

SUMMER

LASER IN SURGERY

Laser is an acronym for " Light Amplification by Stimulated Emission of Radiation " . The first laser was built in 1960 by Dr. Maiman, using a ruby rod as the laser medium. Ruby has a special property of generating light of a single pure wave-length when stimulated.

The characteristics of laser beam are monochromatic, coherent and very powerful that make it suitable for use in surgery.

Laser has advantages as precision, and when used to cut tissues, the small vessels are sealed along the line of the incision, and the damage to the adjacent tissues is much less than occurs with diathermy. In addition it preserves sterility during surgery and minimises the post-operative pain. And recently discovered that, it is specific for haemato-porphyrins derivatives, so it is possible to be used in diagnosis and treatment of malignancy.

Laser have been used in the past decade either a light knife to cut tissues, and the CO₂ laser is used for this purpose , or as hemostatic agent by directing the beam down a flexible endoscope to seal a bleeding vessel in the

bed of an ulcer, and in this case either the Neodymium yttrium - aluminium garnet laser or argon laser are used.

Fiberoptic endoscopy has achieved major changes in the diagnosis and treatment of upper gastrointestinal haemorrhage . Laser photocoagulation has been one of the recent endoscopic approaches in this field, it is very useful in bleeding peptic ulcers specially in high risk group how can not withstand surgery .

Also there are many uses of laser in surgery as in management of lung cancer in the field of thoracic surgery, and also used in urology, neurosurgery, vascular surgery and in cutaneous and plastic surgery.

Laser system are expensive and immobile, these represents the basic obstacles in the way of their application , and if these difficulties are solved, laser therapy become widely used.

As the future of laser application in Egypt, studies should be directed to manage bleeding oesophageal varices and to apply laser in other fields.