

Male, 42yo

- Farmer
- HIV+
- THA for bilat. femoral head necrosis

8/2011



4/2012



Het Centrum voor Infectieziekten en de afdeling Orthopedie organiseren op 14 februari 2018 een regionale refereeravond

Update Prosthetic Joint Infections

Hip pain since operation

- CRP normal
- No fever

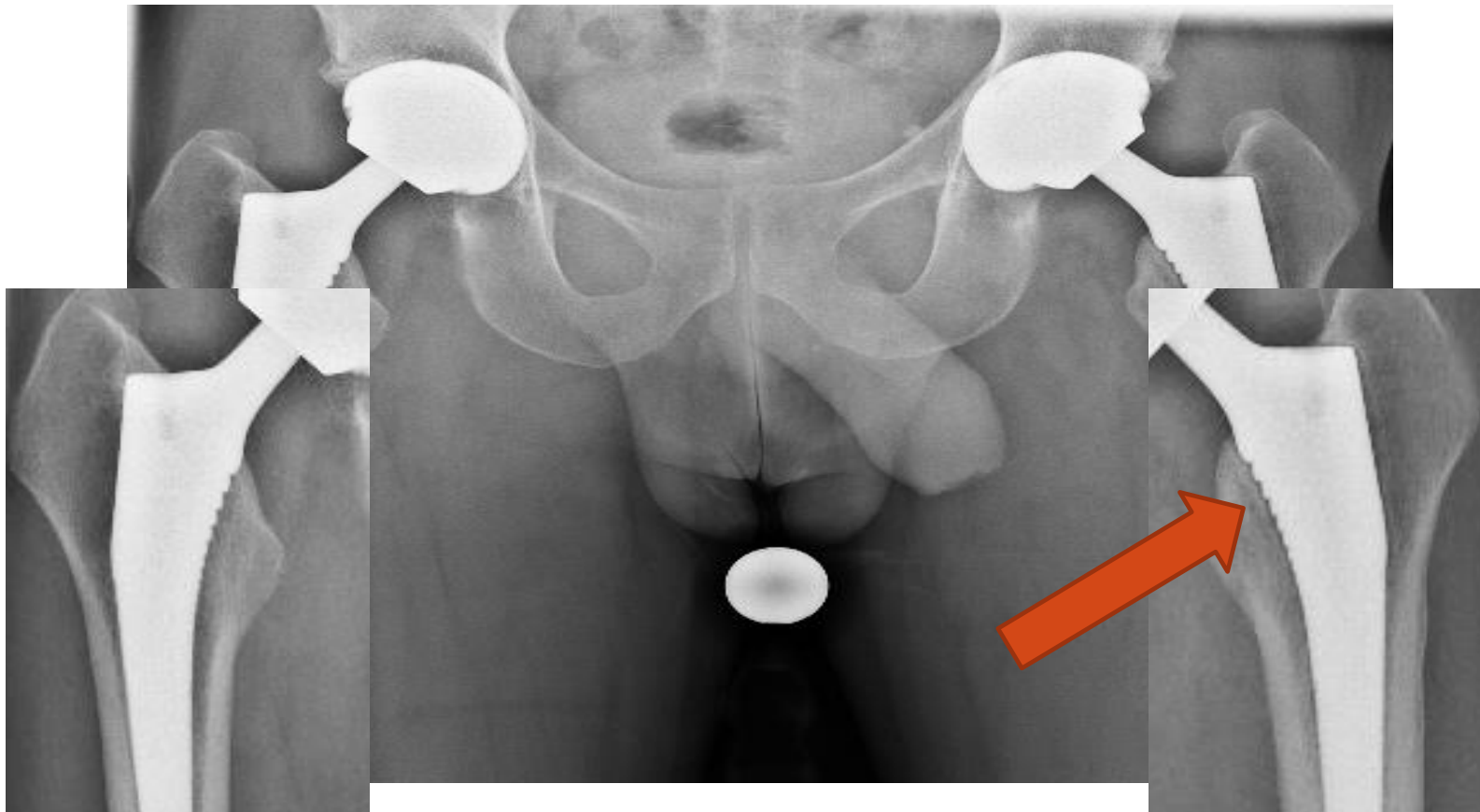


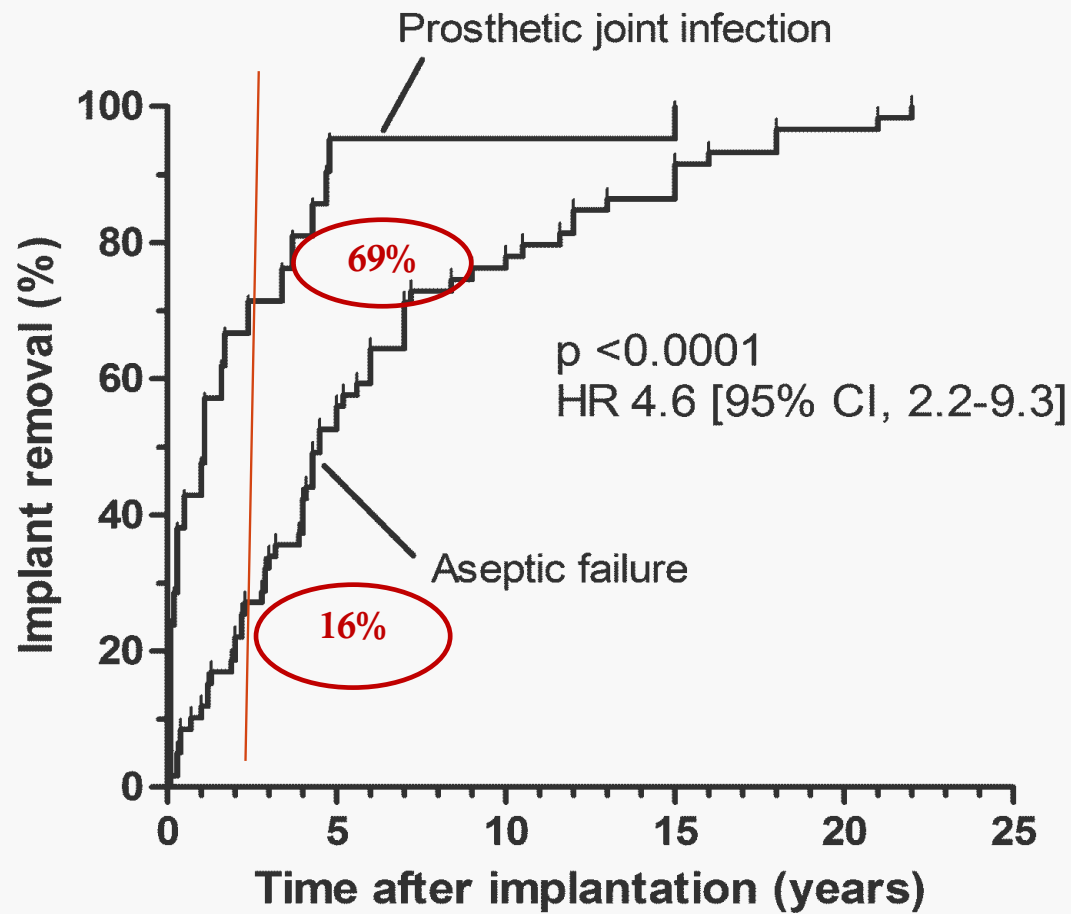
What would you do?

Cave: MSIS vs Zimmerli criteria!!!

Loosening

9 months after operation



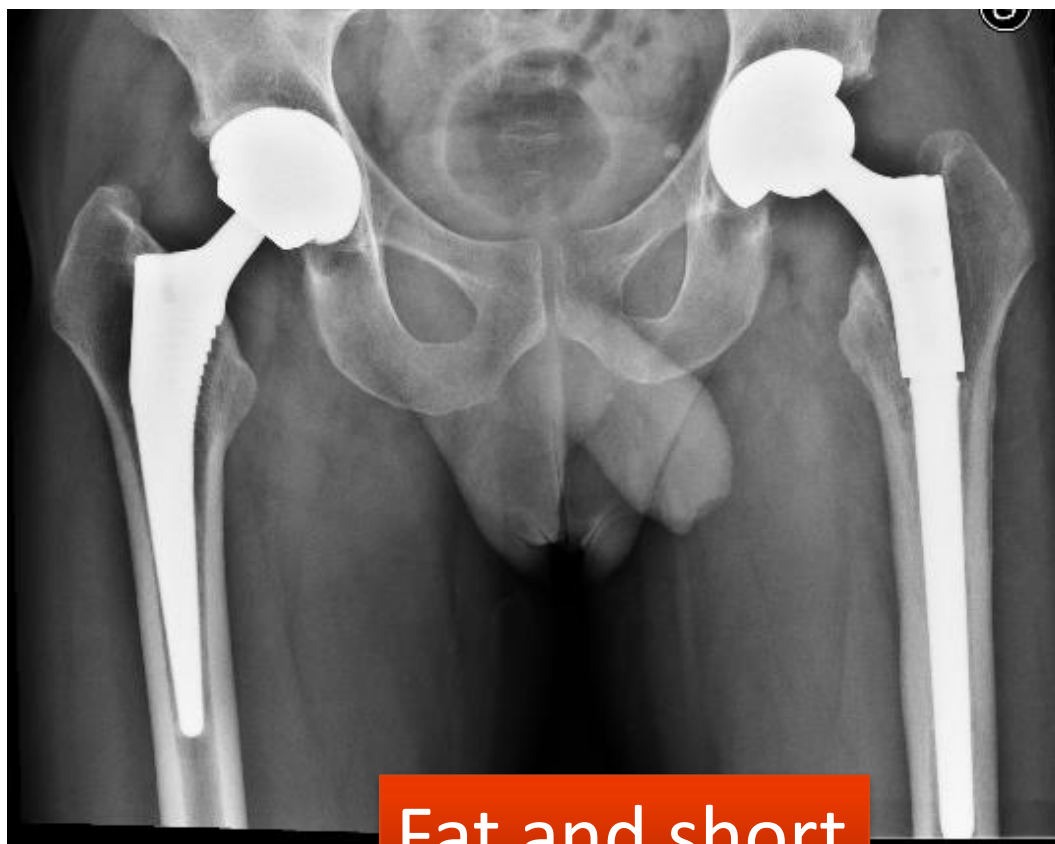


No. at risk					
Aseptic failure	62	28	14	8	4
Prosthetic joint infection	24	2	2	1	0

What would you do?

- Diagnostics?
 - ~~Imaging~~
 - Tapping
 - Staph. epidermidis (rifampin sens.)
 - Surgery
 - Débridement and retention
 - 1-step exchange
 - 2-step exchange

1-step exchange



Fat and short

At 18 months

- No pain
- Works a 100%
- CRP <10



1-st
cl
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Algorithm

Patient-adapted treatment of an infected TJA: a Swiss Algorithm

Olivier Borens
Septic Surgery Unit
University Hospital of Lausanne



Infections do happen

No Gold standard!

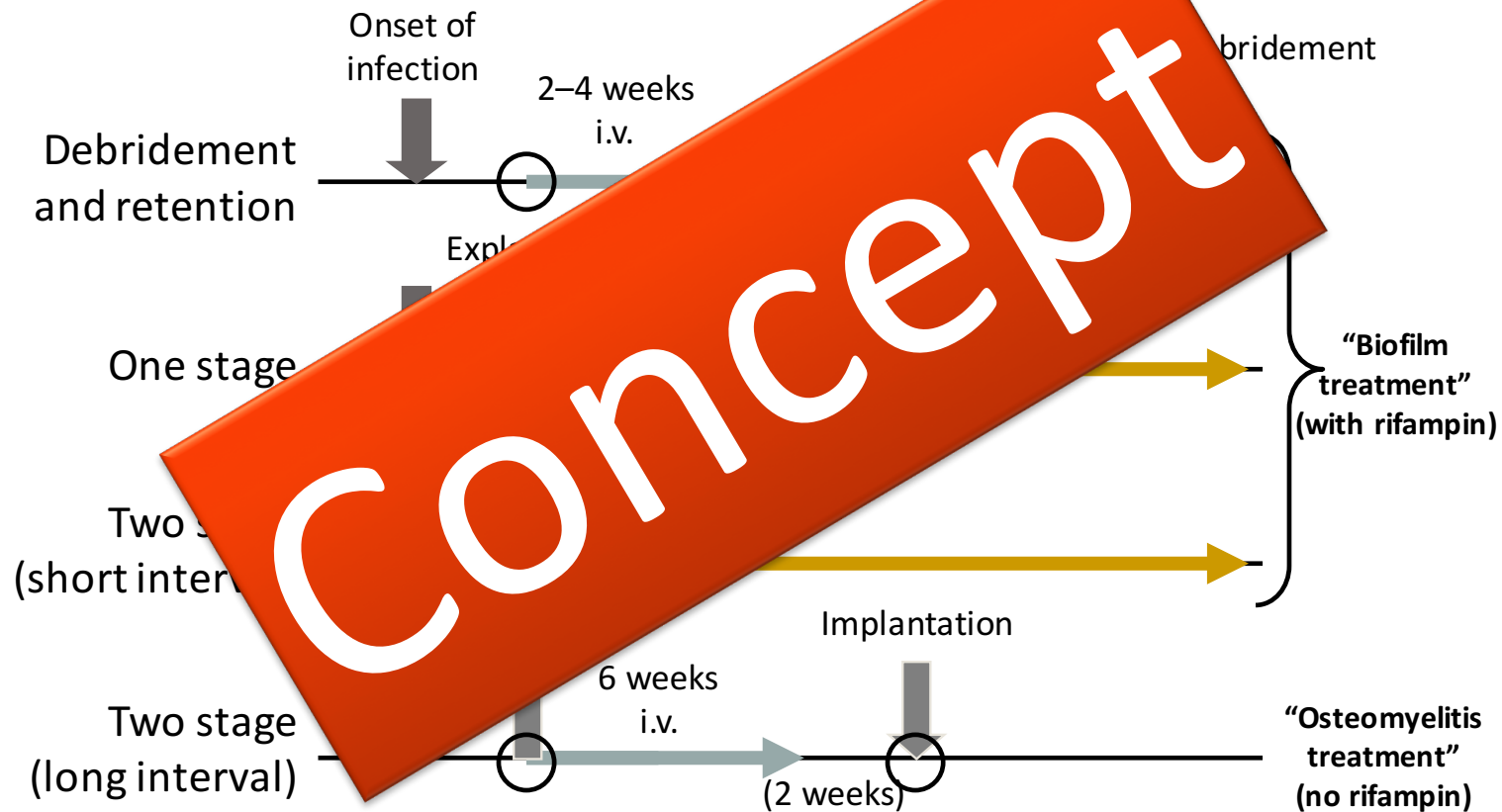


Treatment options for infected TJA

- Medical
- Surgical
 - Debridement & Irrigation
 - 1-step exchange
 - 2-step exchange
 - Resection arthroplasty/
arthrodesis
 - Amputation



Treatment of infected TJA in 2018



Concept based on

- Team work
- Definition
- Classification
- Diagnostics
- Treatment adapted to case



Zimmerli NEJM 2004, Borens Rev Med 2009, Trampuz Rev Med 2010

Three types of implant infection

Time	0–2 months	3–24 months	Any time
Type	Early postoperative	Delayed (low grade)	Late
Route	Perioperative		Haematogenous
Signs	Fever, effusion, warmth, drainage	Persistent pain, device loosening, fistula	Acute or subacute
Cause	<i>S. aureus</i> Streptococci Enterococci	Coagulase-negative staphylococci <i>C. (P.) acnes</i>	<i>S. aureus</i> <i>E. coli</i>

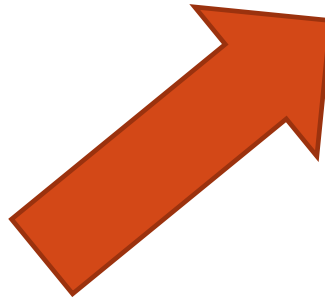
How to choose the good option?

How long after operation?

- Early
- Delayed
- Late

Since when symptoms?

- Short duration
- Long duration



Classification **duration** of infection

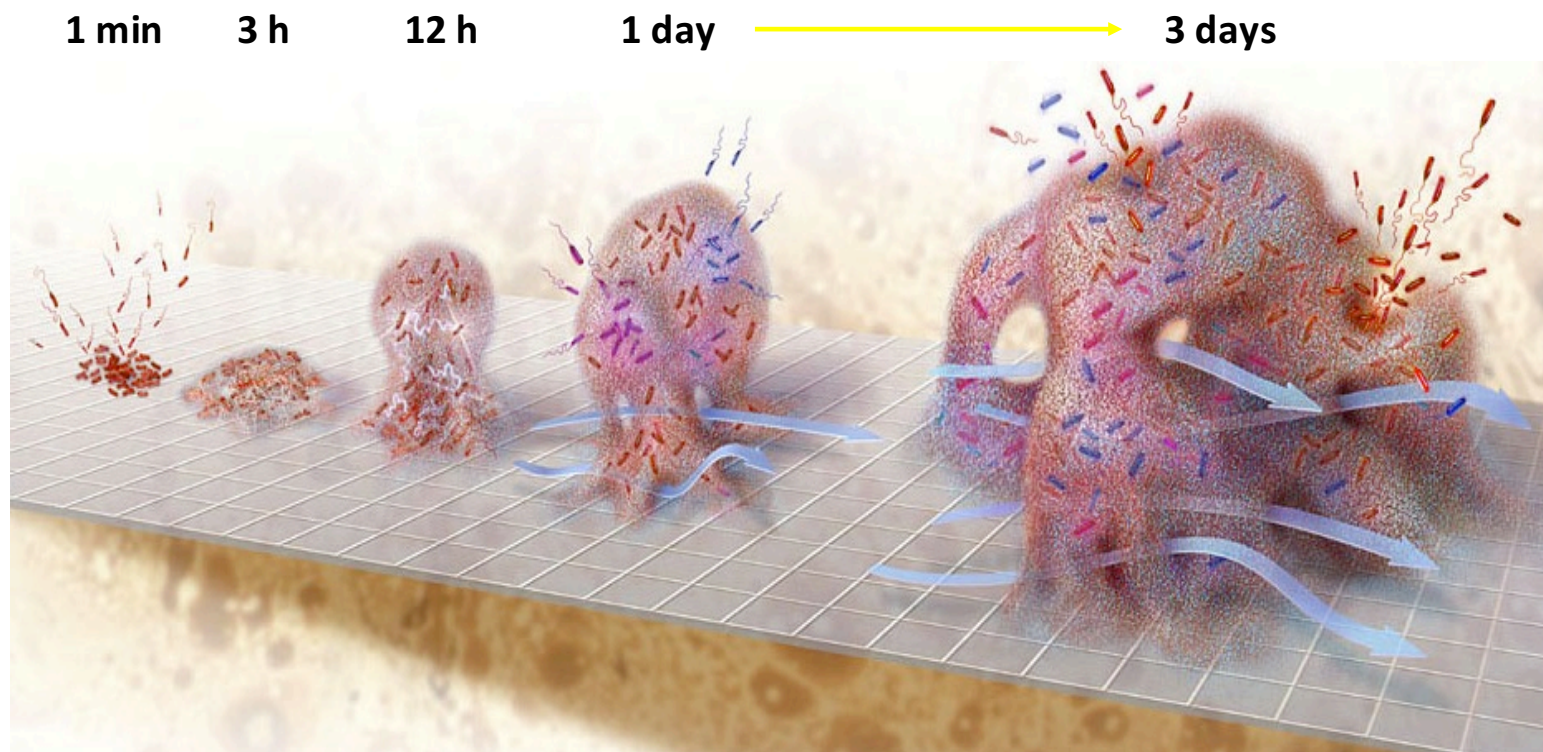
“Time between start
and pre

Time is running and
biofilm is coming

Heppert

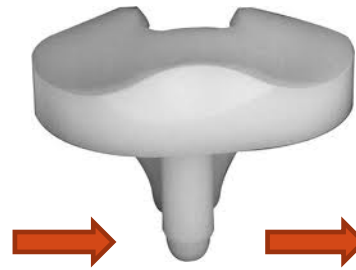
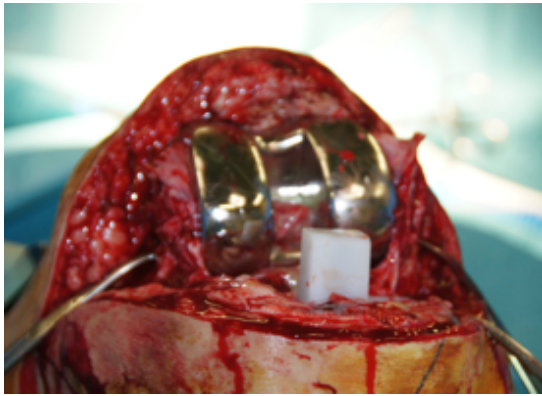
- Long duration
 - Delayed or late infections

Biofilm: The race for the surface

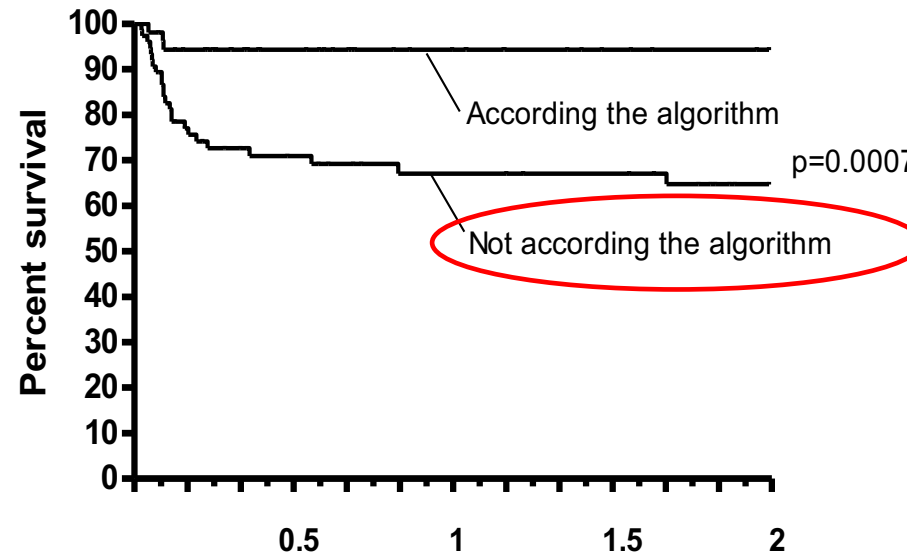


Gristina AG. Biomaterial-centered infection: microbial adhesion versus tissue integration. *Science* 1987;237:1588-95

Debridement, irrigation & changing of PE (DAIR)



Survival of Debridement and Retention: Survival proportions



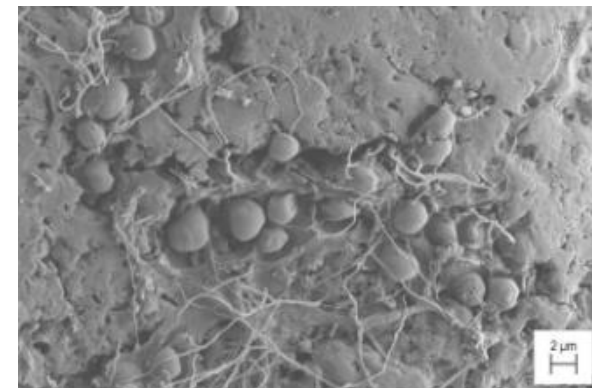
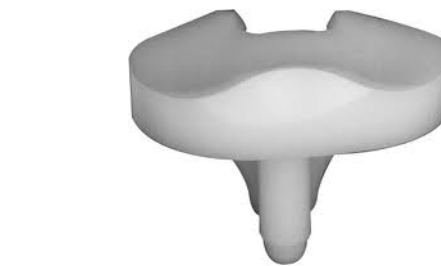
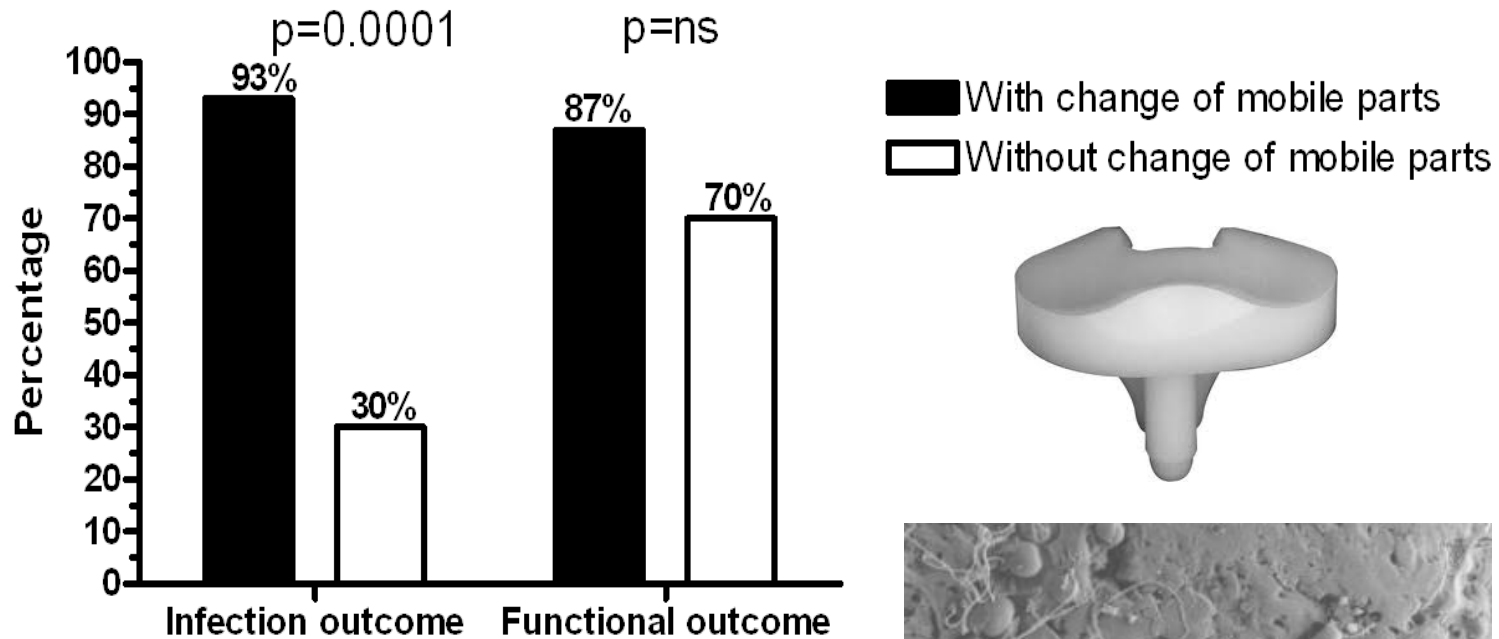
No. at risk

		0.5	1	1.5	2
According the algorithm	54	38	28	21	17
Not according the algorithm	76	41	34	31	23

Of 76 cases not treated according the algorithm

- 30 cases mobile parts were not changed during surgery
- 38 cases soft tissue was not considered as good
- 8 cases symptoms lasted more than 21 days,

Change the PE!



Polyethylene Insert Exchange Is Crucial in Debridement for Acute Periprosthetic Infections following Total Knee Arthroplasty

Chaofan Zhang, MBBS^{1,2} Chun Hoi Yan, MBBS, FRCS(Edin), FHKCOS, FHKAM(Ortho)^{1,3}
Ping Keung Chan, MBBS, FRCS(Edin), FHKCOS, FHKAM(Ortho)¹
Fu Yuen Ng, MBBS, FRCS(Edin), FHKCOS, FHKAM(Ortho)¹
Kwong Yuen Chiu, MBBS, FRCS(Edin), FHKCOS, FHKAM(Ortho)¹

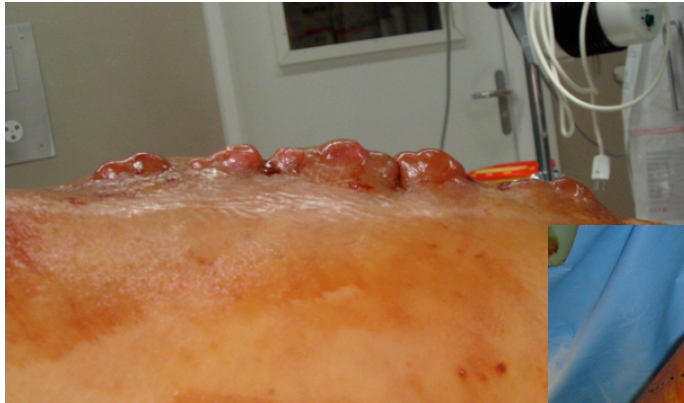
1-step exchange

- Preop. known germ
- Easy to treat germ (Rifampicin sensitive)
- Local and systemic AB
- Good soft tissues (no draining sinus)
- « Tumor surgery »



Success rate 85%

Soft tissues



2-step exchange



Short interval
Long interval



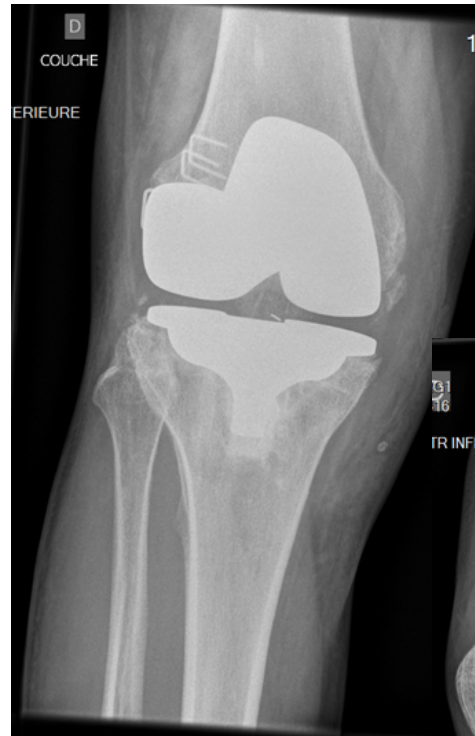
Spacer

- Articulated spacer
 - better mobility
 - similar complication rates
- Non articulated spacer
 - less complications
 - no difference after reimplantation if not too long interval



Male, 48y

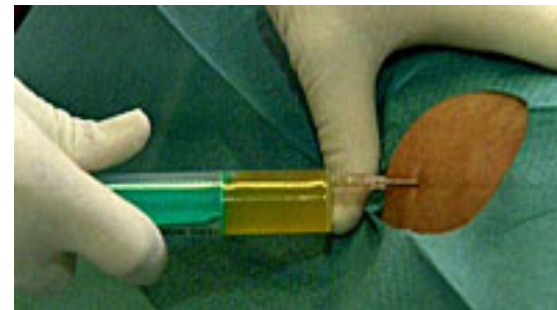
- ACL rupture
- Sec. arthritis
- TKR in May 2013



- Initially everything is OK...

Follow-up?

- 3m post OP: new pain & stiffness
- arthrotomy for mobilisation
- 3m later joint aspiration → staph. capitis
- AB “cure” for 3m (Co-Amoxicilline p.o.)



After 1y still pain & red scar

- CRP 10
- Joint aspiration:
 - no germs
 - 50 G/l Lc, 95% PN
- Normal x-ray

What now?

Two-stage exchange

- Prosthesis NOT loose
- Synovectomy
- Articulated spacer
- Sonication: same staph. capitis

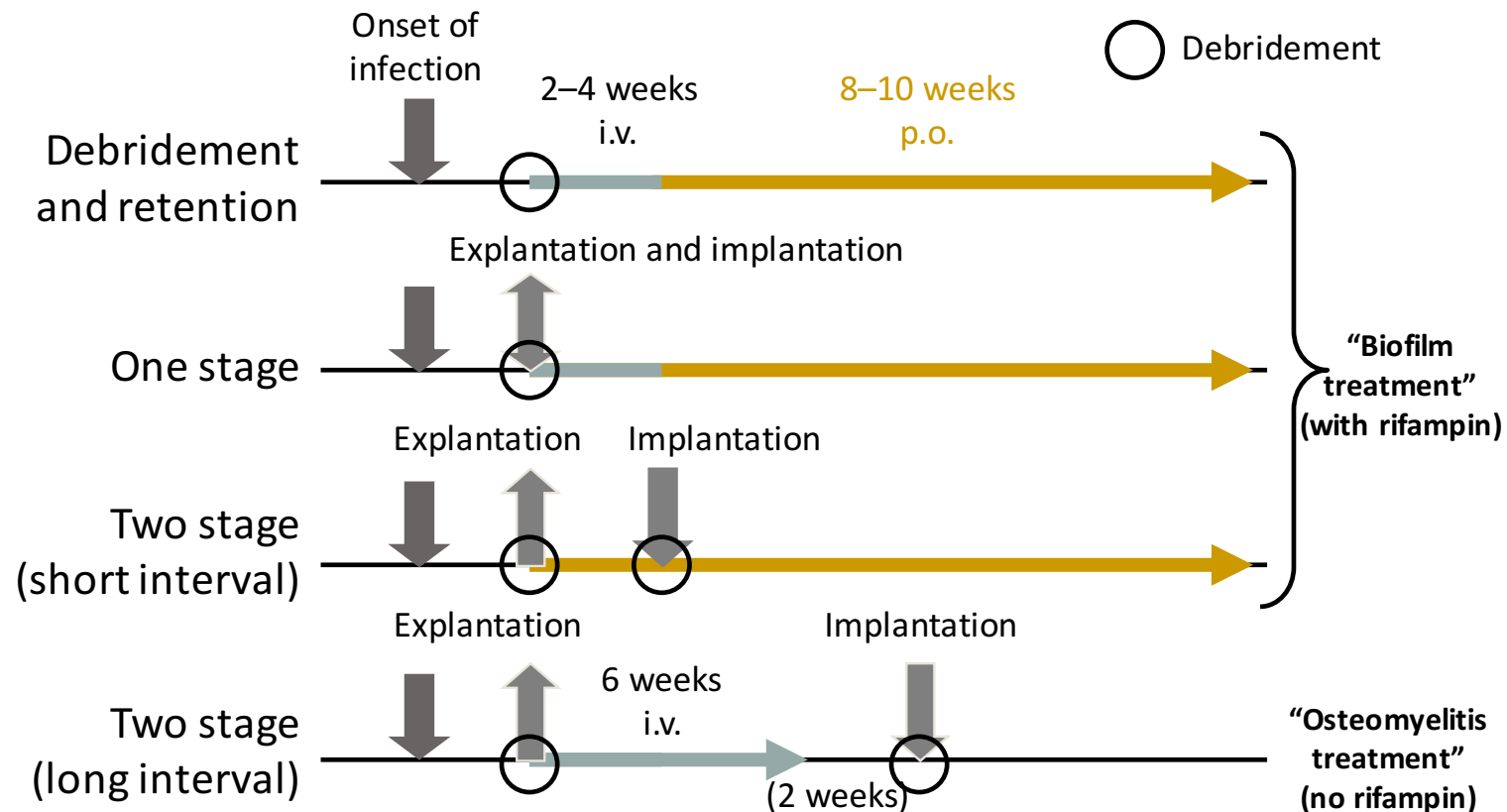


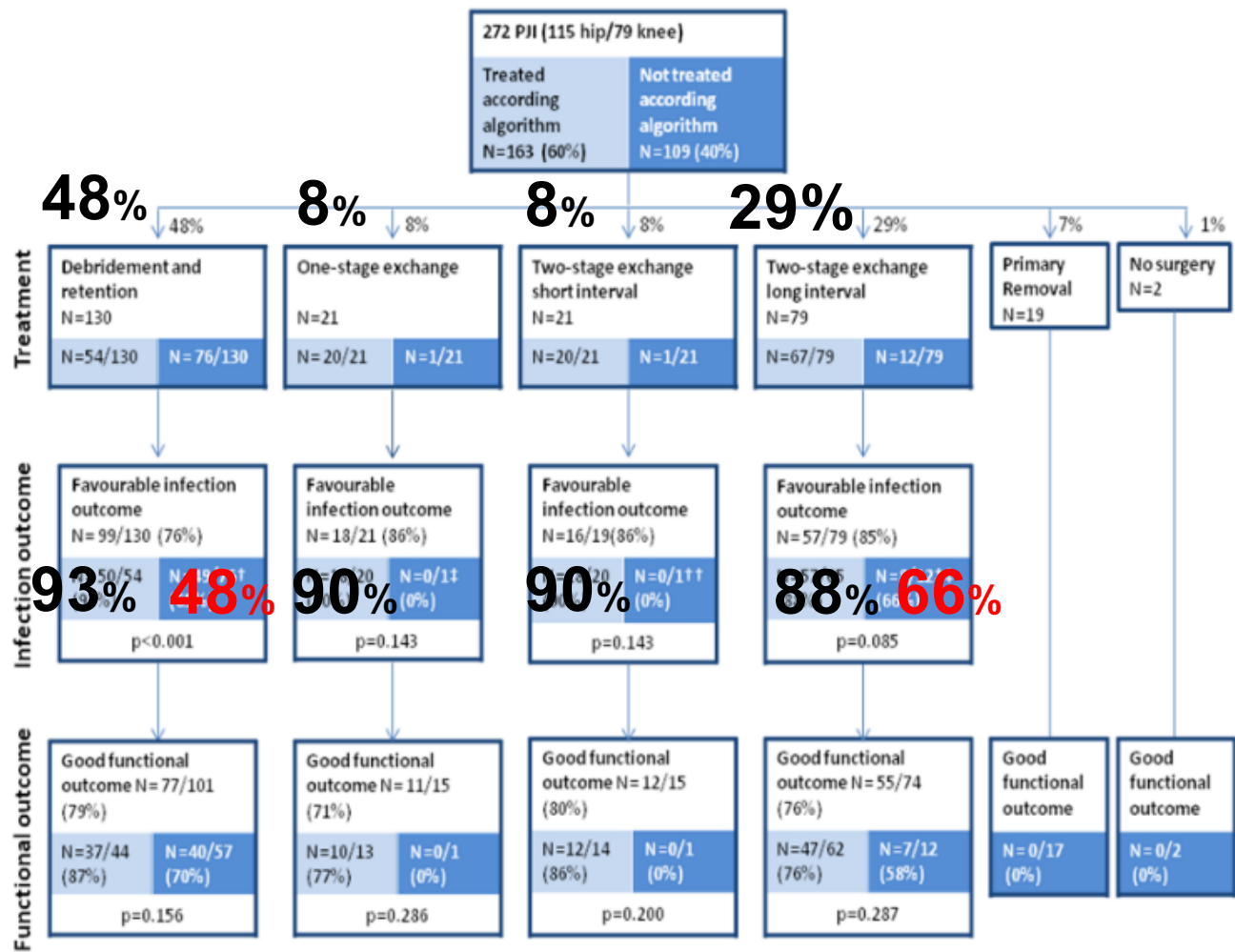
Short intervall (3 weeks)

- Soft tissues OK
- CRP normal
- 2nd debridement
- TKR
- 3m follow-up:
F/E 100-0-0°
pain free



Patient adapted treatment of infected TJA in 2018





† Of 76 cases not treated according the algorithm, in 30 cases mobile parts were not changed during surgery, in 38 cases soft tissue was not considered as good, and in 8 cases symptoms lasted more than 21 days, in 8 cases ‡ In this patient a fistula was present. †† Difficult to treat organism (Enterococcus spp.) ‡‡ in 11 cases symptoms lasted <21 days, in one patient only local antibiotics were administered.

Thank you for your attention!



olivier.borens@chuv.ch