Argon lasers then and now
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Prior to William Bridges inventing the argon ion laser in 1964, eye care professionals were using ruby lasers, which were poorly absorbed by blood and the retinal burns produced were very intense. Bridges' new argon lasers in the blue (488 nm) and green (514 nm) range of the spectrum had the advantage of being strongly absorbed by hemoglobin and melanin. By 1969, the first large clinical studies were performed and showed effectiveness of using these lasers for closing blood vessels and vascular lesions. These early studies paved the way for the lasers we know today.

These days argon lasers are being used in various ocular surgeries. The argon laser is suited for both anterior and posterior ocular surgeries such as:

- Iridectomy
- Iridotomy
- Argon Laser Trabeculoplasty (ALT)
- Grid Photocoagulation
- Panretinal Photocoagulation (PRP)
- Photocoagulation: prevention of retinal detachment

Today, many of these procedures can also be performed with the 532nm Nd:YAG laser.

- In 1995, selective laser trabeculoplasty (SLT) was introduced and has shown to be equally effective in treating open angle glaucoma as ALT. SLT has the additional benefits of being easier to perform due to a larger spot size, is better tolerated by patients, and produces less scarring to the trabecular meshwork allowing for subsequent treatments.
- Laser peripheral iridotomy (LPI) can be performed with the Nd:YAG laser or the argon laser. Today, it is common for practitioners to use both the argon and Nd:YAG lasers when completing an LPI. It has been shown that using a combination of both, especially in dark irides, is more effective and reduces complications when compared to an argon or Nd:YAG laser alone.
- A relatively new computer guided scanning laser, PASCAL, has been utilized for PRP. PASCAL results in much less pain, reduced inner retinal damage, and decreased scarring as compared to traditional argon laser treatments.

References:


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