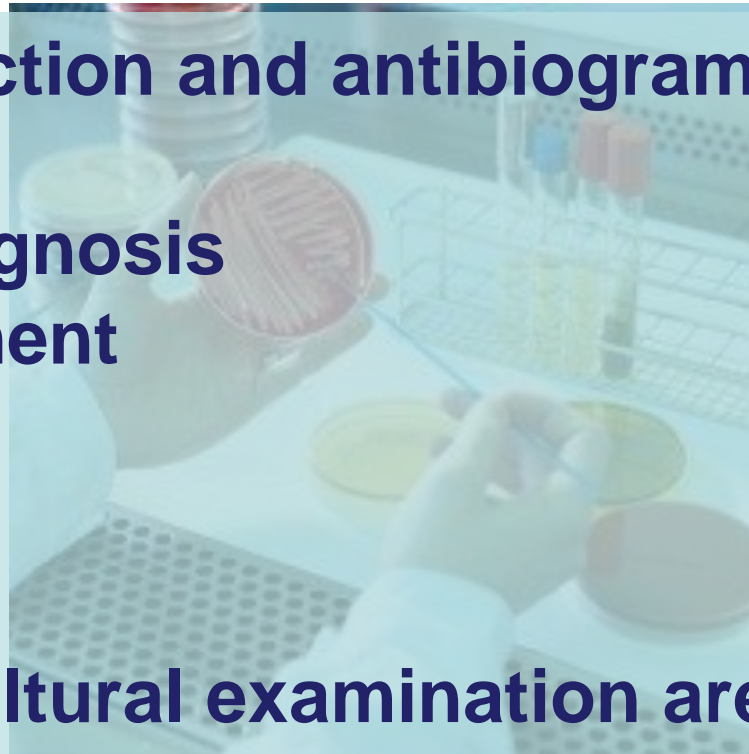


Implant- and Biofilm-Related Infections

- Biofilm-embedded bacteria may not be found through traditional approaches (swabs, aspiration, tissue cultures...)



Pathogen detection and antibiogram are needed to:

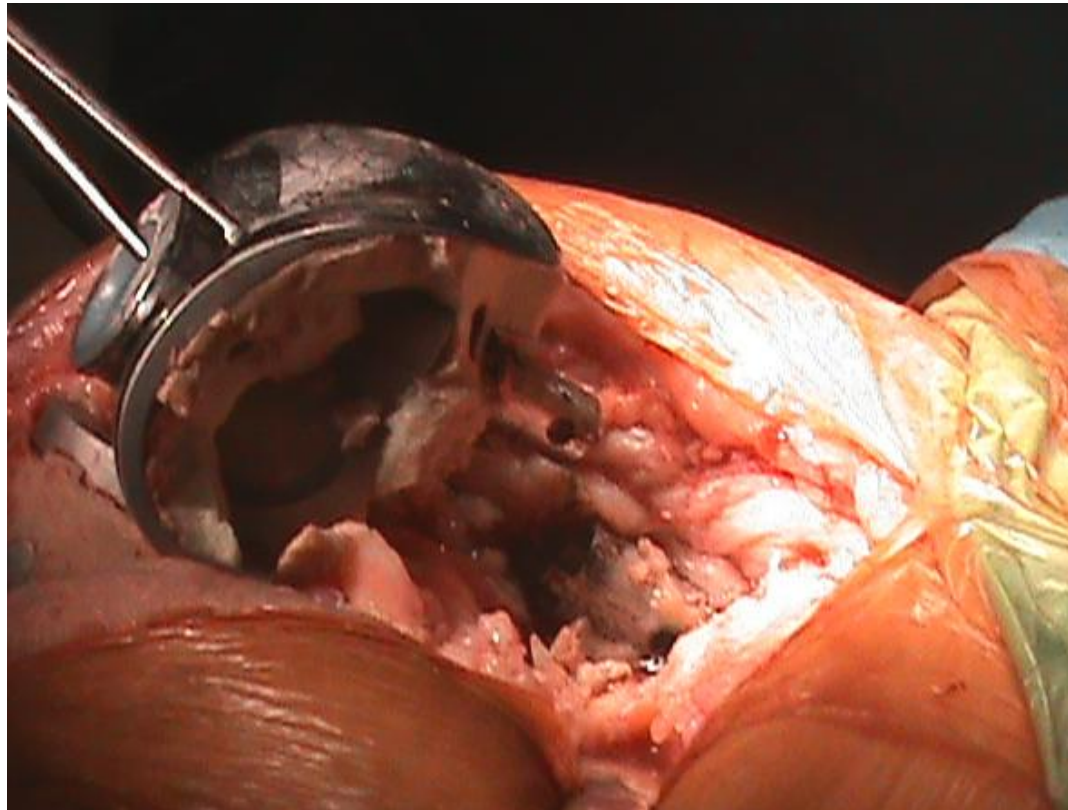
- 1. Confirm diagnosis**
- 2. Drive treatment**

But...

Approx 20% coltural examination are false negative !

Implant- and Biofilm-Related Infections

- Diagnosis of implant-related infections requires **dedicated microbiology** to disclose adhering bacteria

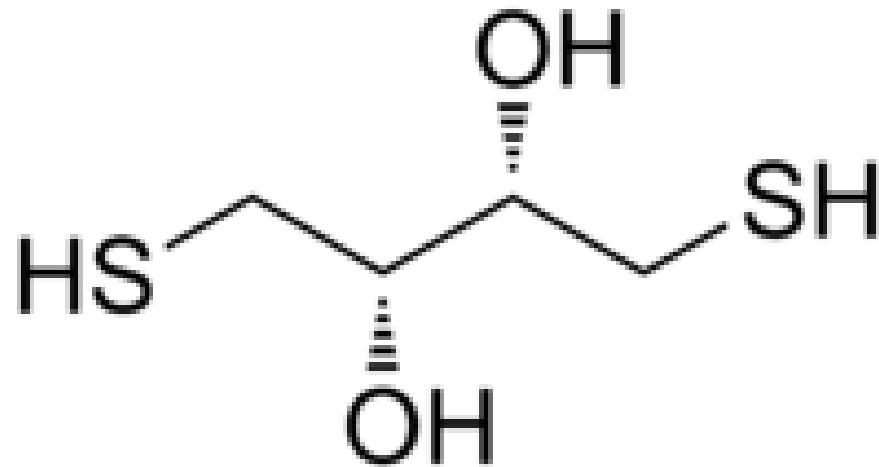


Implant- and Biofilm-Related Infections

- Throwing removed implants away = Ignoring forensic pieces in a crime scene



Implant- and Biofilm-Related Infections



Dithiothreitol (DTT)

Implant- and Biofilm-Related Infections

Clin Orthop Relat Res
DOI 10.1007/s11999-012-2415-3

Published online: 14 June 2012

Clinical Orthopaedics
and Related Research®
A Publication of The Association of Bone and Joint Surgeons®

BASIC RESEARCH

Does Dithiothreitol Improve Bacterial Prostheses? A Pilot Study

Lorenzo Drago PhD, Carlo Luca Romanò MD,
Roberto Mattina PhD, Valentina Signori BSc,
Elena De Vecchi MSc

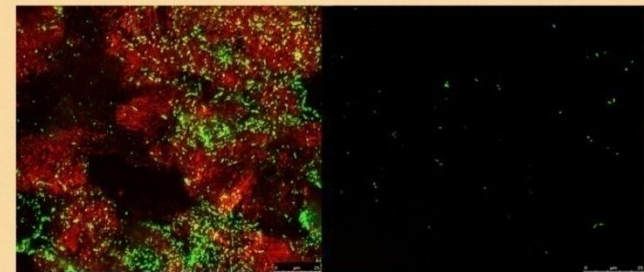
VOLUME 470 • NUMBER 10

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*Residual biofilm (red) and bacteria (green)
on implant before (left) and after (right)
treatment with dithiothreitol.*

A Publication of
The Association of Bone and Joint Surgeons®
Disseminating Orthopaedic Knowledge



Springer
11999 • ISSN 0009-921X
469 (6) 1523-1804 (2011)

Implant- and Biofilm-Related Infections

JOURNAL OF ORTHOPAEDIC RESEARCH

June 2013 DOI 10.1002/jor.22423

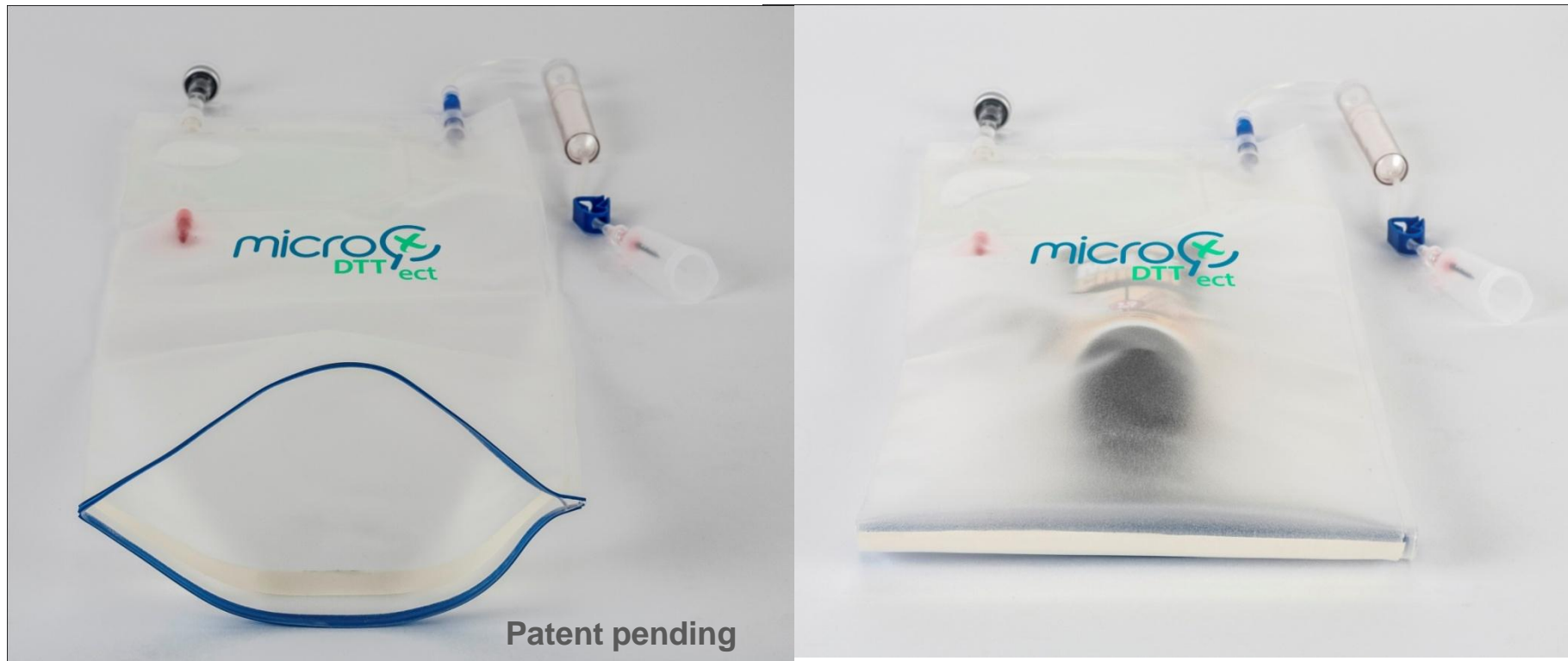
Use of Dithiothreitol to Improve the Diagnosis of Prosthetic Joint Infections

Results	Tissue cultures	Sonication	DTT
Sensitivity	71.4%	71.4%	85.7%
Specificity	76.5%	94.1%	94.1%
Positive predictive value	78.9%	93.7%	94.7%
Negative predictive value	68.4%	72.7%	84.2%

Implant- and Biofilm-Related Infections

microDTTect

Closed System for Intra-Operative Microbiological
Samples Retrieval for
Biofilm-Related Infection Detection



Implant- and Biofilm-Related Infections

Features

- Patented exclusive system
- First (and unique) completely closed system for retrieval and processing of failed implants and bioptic samples
- Ease-of-use
- Listed by the Italian Guidelines of Clinical Microbiologists (AMCLI)

Implant- and Biofilm-Related Infections

Why should a clinician use it ?

- Allows to process hardware and biopsies
- Improves diagnosis
- Improves treatment
- Medico-legal aspects
- Easy to use
- Easy to implement in any hospital
- Follows recognized guidelines

Implant- and Biofilm-Related Infections

Targets

- Orthopaedic surgeons
- Trauma surgeons
- Microbiologists

- Cardio-vascular surgeons
- Neurosurgeons
- ...

Thank you and...

Milano Biofilm Meeting 2015

Implantables and Infection Control: a Promising Future ?

Biofilms and Bacteria, Host and Nutrition, Biomaterials and Implants

19th - 21th June 2015

"The Hub Hotel"

Via privata Polonia 10 - Milan - Italy

18.00

Aperitive workshop

"MicroDTTect" Samples Transport and Processing System [4I]

E. De Vecchi - L. Drago - S. Giannini

Arrivederci !