

TOTAL HIP RESURFACING

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ORTHOPEDIC SURGEON
ARETAEIO HOSPITAL
NICOSIA

SPECIFIC PATHOLOGIES LEADING TO O.A.

- MECHANICAL: Dysplasia
Epiphysiolysis, Epiphysiolesthesis
Legg-Calve-Perthes
Femoro-acetabular Impingement
- TRAUMA
- ARTHRITIS : Infection
Rheumatoid
- OSTEONECROSIS



Back et al JBJS 2005:
230 Hips → survival rate: 99.14 %
(M.F/up. 3 years)

Harlan + Amstutz et al JBJS 2004:
400 Hips → survival rate : 95%
(M.F/up. 3.5 years)

J. Daniel/McMinn JBJS March 2004

440 HIPS → ONLY ONE LOOSENING (SURV RATE 99.8%)
IN MAXIMUM FOLLOW UP OF 8.2 YEARS.

- ★ → PATIENTS' AGE: YOUNGER THAN 55
- ★ → 93% ♂ AND 87% ♀ RETURN TO
THEIR PREVIOUS SPORTS ACTIVITIES



IS IT SOMETHING TOTALLY NEW ?

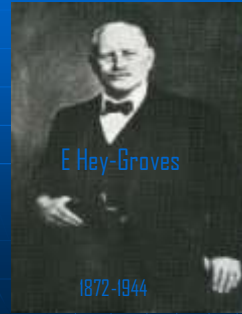
- HISTORICAL REVIEW



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1ST GENERATION HIP RESURFACING



1ST GENERATION HIP RESURFACING



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Judet Brothers (1946)



1ST GENERATION HIP RESURFACING



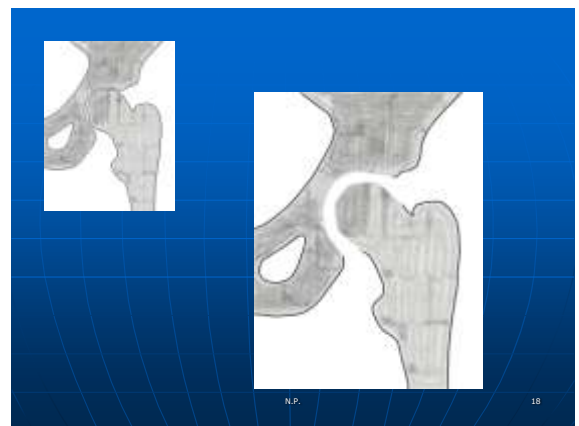
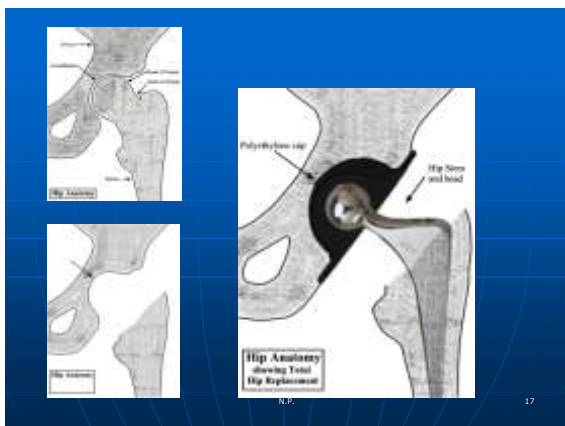
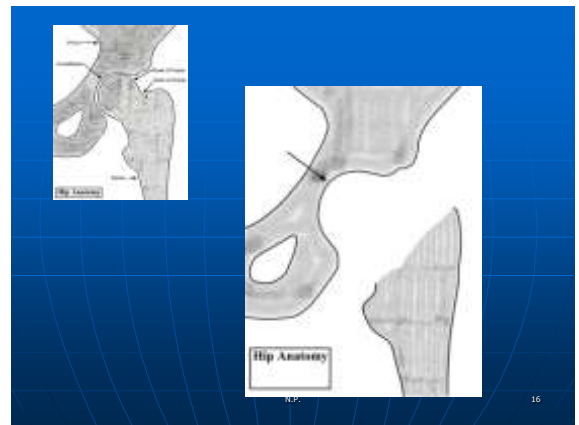
- USED RESURFACING PROSTHESIS OF TEFLON IN 1951
- LARGE HEAD
- BUT: VERY RAPID LOOSENING

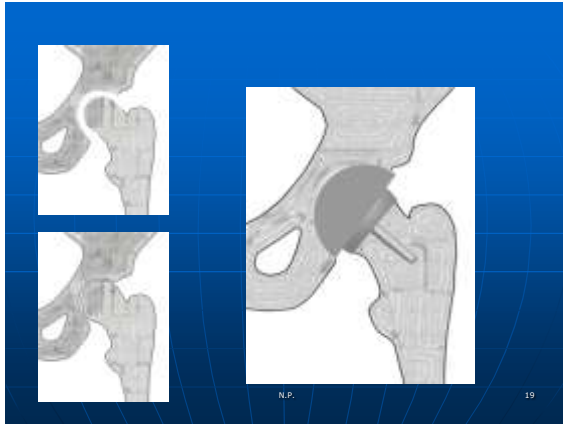


2ND GENERATION HIP RESURFACING

1970-1980: NEW ATTEMPT







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METAL ON METAL

WHAT DOES IT MEAN ?

We can achieve:

- VERY SMOOTH SURFACES
- EXCELLENT SPHERICITY
- OPTIMUM RADIAL CLEARANCE



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METAL ON METAL

- Therefore we can achieve an excellent lubricated contact

Especially with

Larger diameter bearings



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DEBRIS RESPONSIBLE FOR LOOSENING

- Debris from metal on polyethylene is 0.2-7 μ m in size, BUT
- Debris from metal on metal is in nm in size. (Firkins et al-> 25-35nm), much smaller!
- With much higher concentration in joint fluid

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METAL ON METAL

- INCREASED CONCENTRATION OF COBALT / CHROMIUM IN SERUM
- CONCERNS → TOXICITY
→ CARCINOGENESIS

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METAL ON METAL

TOXICITY ?

- Colenam et al 1973
- Jacob et al 1996
- Brodner et al 1997
- Gleizes et al 1999
- Schaffer et al 1999

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Conclusions

- Increase in serum levels in the initial postoperative period may suggest 'Self polishing phenomenon' (Sieber et al, JBJS B, 1999)
- In 9 patients the levels showed a downward trend after an initial rise which may reflect Tribologic behaviour of the Metal on Metal resurfacing

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Conclusions

- Higher serum levels of metals are not associated with clinical symptoms or radiological abnormalities (so far)
- Patients who were relatively young had higher levels
- Bilateral resurfacing had similar levels to unilateral ones

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CARCINOGENESIS?

- **EPIDEMIOLOGICAL STUDIES:**
Heath et al 1971
Gillespie et al 1988
Matheson et al 1995
Visuri et al 1996
Langkamer et al 1997
- **EXPERIMENTAL STUDIES:**
Memoli et al 1986,
Takamura 1994

ALL COULD NOT DOCUMENT CARCINOGENESIS

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LARGE HEAD

- WHAT ARE THE ADVANTAGES OF USING LARGE HEAD ALMOST THE SIZE OF THE ORIGINAL ONE?

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LARGE HEAD

- **Increased range of motion**
 - **Decreased possibility of dislocation**
 - **Impingement at larger angle**
-
- **GENERALLY: OPTIMUM FUNCTIONAL RESULTS**



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EASY TO CONVERT IN REVISION
TOTAL HIP REPLACEMENT

N.P.

EASY CONVERSION IN TOTAL HIP REPLACEMENT



POSSIBILITY OF NECK FRACTURE

HARLAN+ AMSTUTZ, JBJS 2004
STUDY OF 600 HIPS:

NECK FRACTURE IN ONLY 5 HIPS
(0.83%)

ALL WITHIN THE FIRST 5 MONTHS
(M/t 3 Months)

ALL AFTER MAGOR OR MINOR INJURY

4 OUT OF 5 OCCURRED ON THE
POINTS OF CONTACT BETWEEN
NECK AND PROSTHESIS

POSSIBILITY OF NECK FRACTURE

- AND ALL IN CONJUNCTION WITH ANATOMICAL OR OTHER TECHNICAL REASONS (Reamed neck not fully covered)
- CONCLUSION: GREAT CARE NEED DURING OPERATION.

INDICATIONS :

- YOUNG ACTIVE PATIENTS
 - ♂ up to 55-60 years of age (max 65)
 - ♀ up to 50-55 years of age (max 60)

PREREQUISITES:

Good bone quality (DEXA?)

No severe Leg length discrepancy

No large cysts in the femoral head and neck.

OUR EXPERIENCE

- S. Sergiou / N. Papaloucas
- START : Beginning 2003
- Operations performed with Implants of CORMET of CORIN : 28

OUR EXPERIENCE

- Detailed Preoperative Planning and templating is CRITICAL

DRAWING OF ACETABULUM

Size, position orientation



DRAWING OF HEAD

(Size, Position)

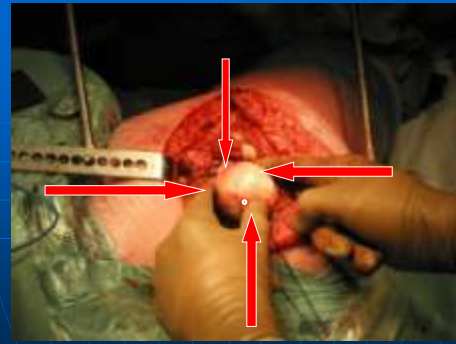


OUR EXPERIENCE

- All the operations have been performed in lateral position, with anterolateral approach and anterior dislocation of the hip (Hardinge approach)

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Hardinge approach



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OUR EXPERIENCE

- Intraoperatively we prepared the femoral head for a size larger than planned, because the acetabulum controls the size of the head
- You can still fit a smaller size of head, but not a bigger one after preparing it.

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OUR EXPERIENCE

BE VERY CAREFUL:

- During reaming of head and neck
- By fitting the prosthesis to avoid impingement
- To fully cover the reamed neck.

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OUR EXPERIENCE

RESULTS:

- Too short a time of follow up and small number of patients
- 1 revision of acetabulum due to wrong position of it and impingement
- Rest of the patients are quite happy.

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