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[Contemporary applications of infrared imaging in medical diagnostics].

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Mikulska D.

Source

Katedra i Klinika Chorób Skórnych i Wenerycznych Pomorskiej Akademii Medycznej al. Powstańców Wlkp. 72, 70-111 Szczecin.

Abstract

INTRODUCTION:

Thermal imaging is a non-contact, non-invasive diagnostic method for study human body temperature. Therefore infra red thermal imaging finds increasing application in clinical medicine.

PURPOSE:

The aim of this paper was to present and discuss the history and applications of thermal imaging in medicine.

MATERIAL AND METHODS:

The literature dealing with the history and applications of thermal imaging in medicine has been reviewed.

RESULTS:

Medical thermography was born in 1957 when a surgeon, Dr. R. Lawson discovered that his breast cancer patients had higher skin temperature over the cancer area. Since the 1970's thermography has been used in many areas of medicine. Early problems such as low detector sensitivity, but most significantly, poor training ofthermography technicians was the source of error in thermography and retarded the acceptance of this technique until 1990. Since that time, thermographic equipment has evolved significantly. Modern thermal imaging systems comprise technically advanced thermal cameras coupled to computers with sophisticated software solutions. The recorded images are now of good quality and may be further processed to obtain reliable information. Thermography can be applied as a diagnostic tool in oncology, allergic diseases, angiology, plastic surgery, rheumatology, and elsewhere. Contemporary thermal imaging must be per formed according to certain principles aimed at reliability and reproducibility of results.

CONCLUSIONS:

1. Thermography is a safe, accurate and, most importantly, a non-invasive diagnostic method in clinical medicine. 2. Ignoring any of the principles worked out by the European Association of Thermology leaves thermography open to error and thus reduces acceptance of this technique in medical diagnostics.

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Publication Types, MeSH Terms

Publication Types

- English Abstract
- Review

MeSH Terms

- Body Temperature/physiology

- Diabetic Neuropathies/diagnosis*
- Diagnosis, Computer-Assisted*
- Female
- Humans
- Hypersensitivity/diagnosis
- Infrared Rays/diagnostic use*
- Male
- Neoplasms/diagnosis*
- Sensitivity and Specificity
- Skin Pigmentation
- Skin Temperature/physiology
- Thermography/methods*
- Thermography/statistics & numerical data
- Thermography/trends

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