

**Introduction** The ecoguided infiltrative therapy with hyaluronic acid (HA) showed particularly effectiveness in the treatment of patients with mild or moderate hip osteoarthritis (OA) (Kellgren grade 1–2). **Methods** Between February 2009 and June 2013, in Orthopaedic and Traumatologic Clinic of the University “P. Giaccone”, Palermo, we studied 224 patients with hip OA treated with 3 intra-articular ultrasound guidance infiltration of HA 30 mg/2 ml high pm, every 45 days. Each patient was assessed at baseline (T0) and during infiltrations (T1 and T2); then to follow-up at 6 (T3) and 12 months (T4) and submitted to the VAS scales, the Harris Hip Score (HHS) and the Lequesne Index; we evaluated also the ROM, the test of Faber, Thomas and Trendelenburg. Finally, we investigated the following co-morbidities: heart diseases, diabetes, thyroid diseases, smoking effects.

**Results** The data analysis showed that the hip affected were 96 left and 128 right. All subjects improved pain symptoms and the hip functional with substantial differences between the smokers as shown the VAS [the average value of VAS were 7.1 (rest) and 6.6 (movement) for smokers, for the other without co-morbidity were 3.4 and 4.9; in cardiac, diabetic and thyreopathic patients the value were similar], Lequesne Index, HHS and ROM.

**Discussion** Study’s analysis would consider the smoke as a negative factor to the effectiveness of the infiltrative therapy respect both the population of control and the subjects with others co-morbidities.

**Conclusions** The study is, however, in a initial phase and ask a confirmation with a higher number of patients. Main point would be to extend the evaluation to co-morbidities, not considered in this analysis.

### Minimally invasive anterior approach in the supine patient for the anterior approach without capsular release

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**Methods** The approach is performed 2 cm below and distal to the line joining the anterior superior iliac spine to the Gerdy’s tubercle. This intramuscular approach passes between the rectus femoris and tensor fascia latae and requires lowering the fibres of the tensor muscle, ligation of the lateral circumflex artery, acetabular capsulotomy and double osteotomy of the femoral neck to remove the head. The femoral stem is prepared by abducting the limb under the contralateral leg, tilting and lowering the distal segment of the operating table by at least 40°, and externally rotating the limb. This manoeuvre allows the posterior capsule to be relaxed so that unless the capsules and tendons of the external rotators are retracted, the femur can be broached without having to perform a capsular release.

**Results** The authors have adopted the no capsular release approach in over 500 cases; out of a total 700 cases using the anterior approach, the total incidence of early and late complications was 3.1 %.

**Discussion** When a capsular release is needed, it must be as superficial as possible to avoid over-extending the posterior capsule and severing the superior and posterior recurrent arteries, which are difficult to cauterise. A specific instruments set is required, which must include a curved retractor and a dual-offset broach handle.

**Conclusions** With this technique it has been possible to achieve excellent early patient performance, especially hip hyper-flexion at kneeling and, in the authors’ experience, reduced blood loss.

### Ceramic-on-metal bearings in total hip replacement: metal ion release and clinico-functional evaluation

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**Introduction** Ceramic-on-metal (CoM) total hip arthroplasty (THA) theoretically combines both the advantages of ceramic-on-ceramic (CoC) and metal-on-metal (MoM) bearings: negligible rupture risk of the liner with a limited ion release. As primary endpoint, we asked whether serum cobalt (Co), chromium (Cr) and molybdenum (Mo) concentrations in CoM-THA patients at an average of 3 years follow-up were higher than those measured in the pre-operative population. As secondary endpoint, we wanted to verify whether ion levels in CoM-THA patients were different from those obtained in a similar cohort of 29 MoM-THA patients at the same average follow-up.

**Methods** Ion values were measured by atomic absorption spectrometer in 20 CoM-THA patients at an average of 3 years follow-up and compared with those measured in the pre-operative population; functional outcome was assessed with Harris Hip Score (HHS) and University of California Activity scale (UCLA). These results were then also compared with from those obtained in a similar cohort of 29 28 mm head MoM-THA patients at the same average follow-up.

**Results** Cr and Co Serum levels in CoM-THA patients were significantly higher ( $p < 0.001$ ) at 3 years follow-up than before surgery. Mo concentrations were not significantly different ( $p = 0.45$ ). No signs of implant loosening were recorded. Functional outcome was excellent with HHS and UCLA scale rising from 50 and 3.6 pre-operatively to 90.8 and 6.3 respectively at 3 years follow-up ( $p < 0.001$ ). Cr serum levels were significantly lower in CoM-THA than in MoM-THA group ( $p = 0.02$ ) while Co values, even if lower, did not reach statistical significance ( $p = 0.054$ ).

**Discussion** In recent years the incidence of hip replacements in young patient strongly increased, together with the interest in new couplings that can satisfy high functional demands, with a reduced wear and a better implant survival over time. Despite theoretical advantages and success in hip simulator studies, limited clinical data on the performance of CoM bearings exist and little is known about ions release over time.

**Conclusions** Our results show that CoM-THA patients achieve excellent clinical outcome with a limited chromium release at 3 years follow-up.

### Differential diagnosis of avascular necrosis of the femoral head (AVN) and transient hip osteoporosis (THO): role of MRI

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**Introduction** Avascular necrosis of the femoral head (AVN) and transient hip osteoporosis (THO) could represent a differential diagnostic problem as both are responsible, in their earliest stage, of acute hip pain.

**Methods** In the period between December 2011 and October 2013 we evaluated with magnetic resonance imaging (MRI) 80 patients aged between 25 and 44 years suffering from acute hip pain.