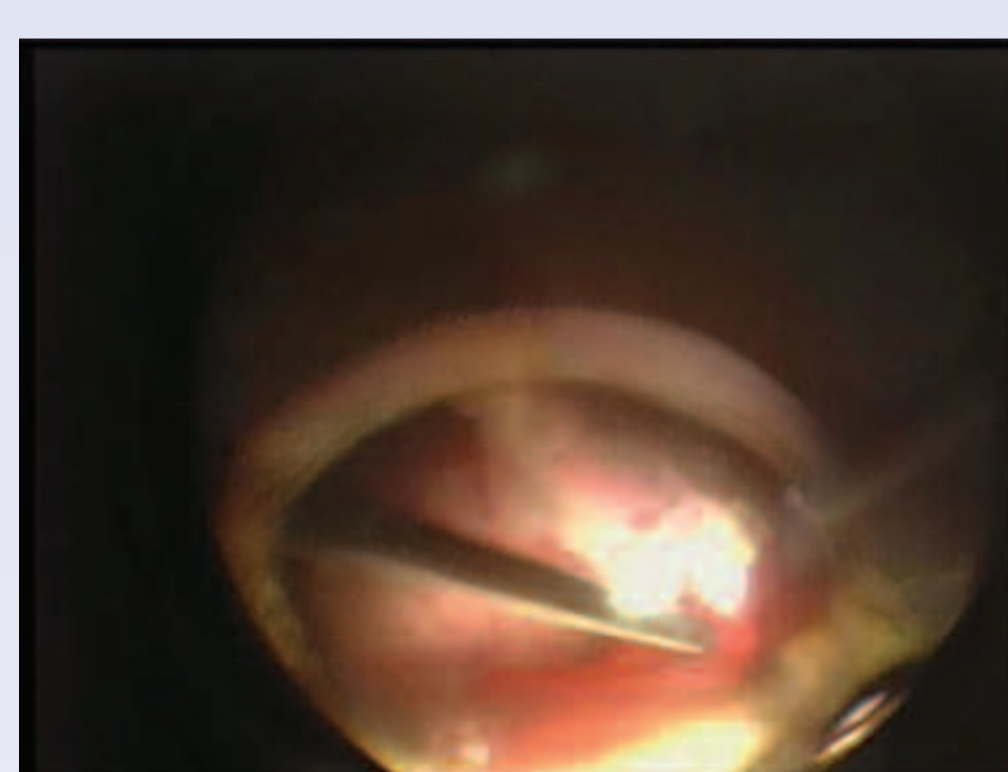


Figure 6. Intraoperative bleeding score 2

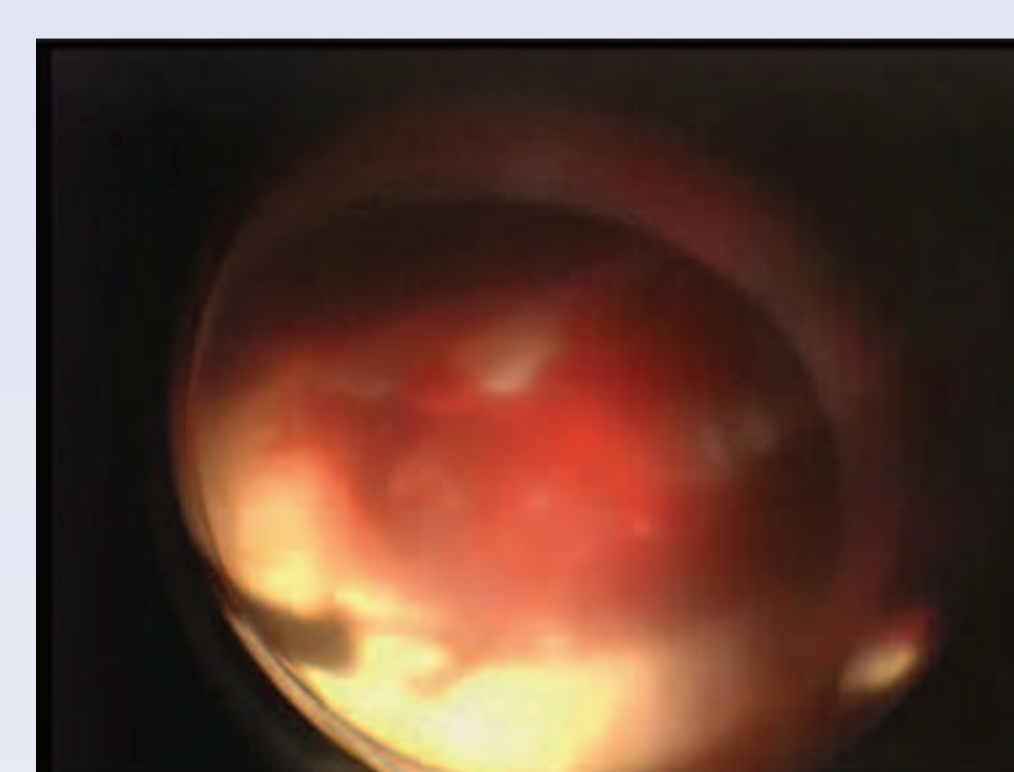


Figure 7. Intraoperative bleeding score 3

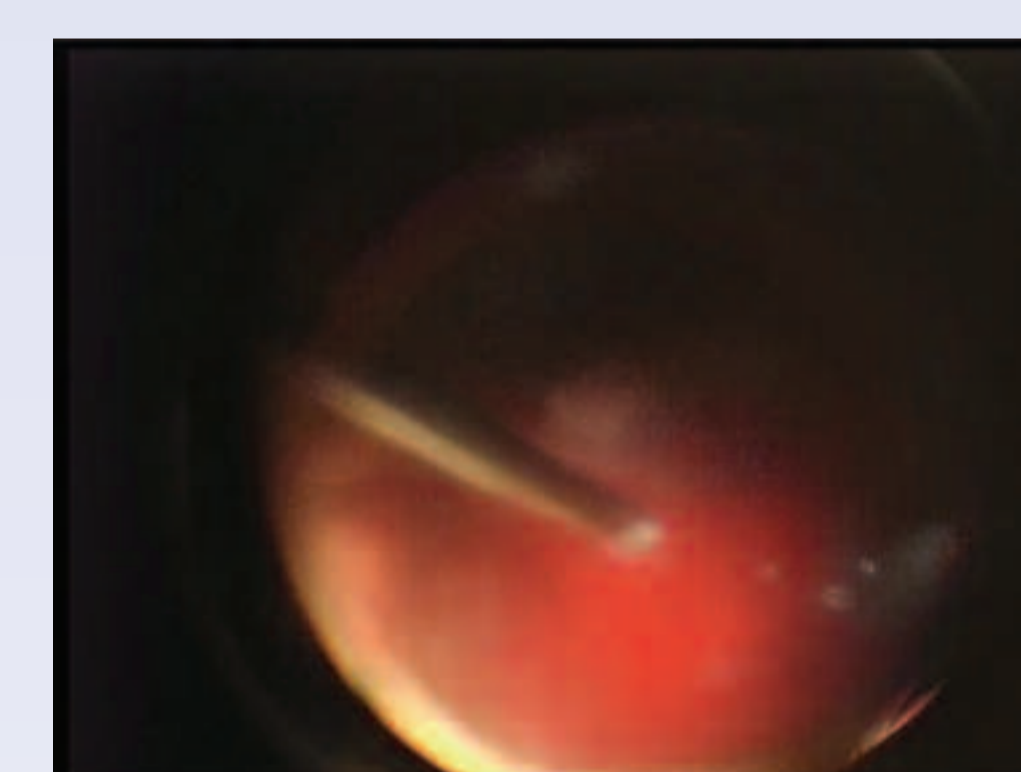


Figure 8. Intraoperative bleeding score 4

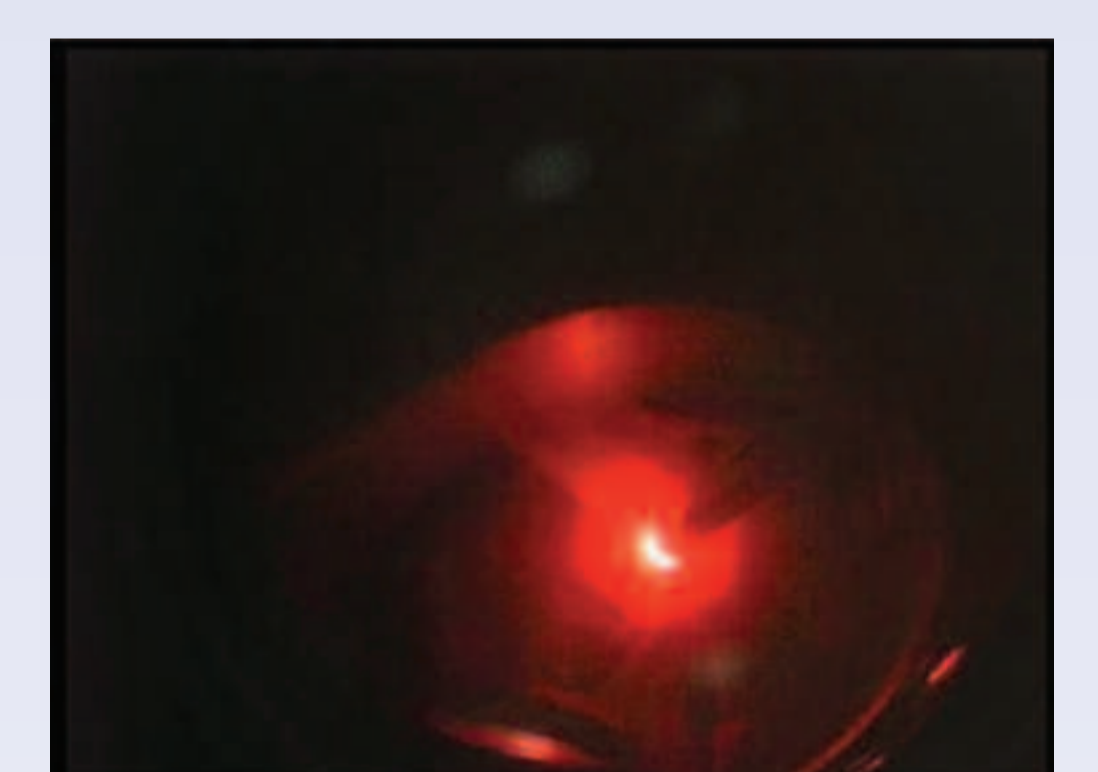


Figure 9. Intraoperative bleeding score 5

Results: The target MAP was achieved in four patients (two with only volatile anesthetic and opioid; two NTG or esmolol). HR was reduced to ≤60 beats/min in four patients (three with only volatile anesthetic and opioid; one with esmolol). The patient with esmolol had the best bleeding score of 1.

Figure 10. MAP, HR and bleeding score for patients receiving different techniques of anaesthesia. In patients 2, 3, 4, 6, 7 and 8, hypotensive anesthesia was based only on a combination of volatile anaesthetics (isoflurane or sevoflurane) with opioids (fentanyl or sufentanil). Patients 1, 5 and 9, in addition, received NTG, urapidil and esmolol, respectively.

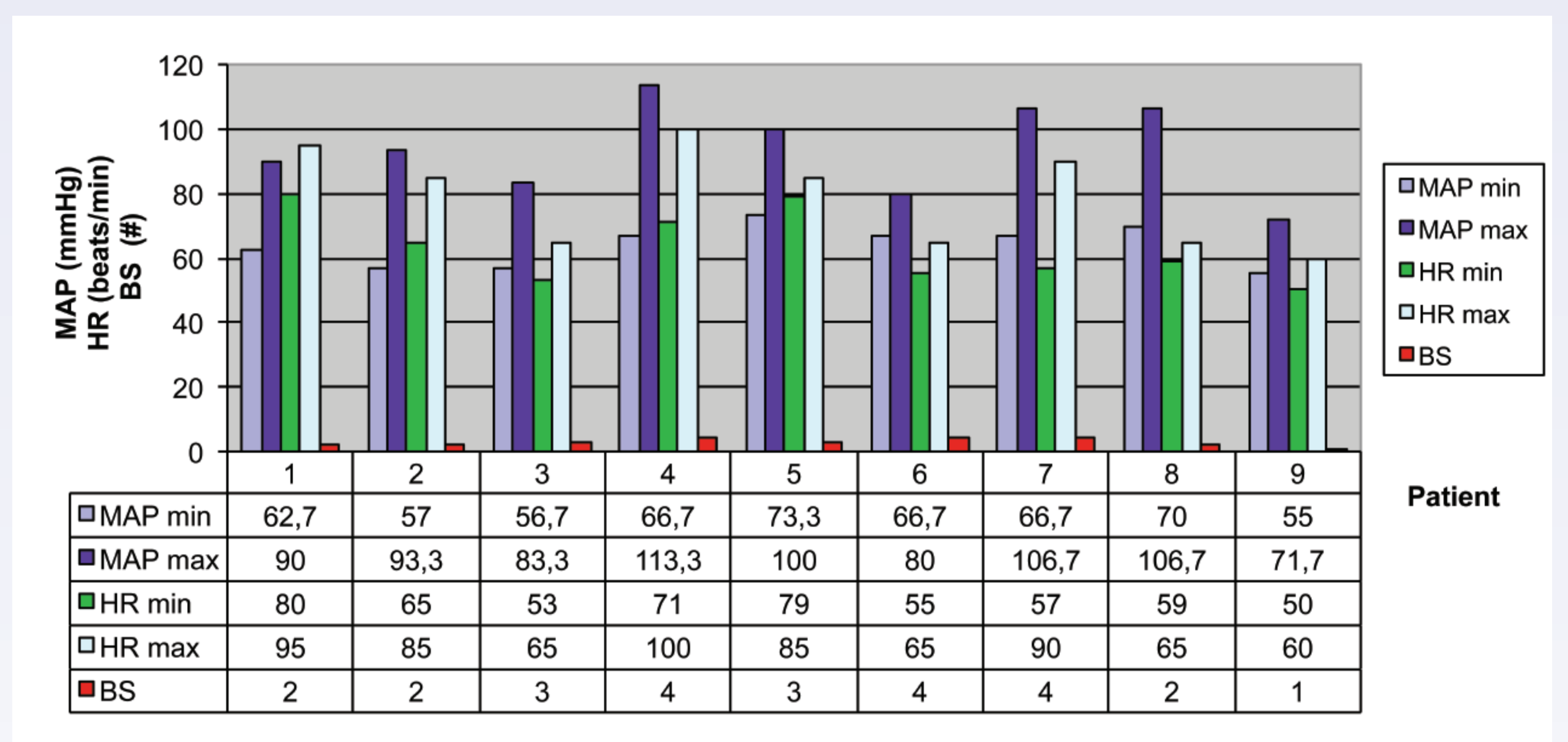


Figure 10.

CONCLUSION

The used technique of moderate hypotension and bradycardia with intraoperative β blockade was the most effective in reduction of intraoperative bleeding during choroidal melanoma endoresection in our case-series.

References:

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