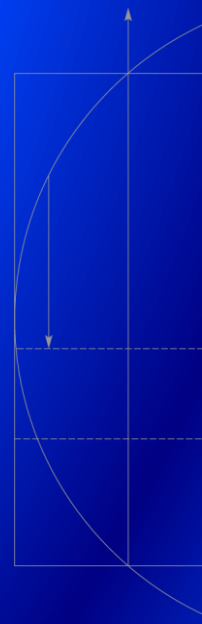
CLINICAL RELEVANCE-LIMITS AND POSSIBILITIES OF FLUORESCENCE LYMPHOGRAPHY OF THE LOWER EXTREMITIES



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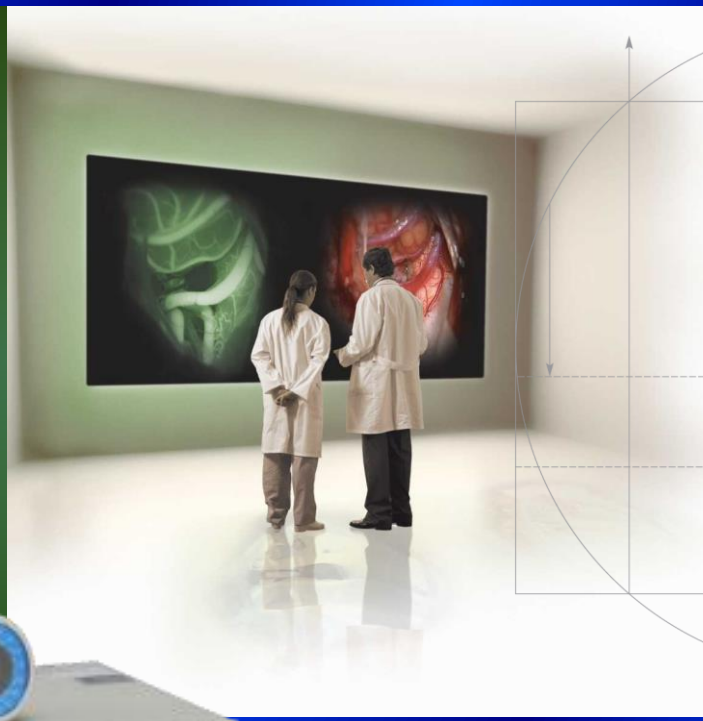
Lymphologische Wintertagung 2016 Walchsee

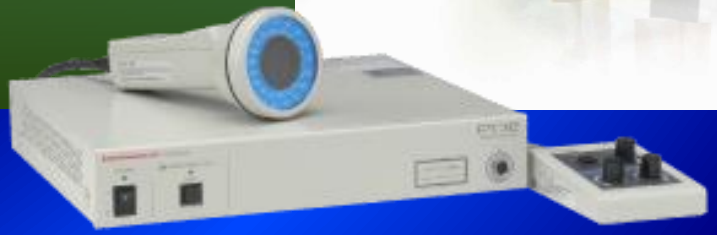
structure

- PDE
- ICG
- How to do it
- Practical use
- conclusion

FLUORESCENCE-MIKROLYMPHOGRAPHY

Photo Dynamic Eye(PDE)





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PDE – Photo Dynamic Eye

ICG - Fluorescence Angiography
Immediate Surgical Guidance and Quality Control

ICG - Fluorescence Angiographie
zur chirurgischen Leitung und Kontrolle bei Sentinel Operationen

Indocyaningreen

ICG-PULSION®

The final concentration after reconstitution with water for injections to the dry dye corresponds to 5mg/ml

For injection 0,1-0,2ml

pharmakokinetics

- After intravenous injection indocyanine green binds almost completely to globulins,
- preferentially to α1-lipoproteins, within 1-2 seconds. This complete binding within seconds means that uptake
- by the peripheral tissues, kidney or lung can be practically ruled out and is therefore negligible. In healthy
- volunteers indocyanine green cannot be detected in either urine or cerebrospinal fluid and it does not cross the
- placenta.(95%).

Indications

Indications for diagnostic:

Integrated cardiac, circulatory and liver function diagnostics and regulation of therapy

- heart minute volume

Ejection fraction

- circulating volume of blood
- pulmonary blood volume

Non-invasive diagnosis of liver function:

- excretoric liver function

Ophthalmologische Angiographie:

- for visualisation of the choroid vessels

technic

Maximum of absorption and emission of ICG are lying both near infrared,
Absorption in800 nm and emission for fluorescence measurement in 830 nm.

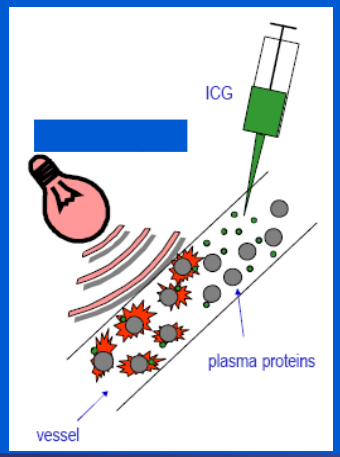
PDE – Principle

Near infrared source with ICG filter

PDE

Fluorescent dye

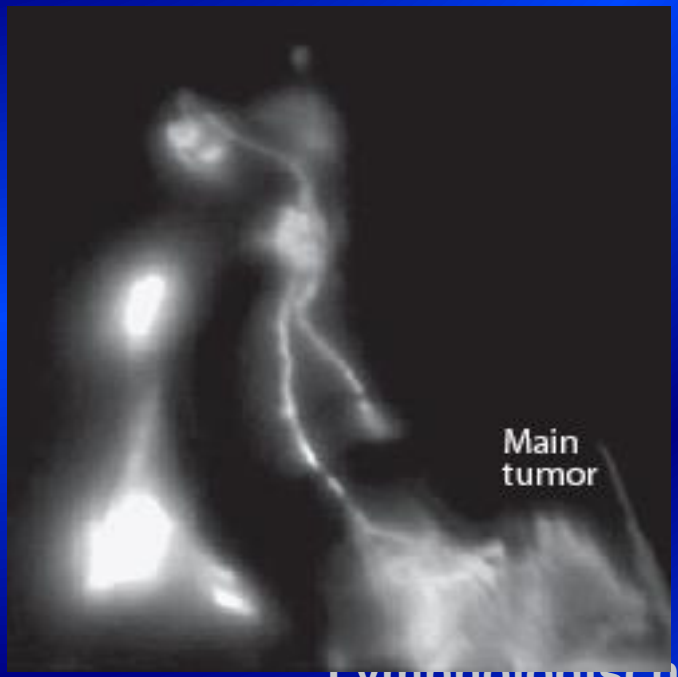
Indocyaningrün

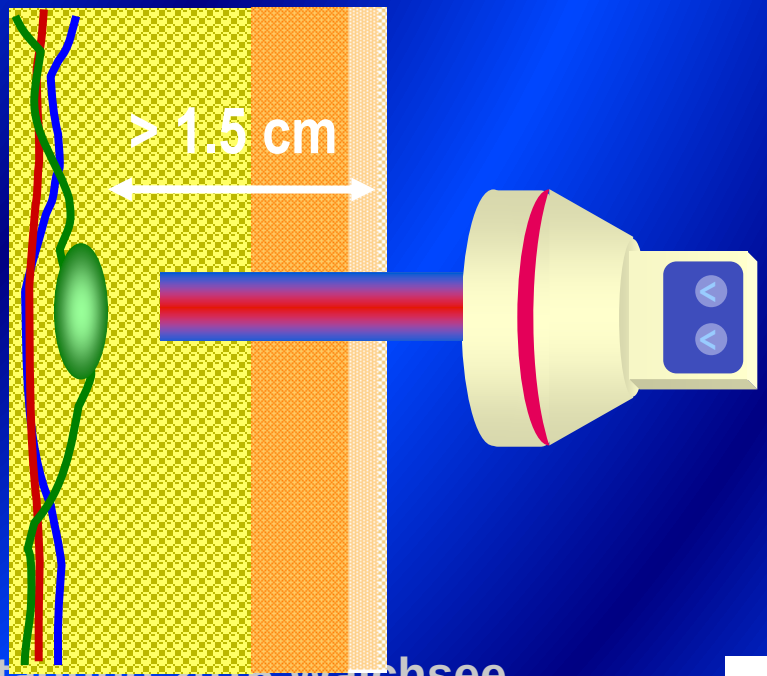


Real time visualisiation

Depth of visualization

The PDE can detect fluorescence at a max. of 1.5 cm from the surface.





Fluorescence pattern

- Dermal backflow
- Extended signal
- Dilated lymph vessels
- Dif´fused and scattered signals

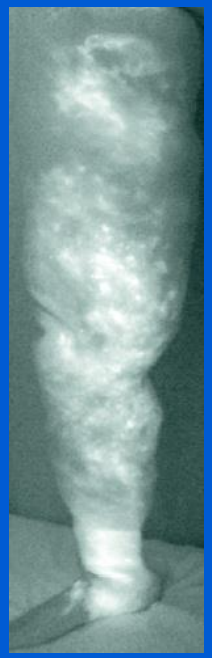
Clinical application

- Anatomy - lymphatic structures
- Physiology – functions
- Body reactions to lymphostasis
- Anastomoses
- Effluent in correlation to the stages
- Sentinel operations
- Therapy
- Effectiveness of existing therapies
- New treatment methods
- optimization

Clinical application: Lymphangiography

native

mit PDE



Easier to apply and cheaper

Clinical application: Visualization of lymph vessels

ICG is injected between the fingers or toes in order to visualize the lymph vessels

Clinical application: Lymph vessel transplantation

Fluroescent lymph vessels can be tranplanted and checked for patency

Clinical application: effectiveness of treatment

native

conclusion

- ICG Fluorescence technic with PDE a revolution in lymphology with different applications:
- In Sentinel – operations: detecting of lymph nodes
- Detection of superficial lymph vessels
- Function of lymphvessels
- Treatment ways
- Testing of treatment technics

but

ICG still is
„out of label“- use

for subcutaneous injection

Thank you for your attention