

Ruby and argon laser treatment of fundus diseases

Zhang Chenfen, Zhu Xuanhe

(Department of Ophthalmology, Capital Hospital, Chinese Academia of Medical Sciences, Beijing)

This paper presents 524 cases with 553 eyes having fundus diseases with retinal breaks and retinal vascular diseases, treated by ruby laser since 1974 and argon laser 2 years later.

The equipments were produced in China. The beam diameter of the argon photo-coagulator used was about 50μ and that of the ruby laser 400μ . Before treatment each eye was thoroughly examined including routine ophthalmoscopy, special tests for visual field, fluorescein angiography and fundus photographs. Each patient was followed up subsequently, 56% for more than half a year and 211 cases for 1-4 years.

394 eyes with retinal breaks were treated by ruby and/or argon lasers. Simple retinal holes, no matter where they located, were sealed successfully. The results in those with local flat detachment (not larger than 1 PD) were also gratifying. There were 10 eyes with retinal tear and detachment located in the coloboma of the choroid, in 9 of them good results were achieved. After laser treatment there were no changes in visual acuity in all patients with retinal breaks outside the macular region and in 35 eyes with macular holes treated by argon laser.

In this study there were 36 cases of angioma including choroidal hemangiomas, von Hippel's disease, miliary microaneurysms in simple diabetic retinopathy and macroaneurysm secondary to diseases of the retinal blood vessels. Argon laser photocoagulation proved to be an effective treatment for retinal and choroidal vascular diseases. The best results were obtained in smaller tumors with less secondary retinal changes. After treatment, the tumor regressed. There were a few or no leaks when they were checked with fluorescein angiography. The impaired vision improved significantly. Larger angiomas, especially the deeply situated tumors such as choroidal hemangioma in the late stage with a large amount of subretinal fluid did not always respond well.

29 eyes with central serous chorioretinopathy were treated with argon laser. After the laser treatment the best results were obtained by the end of the first month.

44 patients with intraocular hemorrhage for various causes were treated with ruby laser. Good results were achieved in patients with bleeding in anterior chamber.

Laser treatment was given to patients with preretinal or papillary neovascularization and prolonged macular edema or episodes of vitreous hemorrhage and patients with simple diabetic retinopathy with prolonged macular edema. The preretinal or papillary neovascularization atrophied or faded away 4-5 weeks later. Vision improved to varying degrees and vitreous bleeding stopped.

Following treatment of retinal holes by ruby laser, there were pigment granules or small opaque particles in the vicinity of the photocoagulated area. Macular pucker occurred in 5 cases (2 were treated with ruby & 3 with argon laser). No definite lesions were found in the cornea or lens in this series.

红宝石与氩离子激光治疗眼底病

张承芬 朱宣和

(中国医学科学院首都医院眼科)

我科于1974年开始用国产红宝石激光、1976年起用氩离子激光治疗眼底病,至1979年共治524例553只眼。红宝石激光为直接检眼镜式,光斑直径为 400μ 左右。氩离子激光为联结于裂隙灯装置,光斑为 $30\sim 100\mu$ 。

治疗前,每例均作全面眼部常规检查,包括充分散瞳、详查眼底、眼底照象及荧光素血管造影。治疗后定期复查。

视网膜裂孔394只眼,用红宝石或(与)氩离子激光作环形光凝包围,凡单纯裂孔治愈率为100%。合并浅脱离不超过1PD者为93.7%。非黄斑区视网膜裂孔激光治疗后及黄斑裂孔用氩离子激光治疗者,术后视力均无损害。

68例各种眼底血管性疾病,激光治疗后得较好疗效,改变了以往最终失明的预后。其中视网膜血管瘤全部治愈。脉络膜血管瘤病例,瘤体小及附近无视网膜下积液者,对治疗的反应较好,治疗后荧光素血管造影下无或极少荧光渗漏。

29例中心性浆液性视网膜脉络膜病变,用氩离子激光治疗一周后,视力即开始增进,快者4周左右即恢复到最好视力,眼底中心区反光在3周后即出现。

糖尿病性视网膜病变及视网膜静脉阻塞后新生血管增殖。经激光治疗后部分病例获得疗效。44例眼内出血用红宝石激光治疗均收到一定效果。