

Helica Thermal Coagulation

Use in Otorhinolaryngology

(Case Series)

Introduction

In Otorhinolaryngology different surgical cutting tools used to deal with benign lesions. The traditional cold steel technique, the use of power tools as Microdebridors and hot cutting with Coblation and LASER are widely used in otorhinolaryngology. The Helica Thermal Coagulation as a cutting tool is well known and commonly used in Gynaecological surgical procedures since 2005 (Ref.). The HTC device has advantages over other coagulation devices. The HTC uses a combination of low pressure Helium gas and AC electric current at low voltage (2-6 Watts) to deliver energy to tissues. This passes along a single insulated probe. It is held in a non-touch technique 3-5 mm away from the tissue as the energy is efficiently delivered in a non-touch mode. As the interaction between the electrons and tissues is in helium, no smoke or carbonisation develops. The physical effects can be controlled by modifying the power of AC current to such an extent that it is possible to cauterise tissue to a depth of one cell thickness. The amount of energy delivered to tissue is dependent on the distance from the probe to the tissue at any given power output. It is easy to use and quick to set up as it requires no special arrangements. No anaesthetic or theatre precautions. Selectivity of HTC beam to tissues with relatively high water content that relatively limits the tissue damage. The coaxial flow of gas at 2.21 min^{-1} disperses blood and fluid from the tissue before impact. This allows the energy to be concentrated on bleeding vessels that aids haemostasis. The use of ionised helium aids patient's oxygen level. Cost effectiveness as it needs less setup and maintenance costs.

Study Cases

In our small case series we provide our experiences with using the Helica Thermal Coagulation in treating nasal, oral and laryngeal benign lesions. We have done 8 cases in the period between 2007 -2014. Five cases with laryngeal lesions, two with nasal lesions and one case with uvula and post nasal space lesion. They are all males. Their ages range between 33 – 70 years with an average 46.1 years.

Case (1)

A 54 years old gentleman presented in May 2007 with a right vocal cord polyp involving the anterior 2/3. The polyp removed with micro-laryngosurgery in May 2007. Histologically it was a squamous papilloma. A recurrence of the poly treated in September 2007 with Helica thermal coagulation. Patient was followed up until August 2010, there was no recurrence and the patient was discharged.

Case (2)

A 40 years old gentleman first diagnosed with a laryngeal viral squamous cell papilloma in 1996. The papilloma excised several times with laser ablation in the period 1996 to 2007. In 2008 the papilloma was excised with Helica ablation. For the first time the patient reported decreased soreness following the ablation. The papilloma recurred. A repeat laser ablation performed in the period 2008-2013.

Case (3)

A 36 years old gentleman had a right nasal septal lesion. It was surgically excised in 2007. The histology reported as a squamous papilloma. First recurrence treated with repeat surgical excision. Papilloma recurrence treated with Helica thermal ablation once a year between 2009 and 2011. Patient was followed up in 2012 with no recurrence and discharged from the ENT.

Case (4)

44-year-old gentleman presented in 2012 with dysphonia. A diagnosis of bilateral vocal cord papilloma was made. It was treated with Helica ablation once. Patient was followed up with no recurrence.

Case (5)

A non-smoker 53 years old gentleman presented with throat discomfort and dysphonia. A micro-laryngoscopy confirmed left vocal cord granuloma. Helica ablation treatment has reduced the granuloma to half its original size. Patient needed anti-acid medications that helped his throat.

Case (6)

a 39 years old gentleman was first treated in 2009 for papilloma on the uvula with Coblation treatment. A repeat Coblation treatment used for recurrent lesion and developed new lesion in the larynx. In 2010 the papilloma extended into the nasopharynx and the posterior end of the middle turbinate. Helica treatment was used in 2010 and repeated in to 2013.

Case (7)

A recurrent Schneiderian papilloma of the right nasal septum in a 33 years old gentleman treated with yearly repeat Helica treatment in the period 2010 to 2014.

Case (8)

Helica treatment used once in 70 years old gentleman for bilateral vocal cord lesions. The histology confirmed high-grade dysplasia. The current lesion was treated was confirmed SCC and defeated with laser cordectomy. The patient later underwent total laryngectomy.