Breast mass excision by 810 nanometer wavelength diode laser

A dissertation
Submitted to the Institute of Laser for Postgraduate Studies / University of Baghdad in partial fulfillment of the requirements for the Diploma degree of
Laser in medicine

By

Ali Shuker Mahamood

C.A.B.S, D.G.S, M.B.Ch.B.

2004 1425

Abstract

Objective:

Breast mass is by far the most important clinical problem that concerns the breast today. This study was carried out to evaluate Diode laser (810 nm wavelength) as a cutting tool in breast mass excision and as a haemostatic tool for coagulation that to be secured during excision or surgery.

Materials & methods:

the following materials were used in this study, diode laser(810 nm wavelength) with fiberoptic 600µ conical tip, cow's breast tissue(for preliminary work), six female patients with breast mass (for clinical work, three patients for laser use and three for conventional method of treatment), and surgical tools.

Results:

The preliminary work was done on breast tissue of cow, the Diode laser was used with different parameters to make an incision and excision in breast cow tissue. Preliminary works were studied and revealed the following results:

1. Power needed for cutting and excision was 15 W.
2. Time consumed for excision of a piece of cow's breast tissue 40 mmx10 mmx3 mm in dimensions was 5 minutes.
3. Depth range of cutting was 2-3 mm.
4. Speed of cutting was 0.6 centimeter/ second.

In the clinical work, where the laser used as surgical tool for three patients, the following results were got:

1. Power needed for excision was 15 W.
2. Power used for coagulation was ranging between 10-15 W.

اسم وعنوان الطالب

د. علي شكر محمود.

طبيب جراح اختصاصي.

بكالوريوس طب وجراحة.

دبلوم عالي بالجراحة العامة.

بورد (دكتوراه) عربي بالجراحة العامة.

العنوان: معهد الليزر للدراسات العليا / جامعة بغداد.