

Oral presentation

Raman spectroscopy in clinical diagnosis of head & neck pathology

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Introduction

Applications of Raman spectroscopy in the life sciences are still in the early stages of development. Raman spectroscopy is being investigated in a broad spectrum of biological and toxicological sciences. In oncology Raman is being investigated as a diagnostic tool for characterising cancer cells and distinguishing these from normal cells. Raman spectroscopy has the distinct advantage over other optical techniques that it provides information on molecular composition and structure of living tissue. There is a strong rationale for using Raman spectroscopy in epithelial cancer. Although Raman spectroscopy has been investigated for several decades, clinical studies are scarce.

Materials and methods

The existing literature on Raman spectroscopy was evaluated with a Mesh search in Pub med using "Raman spectroscopy" and "Neoplasms" and "Humans" as keywords.

Results

Pub med generated 166 hits on these Mesh terms of which 23 were reviews. Papers were selected to illustrate the most relevant progress in Raman Spectroscopy.

Conclusion

It is apparent that Raman spectroscopy has great potential in becoming an important optical technique in cancer diagnostics. However, there are major technical challenges to be overcome, specifically the design of the fibre-probe and signal to noise ratio. In this presentation our own experience with in vivo Raman spectroscopy as well as a survey of the literature will be presented to elucidate the current status of this versatile technique.