Technology Offer

Ref.-No. M1216

Protective cap for standard microcirculatory videomicroscopes

Introduction

Life-threatening illness in critical care patients is often accompanied by changes in microcirculation. Given that a sufficient microcirculation is crucial for oxygen supply to individual cells and organs, deterioration of microcirculation often alters organ function. In recent years techniques to visualize the patients microcirculation at the bed-side have been developed, e.g. SDF (side stream dark-field) and IDF (incident dark field) illumination techniques. Generally observation of microcirculation is conducted by inserting a pencil shaped camera device in the patients mouth and measuring microcirculation sublingually. The camera device is protected by a single use protection cap that is discarded after the examination.
A serious problem in measuring the microcirculation sublingually is the low intraluminal pressure of sublingual capillaries. By placing the camera for measurement, the blood flow in the capillaries may be altered or even inhibited. These pressure artefacts may be misinterpreted as disturbances in microcirculation causing a false diagnosis and therapy.

Another challenge in measuring microcirculation sublingually is the ongoing production of saliva and the occurrence of cell detritus in the area of interest thus restraining or inhibiting microcirculation measurements.

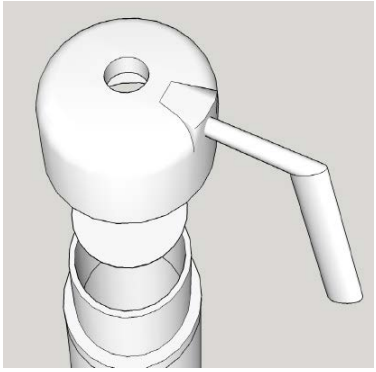

Figure 1. Exploded view drawing of a possible modified protective cap

Invention

The present invention relates to the examination of the microcirculation and aims to optimize the examination and recording conditions with standard videomicroscopes for mircrocirulatory analyses.

Advantages of the invention

A modified protective cap for standard microcirculatory videomicroscopes, which

- reduces pressure artefacts
- facilitates the removal of detritus (e.g. RBC)
- enables the possibility of fluorescence microscopy
- allows local administration of fluid or gases

Patent situation

Patent applications have been filed in Europe and the USA.

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