

Results In 37 cases was verified, on the basis of symptomatology, a bone distress with altered signal of subchondral bone; of these 28 had typical features of NAV and 9 characteristics of THO. In particular, the MRI showed, in patients affected by NAV a diffuse oedema in the early phase and, as a characteristic element, a serpiginous line of low signal intensity in the subchondral bone with a central fat zone, which is indicative of the initial collapse of the subcortical trabecular bone. In THO MRI has instead highlighted, besides the presence of diffuse oedema and extended from the head of the femur until the intertrochanteric region, a lack of images related to defects and/or collapse of subcortical bone trabeculae. In both diseases there is a common factor: the frequent presence of abundant endo-articular effusion. After 8 months of the onset of symptoms, different is the evolution of the MRI picture: in subjects suffering from NAV it can be observed a growing bone collapse, while in those suffering from THO bone oedema tends to resolve completely.

Discussion NAV, cause of coxalgia much more common than THO, is a condition of vascular suffering which has a worsening evolution that requires an early surgical intervention in order to prevent a hip deformity. THO is instead a spontaneous bone disorder characterized clinically by acute hip pain that runs out in 6–8 months: it is commonly associated with pregnancy but was also seen in middle-aged individuals. Its therapy requires functional drainage and anti-inflammatory drugs, requiring no surgery.

Conclusions MRI plays an important role in early diagnostic identification of NAV differentiating it from THO (and other pathological entities), thus allowing a correct therapeutic approach.

Surgical drainages in total hip replacement

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Introduction Wound low-vacuum suction drains are largely used after total hip arthroplasty, however there is no unanimous agreement in literature on their efficacy and on their using protocol. Aim of this study is to introduce a standard protocol for surgical drainages usage. **Methods** Eighty patients, age between 42 and 76 years old, affected by primary osteoarthritis, underwent unilateral total hip arthroplasty, divided in 4 groups of 20 people: the first group was undrained, the second group was treated with one wound drainage removed after 24 h, the third group was treated with one wound drain for 48 h and the fourth group was treated with one wound drain for 72 h. Patients suffering from altered coagulation status were excluded. Every patient was evaluated by mean of blood loss, need for blood transfusion, number of needed wound dressings, functional results, length of hospitalization, peri-prosthetic and surgical wound infection and postoperative hematoma.

Results There were no statistically relevant evidences in favour of using wound drains as concerns of blood loss, although they are slightly more elevated in wounds drained for 48 and 72 h. The 34 % of drained patients required blood transfusions (with no difference between the three groups), whereas only 27 % of undrained patients required the later. Number of needed wound dressings was statistically higher in the undrained group (76 %), while length of hospitalization was higher for patients who kept drainages for 48 and 72 h, even though there were no differences among groups as concerns functional results. There were no statistically relevant differences among groups by mean of peri-prosthetic and surgical wound infection, although they were slightly higher in patients

drained for 48 and 72 h. The 52 % of undrained patients presented post-operative hematoma, whereas only 20 % of drained patients for 72 h presented it.

Discussion The higher number of needed dressings associated to the higher incidence of post-operative hematoma are the most relevant factors in favour of using surgical drainages. In addition the longer hospitalization, related to late removal of drains, which led to delayed start of the rehabilitation programme, is a significant factor in advantage of short removal of wound drains.

Conclusions According to our study, positioning wound suction drainages after total hip replacement surgery and removing them after 24 h is preferable than not using them or removing them later.

Core decompression and injection of autologous bone marrow concentrate combined with demineralized bone matrix and platelet rich fibrin for femoral head osteonecrosis: results at 3-year follow-up

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Introduction Avascular osteonecrosis of the femoral head is a disease that mainly affects young adults between 20 and 40 years. When not resulting from trauma, is associated with steroid use, alcoholism, blood disorders and autoimmune diseases, but a considerable amount of osteonecrosis is idiopathic. If left untreated, it leads to the collapse of the femoral head with severe functional limitation and early progression to osteoarthritis. There are many possible approaches is that bloodless surgery with mixed results.

Methods From September 2008 we treated 30 osteonecrosis in 29 patients (21 males, 8 females), mean age 35 years (min 17, max 55) with core decompression and injection of bone marrow concentrate, platelet gel and demineralized bone matrix. In 8 patients the necrosis was idiopathic, in 17 due to steroids, 3 post-traumatic, 1 case alcohol-related. We used the Ficat classification; in 18 cases was found to be stage II (12 cases IIa, IIb 6 cases), while in the remaining 12 cases were stage III–IV (8 cases III, IV 4 cases). The primary outcome was survival (failure); secondary outcomes were the functional clinical outcome assessed by Harris Hip Score (HHS) as well as radiographic progression.

Results The mean follow-up was 36 months (min 12, max 60 months). The failure was recorded in 8 cases (27 %) who required prosthetic replacement at 14 months after the first procedure. In the remaining 22 cases we have seen a trend of HHS to increase (average from 58 to 89.5); patients with stage II necrosis Ficat had a better clinical response (61 to 96.5) compared with patients with stage III–IV (54 to 82.5), but with a higher rate of conversion to total hip replacement (stage IIb).

Discussion Local conditions require that the treatment stimulates tissue regeneration while preserving the integrity of anatomical structures. The rationale of our method is to provide the bone regeneration (decompression and growth factors) and osteoblastic precursors, with a minimally invasive technique which does not alter the vascularization or the articulation, leading to good clinical-radiographic results.

Conclusions Core decompression with bone marrow concentrate, platelet gel and demineralized bone matrix infiltration is a good alternative to other rescue therapies of the femoral head. The clinical and radiographic results are satisfactory and promising, although they should be considered preliminary.