

cially in the short term. Furthermore, modularity enables the implant to be adapted to the patient, allowing restoration of the limb length and correct muscular balancing. Nevertheless, further studies are necessary to clarify the characteristics of such devices in the mid and long term on larger series of patients.

PERIPROSTHETIC HIP FRACTURES: OUR EXPERIENCE

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Background The incidence of femoral periprosthetic fractures after total hip replacement has increased in the last 10 years, (1.5–2% for primary implants, 7% for revisions), due either to the remarkable hip prosthesis numbers that are implanted every year and for the continuous extension of the indications that include very old and young subjects, obese patients with osteopenic bone.

Aim of the present study is to evaluate clinically and radiographically patients affected by periprosthetic fracture.

Materials and Methods At the Orthopaedic Clinic, University of Catania, between January 1996 and October 2005, 32 patients affected by periprosthetic fracture, 19 were women, 13 men, were treated. The group of study presented an age comprised between 84 and of 38 years (mean age 46 ys); cemented total hip replacement were implanted in 14 patients, while biological prosthesis in 18 cases. The classification of Beals and Tower, that consider fracture side and stem stability, was utilized.

Results Treatment options depended from several factors: type of fracture, bone stock, system stability, general conditions of the patient. All cases belonging to type A (5 cases) and B1 (5 cases) were treated conservatively, while patients affected by type B (16 cases) and C (6 cases) fractures were surgically treated either with revision prosthesis and/or with different systems of synthesis.

Discussions Risk factors predisposing to periprosthetic fracture can be divided in general (osteoporosis, co-morbidities) or local (periprosthetic osteolysis, cortical stresses or crackings and iatrogenic defects); often aseptic loosening of the femoral component can cause a periprosthetic fracture for minimal traumas.

Conclusions Periprosthetic fractures represent a major problem of hip arthroplasty with an incidence designated to increase; an univocal treatment does not exist and a correct therapeutic choice depends on level of fracture, bony quality, prosthetic stability and general conditions of the patient.

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EXPERIMENTAL OUTCOMES OF THE USE OF PLATELET GEL IN REVISION OF TOTAL HIP ARTHROPLASTY

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Background The aseptic loosening process, once known as “cement disease”, is the most common cause of failure for the total hip replacement (THR). Aseptic loosening shows on X-rays as lines appearing around the prostheses or isolated cavities.

Materials and Methods Our case deals with the revision of the acetabular component with an osteolysis graded at the 3rd stage of the Paproski classification. The case, dating back to December 2005, is about a 74 years old lady. She had bilateral THR: the left one performed in 1996, while the right one in 1998. At the examination, the

patient claimed pain at the left hip, a limited range of motion (ROM) and a quite complete functional impotency, (the Harris Hip Score was the 25 point). The X-ray showed the aseptic loosening of the cup due to the departure of the acetabular medial wall; we decided to use Tutoplast to fill the bone blank.

The Octopus-Lima acetabular component was chosen since its external ring assures, primary stability. Further, it excludes graft from the load: this is necessary for the inclusion in the host bone. We opted for the Tutoplast to fill the bone blank because there are many evidences that the morcelized grafts have faster and better results than the structural ones in the inclusion of the host bone. The platelet gel was used because there are many evidences in literature that it can improve the inclusion of the graft thanks to the concentration of growth factor (especially PDGF).

Results After 13 months from the revision the patient showed an Harris Hip Score of 87 point; the ROM: 95° bending, 10° extension, 35° abduction, 10° adduction, 15° intrarotation, 25° extrarotation.

Discussion Jumbo cup, oblong component or the high placement of the acetabular component are all used for the revision hip arthroplasty: However, in our case these implants could not be used because of characteristics of the osteolysis process (dimension and localization). In the management of a so large bone loss, an alternative could have been to use the Burch-Schneider ring. Please note that this kind of antiprotusion cage is not too different, in the concept, from the external ring used in our implant.

Conclusions The use of:

- moccillised allograft for the reconstruction of the medial acetabular wall;
- platelet gel to improve the inclusion of the graft;
- an acetabular component with an anchorage on the ilium and on the ischium, resulted in a very good outcomes.

TREATMENT OF PERIPROSTHETIC FEMORAL FRACTURES WITH DISTAL FIXATION MODULAR REVISION STEMS

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Background Late periprosthetic fractures of the femur are the third most frequently reported cause of surgery after total hip arthroplasty. Revision total hip arthroplasty can be difficult, especially when poor bone stock is encountered. The aim of this study was to examine the results of late periprosthetic fractures complicated with primary implant loosening performed with distal fixation modular revision stem.

Methods From November 1999 to May 2006, 16 late periprosthetic fractures were treated with distal-fixation, modular, straight stem. There were 13 females (82%) and 3 males (18%) whose mean age at surgery was 76.7 years (range, 48 to 95 years). Femoral revision surgery was performed with the Revitan (2 cases) and ZMR (14 cases) to get a stable distal primary fixation. X-rays were assessed accordingly to the Vancouver classification: there were 3 type B2 and 13 type B3 fractures.

Mean post-operative follow-up was 52 months (range, 10 to 88 months). At the time of the last follow-up visit 4 patients already passed away, all of them for causes unrelated to the procedure. The clinical outcome was monitored with the Harris Hip Score, subjective VAS, pain and satisfaction evaluation. Standard AP and lateral x-rays of the hip were obtained at each follow-up visit. Leg-length discrepancy was also investigated as a factor possibly affecting outcome. Complications included one septic loosening that was treated with a two-stage revision.

Results All the patients but one were finally able to walk and had minimal to no pain at all. A satisfactory functional outcome was achieved with an average 76 (range, 25 to 100) Harris Hip Scores points. The subjective pain and satisfaction scores were respectively 2.4 and 7.8 points.

As far as radiograms are concerned, all the sixteen femur did show a good healing of the fracture, with no secondary stem subsidence.

Discussion Generally, considering the severity of an event such as a periprosthetic late fracture in an elderly patient, results were satisfactory. The average Harris Hip Score and subjective satisfaction would have been even higher if one patient wouldn't have been so much disappointed because of her severe leg-length discrepancy, dependent on the acetabular side.

From a surgical point of view, the employed devices proved to be handy in bridging the fracture with distal fixation while adequately stabilizing it.

Conclusions According to the reported results, straight modular-revision stems provide an adequate treatment option of Vancouver type B3 and in selected cases of B2 type periprosthetic femoral fracture.

POSTER PRESENTATIONS

THE SUBVASTUS APPROACH FOR PRIMARY KNEE ARTHROPLASTY: OUR EXPERIENCE

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For years a progressive and constant research for improvement in the fields of the biomaterials, of the prosthetic designs, and mostly in the surgical prosthetic implantation techniques has been carried out. This research has particularly involved some joint prostheses, such as knee prosthesis.

The surgeons attention has been focused on the research for less invasive surgical approaches, in order to obtain an adequate joint exposure respectful for the soft tissues. This is all done in order to ensure patients a faster and more complete postoperative functional recovery. Among the many surgical approaches described, Authors find in the subvastus approach the possibility of adopting a lesser invasivity technique still providing a good surgical exposure of the knee joint.

A group of 92 osteoarthritic knees have been treated with primary knee arthroplasty using the subvastus technique between November 2004 and January 2006. Postoperative functional recovery for all the patients of this group has been faster than for those operated with the standard midline approach. Also intraoperative and postoperative complications rate has been considerably lower in the group operated with subvastus approach (6%) than in the other group (23%). The sole contraindications for subvastus technique are represented by obesity and by those cases in whom it is not possible to achieve a good patellar lateralization.

TWO-STAGE SEPTIC HIP REVISION WITH ANTIBIOTIC-LOADED SPACERS

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Background Two-stage revision was reported as one of the most successful strategies to treat hip periprosthetic infection; septic process eradication is obtained in more than 90% cases in most of previously reported series. The exact protocol to be followed still raises several controversial issues, particularly in patients with high risk of recurrent infection.

Materials and Methods We retrospectively evaluated 43 patients treated at our department by two-stage revision between 2000 and 2005 for late chronic infection. Patients underwent the same protocol of diagnosis and treatment. According to the Cierny-Mader

staging system for adult osteomyelitis all patients were classified as B-host, while 3 or more comorbidities were present in 14 cases (33%). Infection was caused by *S. Epidermidis* (33%), *S. Aureus* (28%), *Enterococcus* (5%), *Streptococcus* (2%), polymicrobial flora (21%), while intra-operative cultures were negative in 2 cases (5%). Methicillin resistance was found in 12 cases (31%).

In all cases an antibiotic loaded cement spacer was implanted during the first procedure: a preformed spacer impregnated with gentamycin (Spacer G®, Tecres), fixed with bone cement additioned with vancomycin was used in 38 cases, whereas bacteria were Gentamycin-sensitive; a spacer made with bone cement with vancomycin and meropenem, into a preformed mold (Biomet®), was used in 5 cases, whereas bacteria were Gentamycin-resistant. All the patients underwent an antibiotic oral or intravenous administration, during the interim period. Criteria for reimplantation were a gradual improvement in the CRP and ESR levels and a negative bone scan.

Results The average follow-up was of 4,3 years. Protocol was applied in all cases: protocol deviations (interim period longer than 6 weeks) were observed in 9 cases; not significant differences were found if compared with patients whose interim period was of six weeks or shorter. Spacer substitution was needed in 9 cases for persistent infection; all patients but two were successfully reimplanted: a cementless stem was implanted in 35 cases Bone allografts were used in 6 patients; 2 patients underwent a definitive Girdlestone procedure. Complications were observed in 4 patients; no cases of recurrent infection were observed at the most recent follow-up; not significant differences were found concerning patients conditions, duration of antibiotic therapy, type of microbial flora involved.

Conclusions We consider the two-stage revision the gold-standard treatment for hip periprosthetic chronic infection, giving good functional results and eradication of infection also in patients with high risk of recurrent infection, and allowing reconstruction with cementless prosthesis and bone allografts if indicated.

ARTHROSCOPIC OSTEOCAPSULAR ARTHROPLASTY FOR PRIMITIVE ELBOW OSTEOARTHRITIS

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The Arthroscopic Osteocapsular Arthroplasty (AOA) is indicated to treat primitive arthritic elbow with stiffness, osteophytes and loose body when the joint space is conserved.

Especially if mobile, the osteophytes are the main cause of pain and should be removed. The success of this surgery is directly related to the amount of the capsulectomy and the osteophytes/loose bodies removal as well as to the correct rehabilitation program.

The traditional open surgery is:

- The Tsuge Arthroplasty: an high morbidity surgery that allows a complete capsular and osteophytes removal
- The Lateral or Medial Column Procedure: allows a good capsulectomy anterior and posterior, but limits the osteophytes removal to the lateral or medial side, respectively
- The Outerbridge-Kashiwaghi (O-K procedure): doesn't allow a complete anterior capsulotomy nor osteophytes removal

The Authors consider the AOA, suggested by O'Driscoll (Mayo Clinic), the best treatment for the arthritic stiffness of the elbow: allows the surgeon to reach all the joint recesses with a low morbidity for patients. AOA is a challenge technique, that needs a really long learning curve and a very fine knowledge of the anatomy to reduce portals risks.

The authors present the technique (from the patient positioning to the surgical steps) and the subsequent rehabilitation program.