Case study:

Lightpoint Medical

Company
Lightpoint Medical

Competition:
Autumn 2013
(Research Tool)

Innovation:
Real time detection of cancer using a hand held molecular imaging fiberscope.

Total award:
£1,043,720
awarded for Phase 1 & 2

Savings to the NHS:
£28m
estimated saving per year

Product availability:
Quarter 1 2016

SUMMARY

Cancer frequently requires multiple operations. For example, 20-40% of breast cancer patients who undergo breast-conserving surgery will require a re-operation. The consequences, in addition to the repeat operation itself, include delayed adjuvant treatment, higher risk of mastectomy, increased likelihood of distant recurrence, poorer functional and cosmetic outcomes, patient anxiety, and enormous financial cost.

Cancerous tissue often fails to be completely removed during the initial operation because there are no tools to rapidly and effectively detect cancer during surgery. Today, surgeons primarily rely on visual and tactile assessment to find microscopic cancerous deposits. Consequently, there is a tremendous medical need for improved tools to image cancerous tissue in real time during the operation.

Lightpoint Medical has developed a proprietary molecular imaging technology with the potential to detect cancer in real-time during surgery, and thereby reduce the need for re-operation.

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SBRI HEALTHCARE

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OVERVIEW

The technology is based on Cerenkov Luminescence Imaging (CLI), a ground-breaking imaging modality that can perform optical imaging of Positron Emission Tomography (PET) agents. CLI combines the benefits of optical imaging (namely, low cost, high resolution, and portability) with the power of PET imaging (high diagnostic performance, and widespread availability of imaging agents).

Relative to competing technologies, CLI has the potential for greater diagnostic performance across a broader range of indications, without the need for developing novel contrast agents. CLI's roughly 100-fold lower cost and footprint compared to a whole-body PET scanner make it a potentially disruptive technology. The company's intellectual property covers a series of engineering breakthroughs needed to make CLI feasible for routine clinical use.

PATIENT PERSPECTIVE

The impact of re-operations for cancer patients includes critical delays in follow-up treatment such as radiotherapy and chemotherapy, increased likelihood of recurrence, poorer cosmetic outcomes, increased risk of infection and emotional distress. For the NHS, the impact includes enormous financial cost and the vast consumption of clinical resources.

The failure rate for breast cancer surgery is so high because surgeons rely primarily on sight and touch to remove tumours and assess disease metastasis in lymph nodes. As a consequence, microscopic cancerous deposits around a tumour site are often left behind or the spread of cancer via lymph nodes is missed and patients are recalled for repeat surgery once post-surgical pathology tests prove positive. Alternatively, lymph nodes are removed as a precaution and patients suffer very significant morbidities such as lymphedema.

ECONOMIC IMPACT

Lightpoint is expecting to release their first commercial product in Q3 2015 and a second product in Q1 2016. The team is rapidly growing from 3 persons in 2014 to a team of 15 in May 2015 and an expected growth to a total of 20 staff members at the end of 2015.

Revenue for Lightpoint Medical is expected to double year over year for the next 3 years with savings to the NHS in excess of £28M annually.

Visit: lightpointmedical.com

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