La protesi d'anca conservativa nel paziente giovane

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O.E.I. - Genova (P.O. Voltri)

Genova, 12.10.2013

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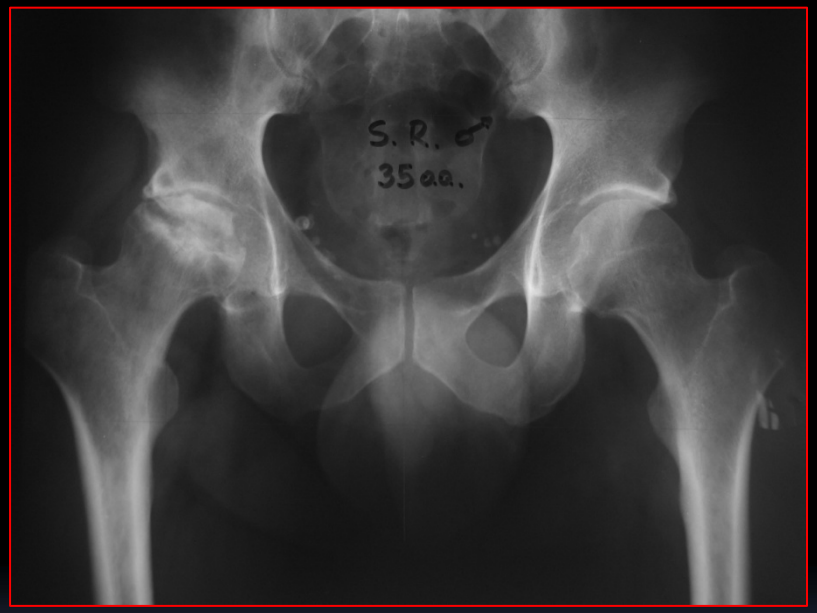
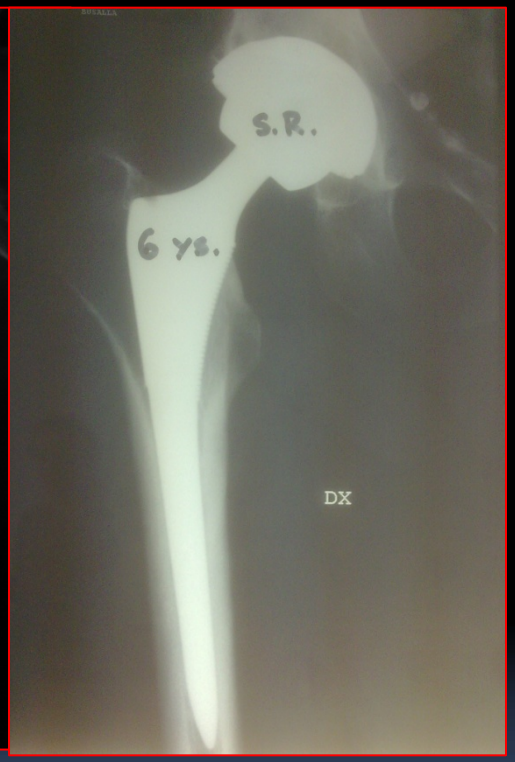
… il passato



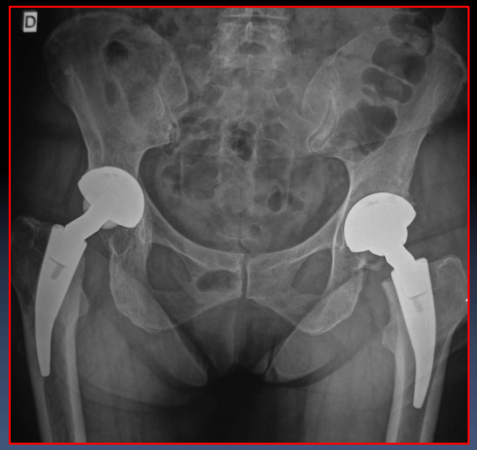


- ✓ Pz. giovane, attivo
- ✓ AR
- ✓ Dorr type A

Quale tipo di protesi d'anca impiantare ?

PROTESI TOTALE NON CEM. MIS

- ✓ Pazienti < 70 aa.
- ✓ Buona qualità dell'osso
- ✓ C.I. > 60



... il presente ...

(MIS/TSS)

Quale tipo di protesi d'anca impiantare ?

Strategia chirurgica - Protesi non cem. MIS

Vantaggi

- ✓ **Risparmio bone stock (fit without fill)**

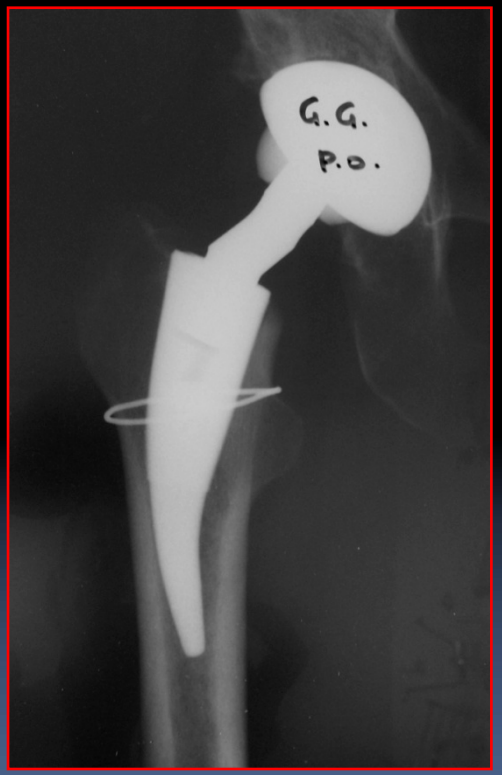
- ✓ **Maggior patrimonio osseo in caso di revisione**

Quale tipo di protesi d'anca impiantare ?

Strategia chirurgica - Protesi non cem. MIS

Svantaggi

- ✓ Tecnica chirurgica complessa
- ✓ Maggior rischio di frattura intraoperatoria
- ✓ Costo economico più elevato (design e tecnologia dei biomateriali)

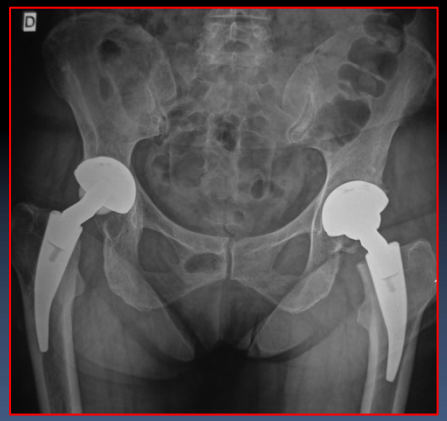


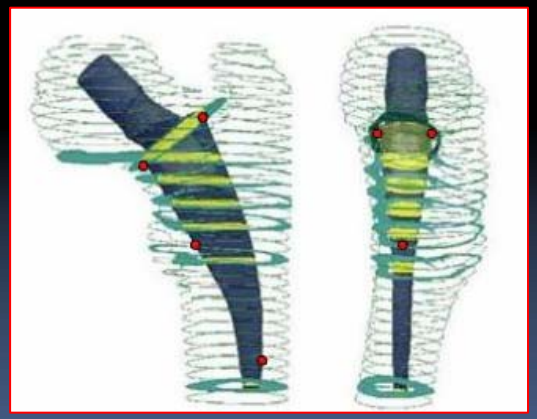
"!! hard & soft TSS !!"

- **CB. Hingh :** *"J. Bone Joint Surgery" 2007; 89 (B)*
- **A. Camera et al:** *"Minerva ortopedica e Traumatologica" 2011; 62-4*
- **L. Keppler:** *"C.A.C." march, 2011 - VuMedi*
- **E. Mc Pherson:** *"M.T.J.R." november, 2010 - VuMedi*

Stelo METHA

- **Filosofia vincente**
- **Strumentario essenziale**





"If the goal of a tapered stem is to load the proximal femur... why does one need a long stem?" **- A.V.Lombardi:** ***"I.C.J.R." january, 2011 - VuMedi***

Filosofia vincente

LA PROTESI BIODINAMICA TOTALE D'ANCA
Studio preoperatorio radiografico

F. PIPINO, L. MOLFETTA
Università di Bari
Istituto di Clinica Ortopedica (Direttore: Prof. F. Pipino)

Total biodynamic hip prosthesis. Preoperative X-ray study

The X-ray preoperative plan required for correct implantation of a total biodynamical hip prosthesis is described. This study is indispensable for the choice of prosthesis dimensions, for the evaluation of the heterometry of the lower extremities and for study of the coincidence of external finish and medial curvature. [Min Ort Traum 1988;39:809-12].

Key words: **Hip - Prosthesis - X-ray.**

Premessa

La protesi biodinamica totale d'anca ha introdotto nella chirurgia protesica dell'anca due concetti innovativi:

1) la coppa biequatoriale (1978);
2) il rispetto del collo femorale (1983).

Il principio ispiratore di tali concetti è il massimo rispetto possibile dell'anatomia e della fisiologia dell'anca.

colletto ellittico ricerca l'appoggio sull'intera corticale con direzione perpendicolare all'asse del collo.

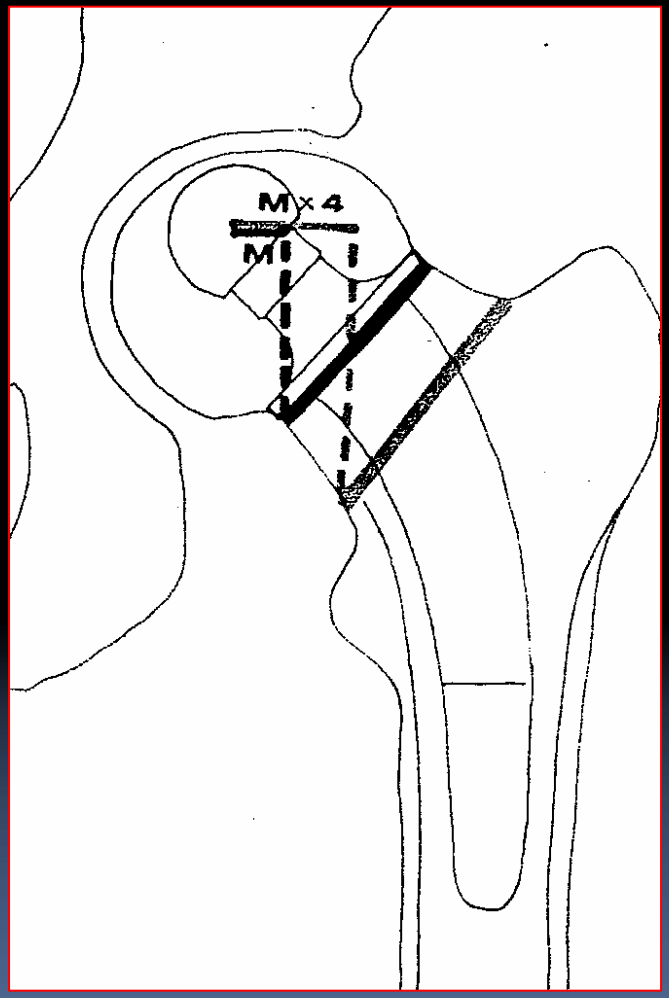
Il massimo rispetto possibile dell'anca comporta la necessità di un adattamento dei componenti protesici ai vari parametri morfometrici dell'anca, tenendo presente che la protesi biodinamica sostituisce unicamente la testa femorale e la cartilagine della facies lunata acetabolare.

In particolare occorre ricercare il riequilibrio di eventuali eterometrie ed il giusto posizionamento del centro di rotazione della protesi in rapporto al centro di rotazione dell'anca stessa e della controlaterale.

Materiale e metodo

È quindi necessario uno studio radiografico preoperatorio dei pazienti da sottoporre ad artroprotesi, per:

1) stabilire le dimensioni dei compo-



Filosofia vincente

Why resect the neck?

Freeman MA.

J Bone Joint Surg Br. 1986 May;68(3):346-9.

☐ Femoral neck retention in hip arthroplasty. A cadaver study of mechanical effects.

127. Carlson L, Albrektsson B, **Freeman MA.**

Acta Orthop Scand. 1988 Feb;59(1):6-8.

Filosofia vincente

F. PIPINO, L. MOLFETTA

LA CONSERVAZIONE DEL COLLO FEMORALE
NELLE PROTESI TOTALI D'ANCA

Estratto da:
Giornale Italiano di Ortopedia e Traumatologia
Vol. XIX - Fascicolo I - Marzo 1993

Filosofia vincente

Am J Orthop (Belle Mead NJ). 1995 Oct;24(10):766-70.

Effect of neck resection on torsional stability of cementless total hip replacement.

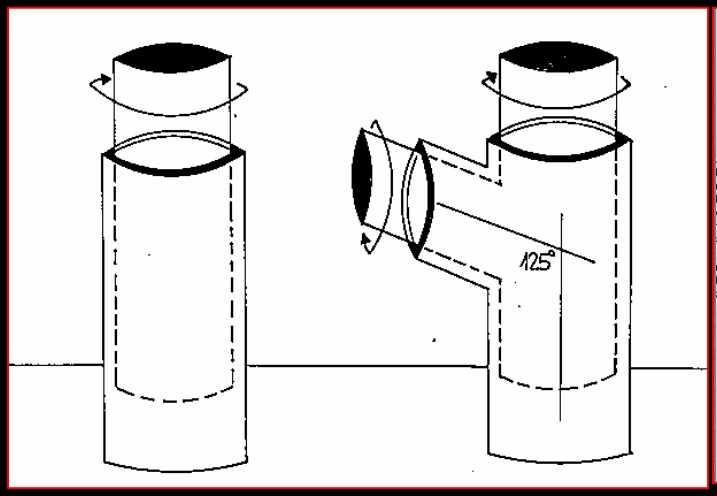
Whiteside LA, White SE, McCarthy DS.

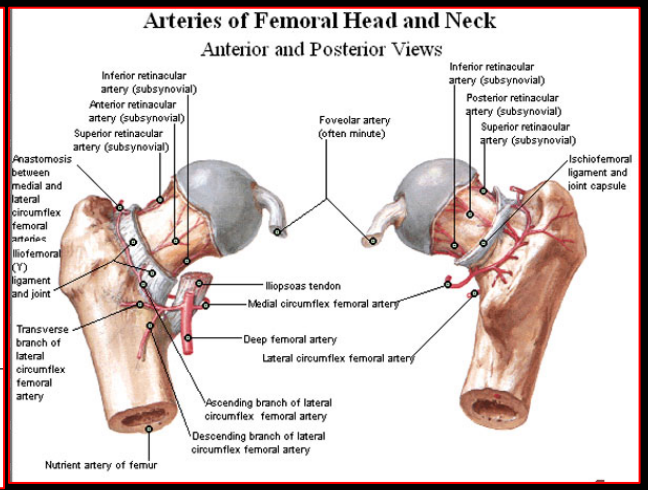
Biomechanical Research Laboratory, St. Louis, Missouri, USA.

Abstract

Loosening of the femoral component in total hip arthroplasty commonly results from inadequate resistance to torsional loads. We evaluated 20 adult human cadaver femora to determine the effect of different neck-resection levels on torsional resistance of the femoral component. All specimens were prepared for fixation with the Impact modular total hip replacement. Each femoral diaphysis was overreamed 2 mm to achieve only proximal fixation. The specimens were then divided into groups of five and implants were inserted with the precision press-fit technique. Each specimen was loaded in an Instron stress-testing device. A linearly variable differential transducer was then attached to the specimen to measure micromotion at the medial interface between the implant and bone. Each specimen was loaded until failure occurred. When all of the neck was preserved, torsional load to failure was significantly better than in the 50%, 15%, and 0% neck-preservation specimens. At a 20 N-m torsional load, the 100% and 50% neck preservation specimens had similar micromotion, but the 15% and 0% specimens had gross motion and a large standard deviation at this load level. Without distal fixation, the femoral component is highly dependent on proximal geometry for resistance to torsional loading. Preserving the femoral neck provides an effective means of resistance. Maintaining the entire femoral neck most effectively reduces miromotion at low loads, but maintaining the midshaft area of the femoral neck appears to most effectively control micromotion at higher torsional loads. Resection below the midshaft of the neck markedly decreases the torsional load-bearing capacity of the proximal femur.

“Teoria dei cilindri sghembi”





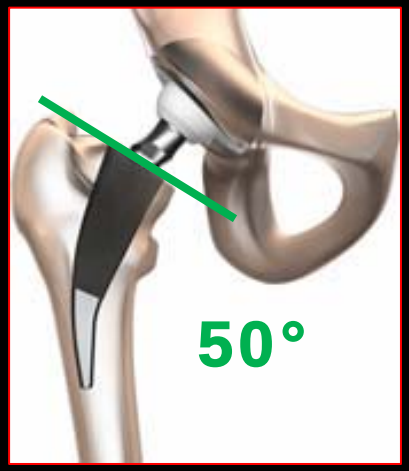
- **Impianto più fisiologico (> bone stock)**
- **Stabilità primaria (fit without fill)**

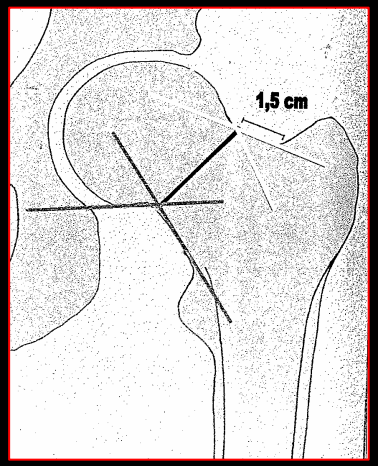
Bone ingrowth & bone remodelling

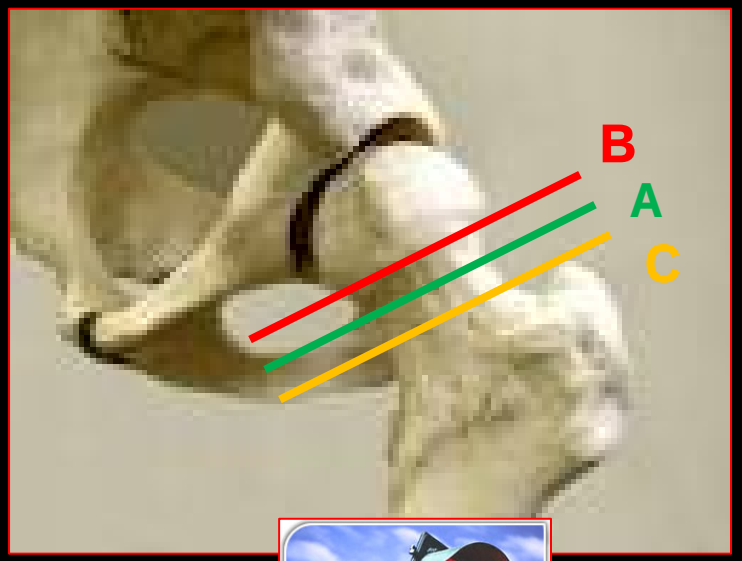
(!! SURVIVERSHIP !!)

Strumentario essenziale

N. di T.







Osteotomia del collo

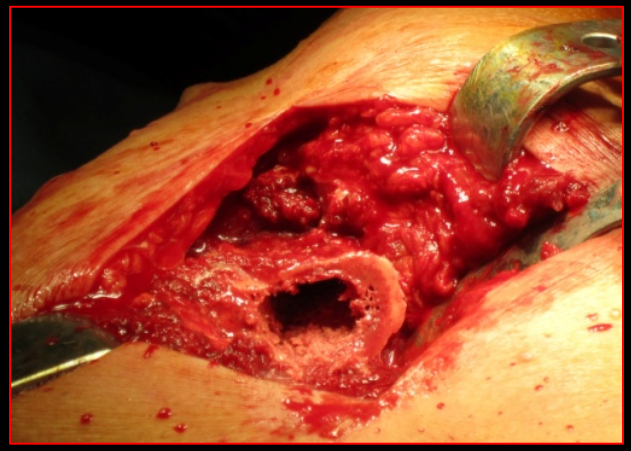
A: 6-8 cm dalla regione sottocapitata

B: sottocapitata. Rischio di dismetria e impingment

C: 1,5-2 cm dalla regione sottocapitata

E. Mc Pherson: *"M.T.J.R." november, 2010 - VuMedi*

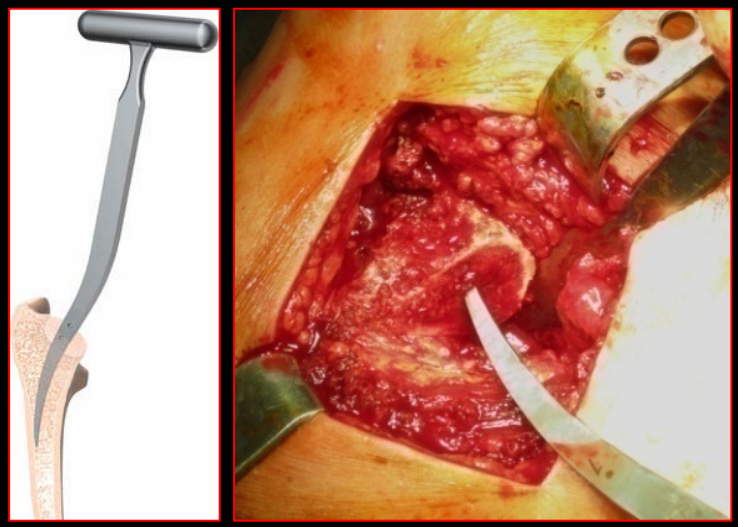
N. di T.

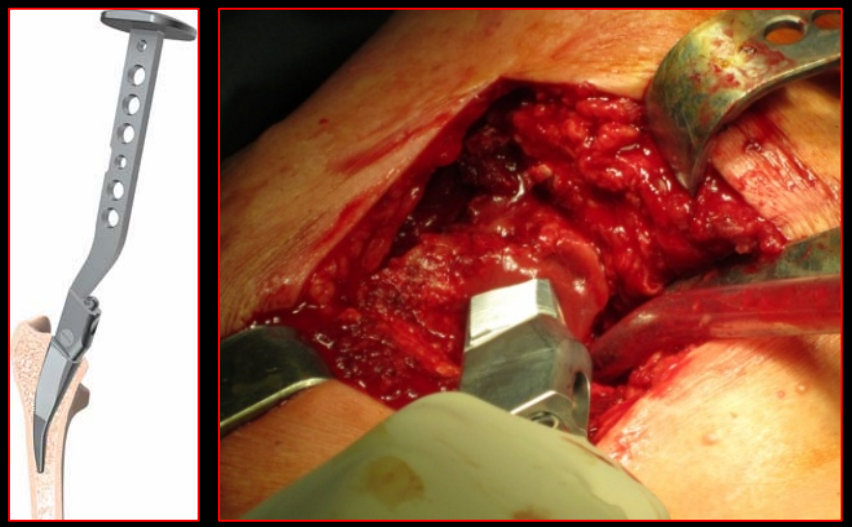


Preparazione del canale femorale

ottimizzazione del bone stock con preservazione della spongiosa metaepifisaria (orletto di spongiosa):
"fit whithout fill" **(R.H. Wittenberg - F. Falez)**

N. di T.

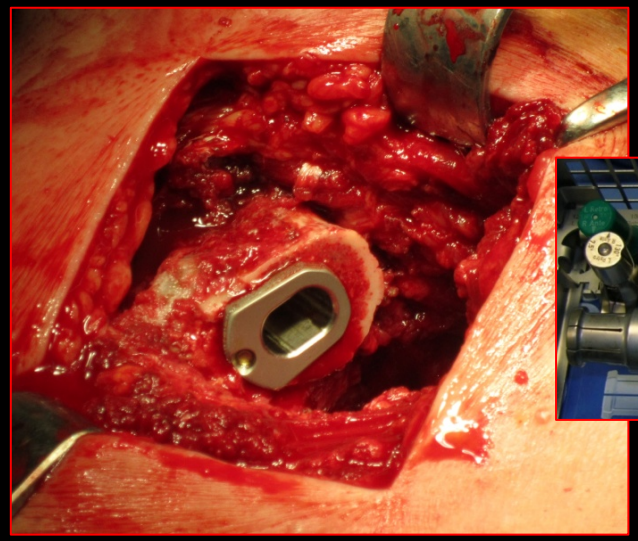


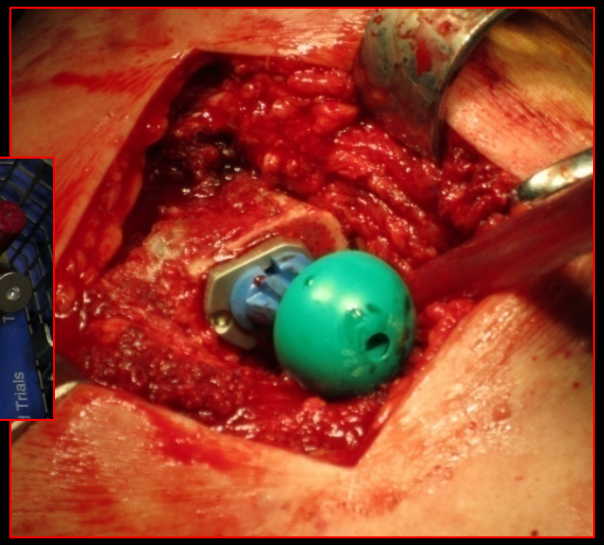


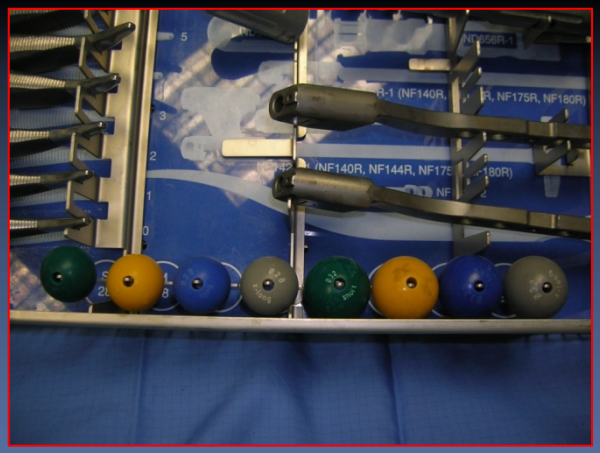
Rx intra op

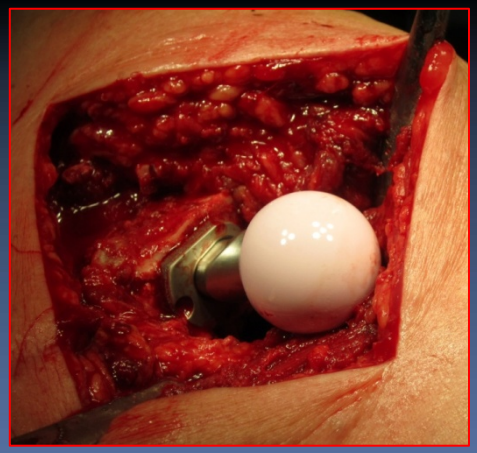
nei primi 3-4 casi
"learning curve"
R.H. Wittenberg

N. di T.



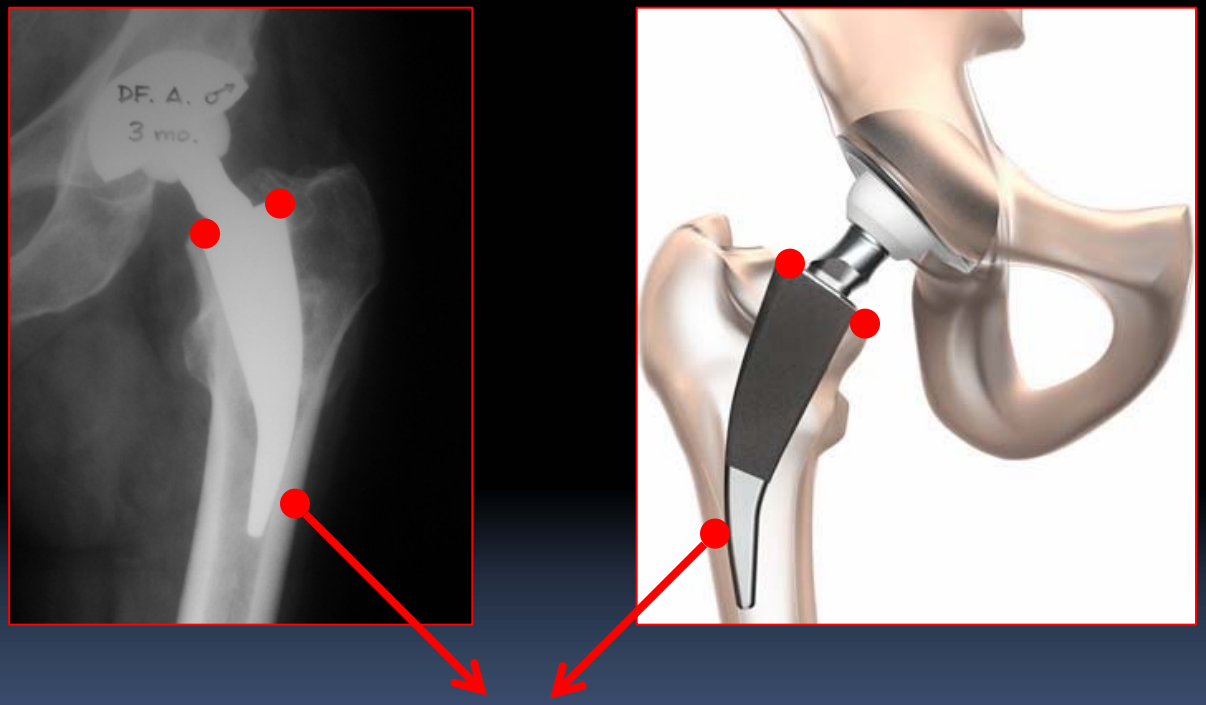






N. di T.

best target: contatto a 3 punti



"Recommended but not mandatory"
(R.H. Wittemberg)

CASISTICA

Giu 2007 – Dic 2011

N° IMPIANTI (50 PAZIENTI)	54
Donne	29
Uomini	21
Età media	67,7
Dx	29
Sx	25
HHS pre operatorio	48.8
HHS (min. 1 y)	93.1

CASISTICA

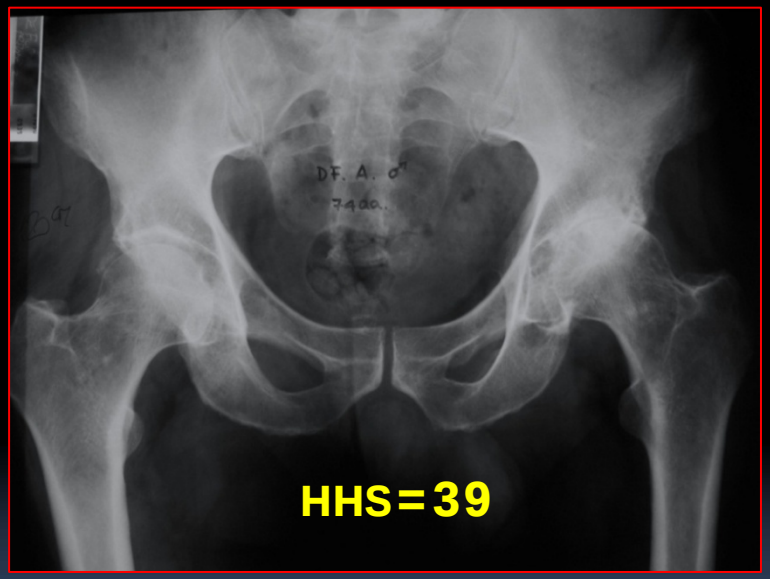
Giu 2007 – Dic 2011

DIAGNOSI	
COXARTROSI	52
NECROSI TESTA FEMORE	2
A.R.	0
FRATTURE MEDIALI	0
ALTRE	0

CASISTICA

Giu 2007 – Dic 2011

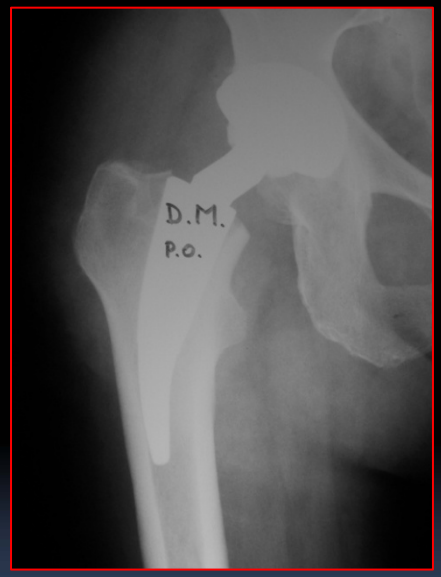
Uomo, 74 aa, coxartrosi sx, Dorr type A/B, tracking e ballo

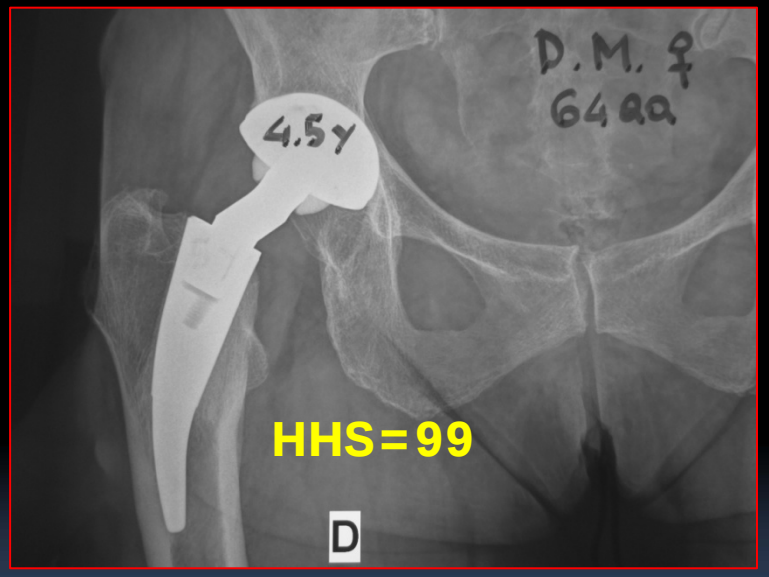


CASISTICA

Giu 2007 – Dic 2011

Donna, 60 aa, coxartrosi dx, Dorr type A/B, escursionismo

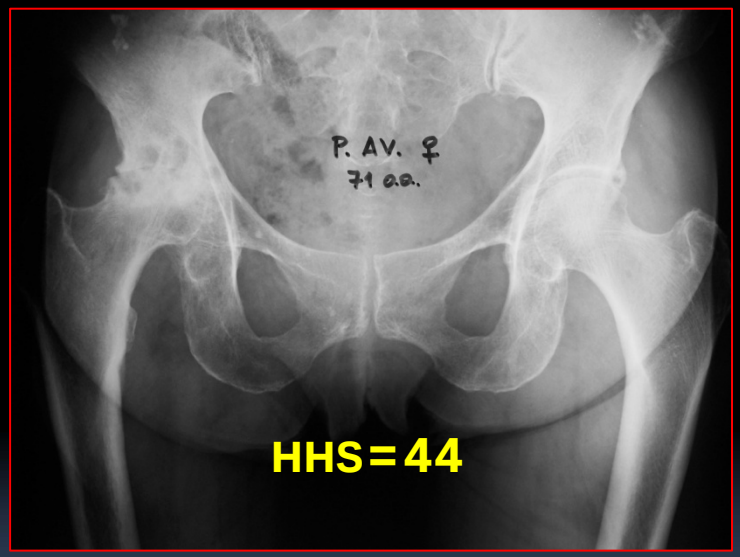




CASISTICA

Giu 2007 – Dic 2011

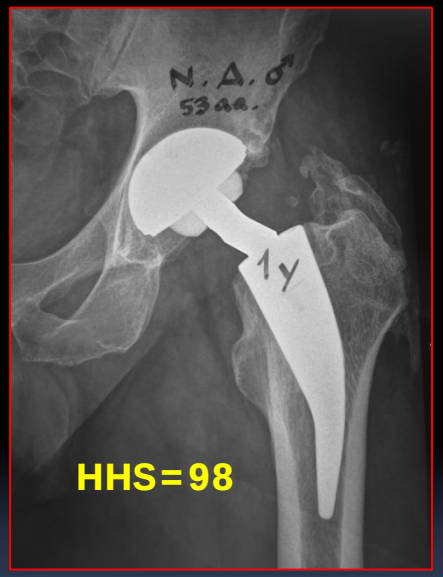
Donna, 71 aa, coxartrosi dx, Dorr type A/B



CASISTICA

Giu 2007 – Dic 2011

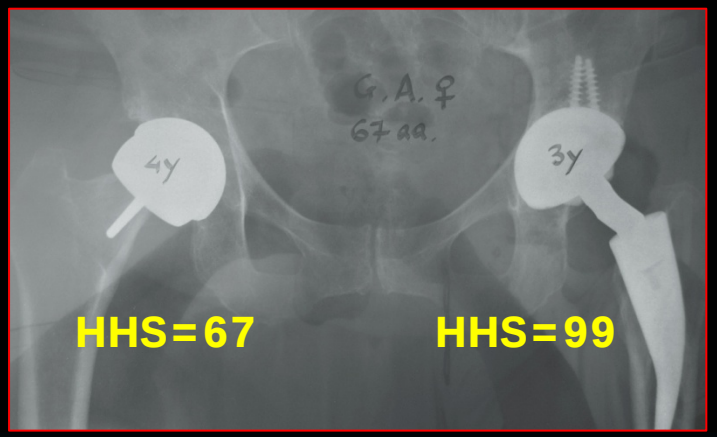
Paz maschi giovani-adulti, 39-54 aa, coxartrosi / av.necrosi, Dorr type A, sportivi

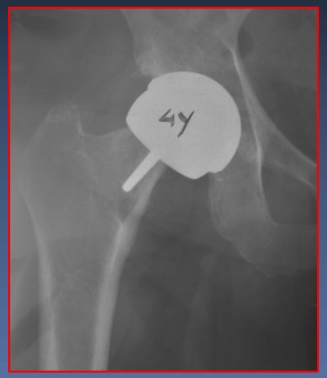


CASISTICA

Giu 2007 – Dic 2011

Donna, 59 aa, coxartrosi bilat, Dorr type A bilat, imprenditrice





CASISTICA

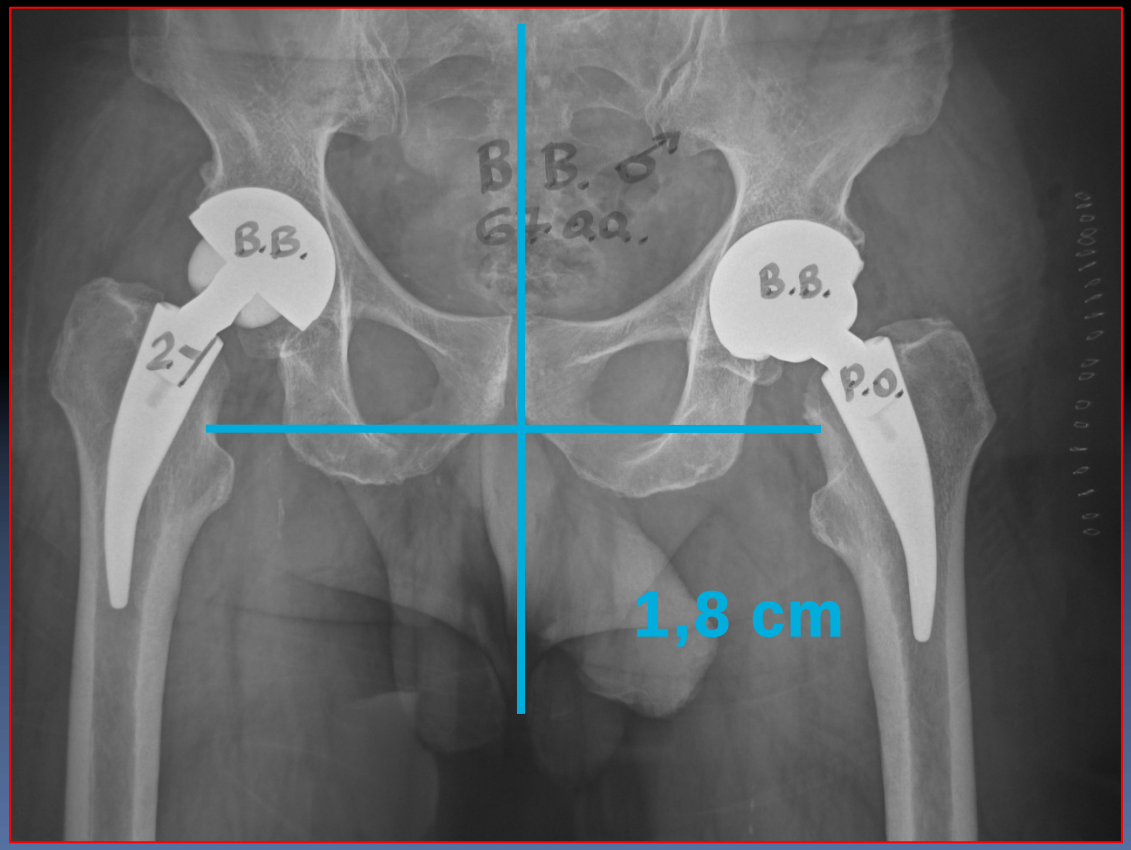
Giu 2007 – Dic 2011

COMPLICANZE	
MOBILIZZAZIONE	0
INFEZIONE	0
STUPORE S.P.E.	0
SUBSIDENCE	0
FRATTURA INTRA OP.	1
LUSSAZIONE	1
ROTTURA INTERCOTOLE	1
DISMETRIA ARTI 1,5-2 cm	2

CASISTICA

Giu 2007 – Dic 2011

COMPLICANZE



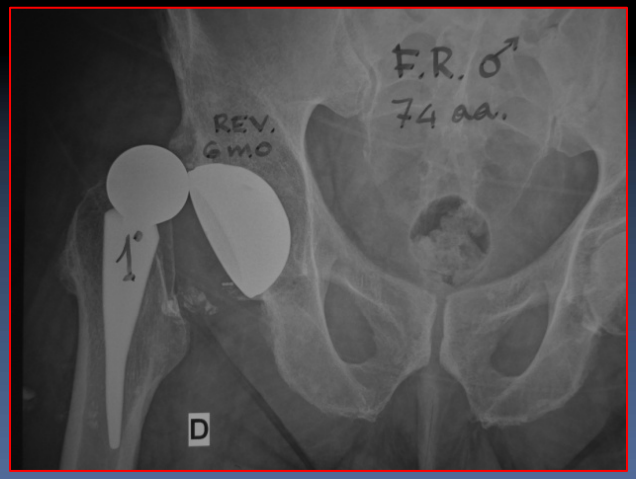
CASISTICA

Giu 2007 – Dic 2011

COMPLICANZE

Uomo, 73 aa, coxartrosi dx, Dorr type A/B, motociclista

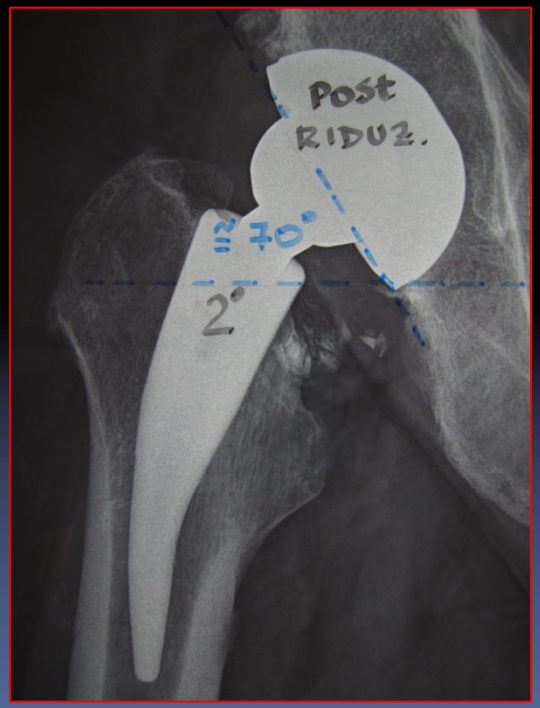
02.10.2009 THA
17.08.2010 REVISION (rottura intercotile in ceramica)

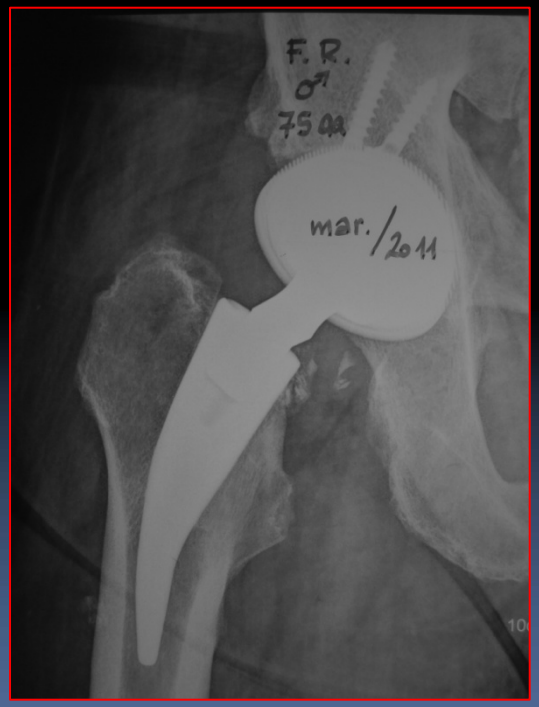


CASISTICA

Giu 2007 – Dic 2011

COMPLICANZE



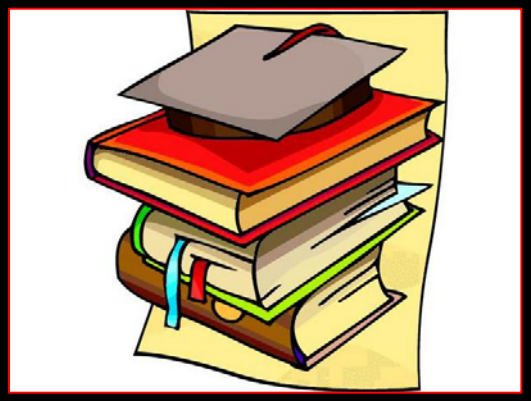


CONCLUSIONI

L'evoluzione tecnologica consente una chirurgia sempre più "mini invasiva"

… ma è una chirurgia sostitutiva !

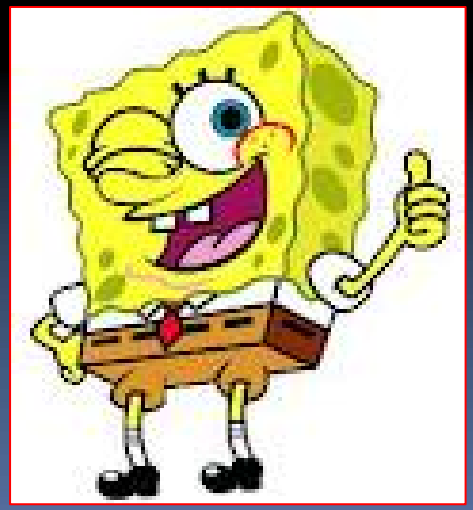
CONCLUSIONI



La casistica esigua non consente di esprimere giudizi

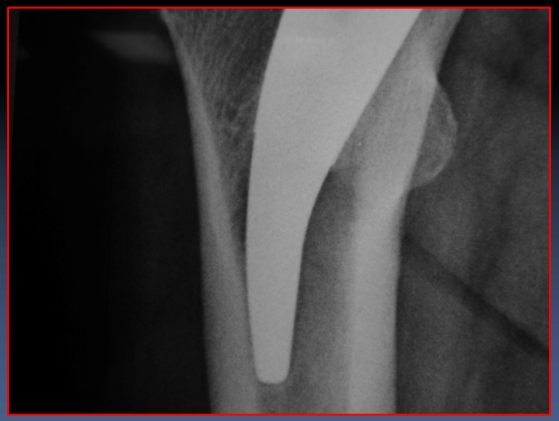
ma

i buoni risultati fanno ben sperare per il futuro



CONCLUSIONI

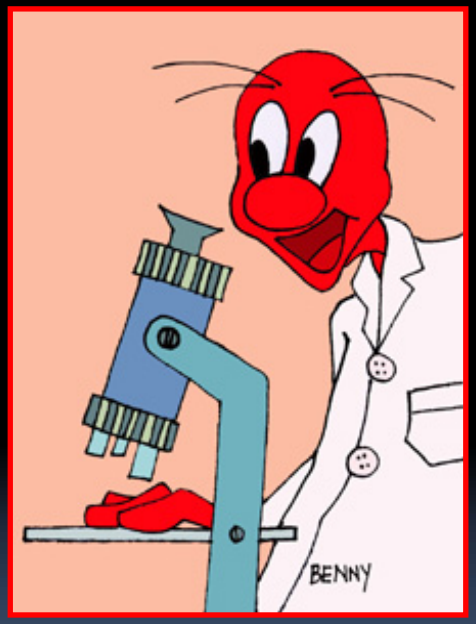
- **Ender et al:** *" Acta Orthop." 2007* **(CUT STEM)**
- **Falez et al:** *" J. Orthop. And Traumatol." 2008* **(MAYO)**
- **Gill et al:** *"Hip International" 2008* **(CFP)**
- **Stuldberg et al:** *"Orthopedics" 2008* **(CUSTOM METAPH. STEM)**
- **Camera et al:** *"Minerva Ortop. e Traumatol." 2011* **(METHA)**

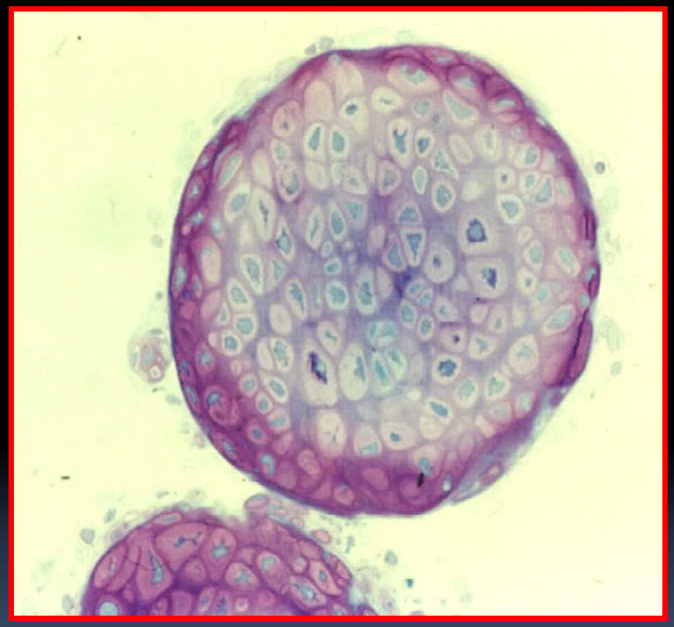


- **M. Lerch et. al:** " *Int. Orthop." 2011; sep.21*

CONCLUSIONI

il futuro…

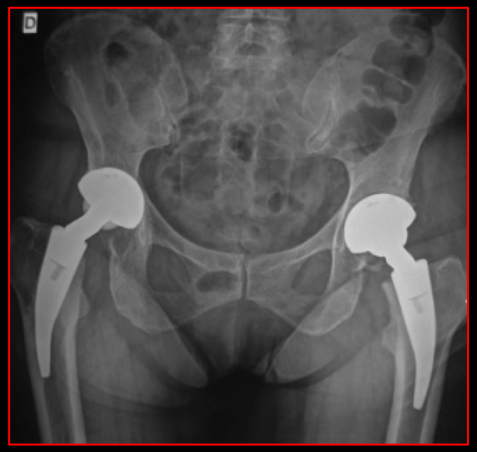




E’ basato sulla ricerca biotecnologica e sul ritorno all’essenza della vita (P. Rossi)

TAKE HOME MESSAGE

...il presente
e il futuro...



"If surgeon does something logical biological does the rest" **(T. Helfet)**


GRAZIE