

Short Communication

The laryngeal box: an aid to laser microlaryngeal surgery

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Abstract

We report the use of the 'laryngeal box', which permits instruction of a trainee in laser microlaryngeal surgery outside the operating theatre environment.

The CO₂ laser used in Otolaryngology is a class 4 laser (DHSS, 1984), and therefore, has severe restrictions on its use in the operating theatre. We report the use of an instrument which allows the trainee surgeon to undergo instruction and practise microlaryngeal Laser surgery in either the operating theatre or in the 'laboratory' setting.

The laser box (Figs. 1 & 2) was designed in Middlesbrough by the senior author (VHO) and constructed by the engineering department of South Cleveland hospital. It has been used at this hospital for several years for training prospective laser users. More recently, it has been used successfully for training participants of the Middlesbrough CO₂ laser course. It is at present not available commercially.

The box is made of mild steel and has a matt black finish to reduce reflections of the incident laser beam. The box measures 16 × 20 × 16 cm. On the anterior aspect of the box, projects a cylindrical mild steel tube measuring 15 cm in length and with an internal diameter of 4.5 cm. The tube is inclined upwards at an angle of 10 degrees to the horizontal. On the posterior aspect of the box are two small outlets for the extraction

of laser plume by external suction. The human cadaver or pig larynx is held firmly in a clamp which fits snugly in the laser box. The top of the box is open for inserting the clamp with the pre-loaded larynx. Prior to using the laser the top of box is sealed with a sliding lid, thus preventing the escape of laser plume and laser beam. We have found the pig larynx, despite its minor differences from the human larynx, to be an ideal specimen for use with the laser box. The laser box can either be placed on a suitably prepared and protected operating table or supported on an adjustable stand (not shown).

References

Department of Health and Social Security (1984) Guidelines on the safe use of lasers in medical practice. Her Majesty's Stationery Office, London. 26 pp.

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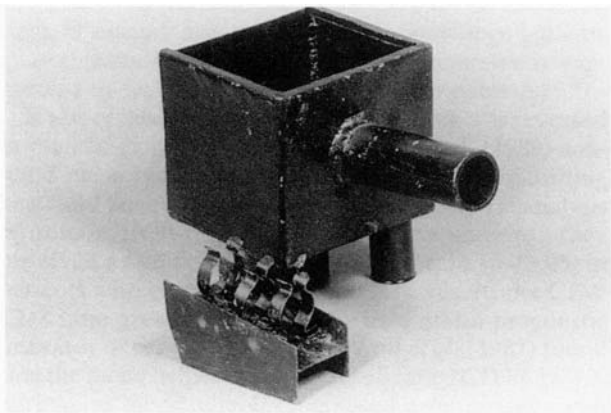


FIG. 1

The Laser box with the clamp, external view.

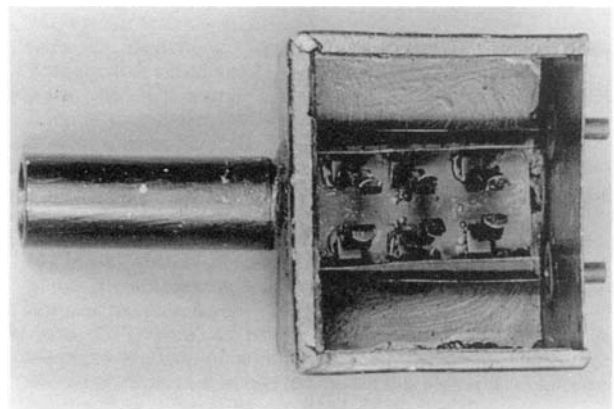


FIG. 2

The Laser box, a view from the top showing the clamp in situ.

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