(Depuy) trochanteric nail in the fixation of proximal femoral fractures.
Materials/patients and methods: Between June 2006 and May 2009 a total of 138 procedures were carried out on 134. The majority of patients ($n = 123$, 91.79%) were above 60 years of age with a female to male ratio of 2.44:1. The commonest indication for use of the ATN™ nail was fracture involving the proximal femur (94.93%). Other indications included revision surgery (2.17%) and prophylactic nailing (3.62%).
Results: The overall prosthesis related complication rate was 8.70% ($n = 12$) with Lag screw cut out from the femoral head being the commonest. Other complications included periprosthetic fracture at the tip of the nail, backing out of the Lag screw and backing out of the distal locking bolts.
We analysed several variables such as the tip apex distance (TAD), neck shaft angle (NSA), fracture configuration (Seinsheimer and Jensen), length of nail and grade of surgeon to determine if there was any correlation between these and the various types of prosthesis related complications. The 30-day, 90-day and 1-year mortality for our series was 11.59%, 16.67% and 27.54%, respectively.
Conclusions: In conclusion, we believe the ATN™ trochanteric nail to be a suitable and effective implant for the management of proximal femoral fractures. The prosthesis related complication rate is comparable to that of other intramedullary hip screw devices such as the IMHS™ (Smith and Nephew). In the very elderly female patient extra consideration should be given to using a device with a long nail so as to minimise the risk of periprosthetic fracture.

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Operative management of distal clavicle fractures: Clinical results

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Study rationale: The incidence of distal clavicle fractures is estimated to be between 12 and 15% of all clavicle fractures with higher non-union rate when they are displaced. Purpose of this study is to present our experience in the treatment of these complex injuries.
Materials/patients and methods: Between 2005 and 2008 nine distal clavicle fractures were treated operatively in our department. All the patients were men with average age 24 years old (18–29). All fractures were due to high energy trauma (fall from height, road accidents). In three cases there were no additional injuries, but in the remaining six cases acromioclavicular dislocation complicated the fracture. All the patients were operated during the first 24 h. In all cases we preferred the clavicular hook plate (synthes) for the internal fixation of the fracture. When an acromioclavicular dislocation was present we proceeded with additional stabilisation of the clavicle onto the coracoid process, using 2 non-absorbable 3.5 mm suture anchors (Smith and Nephew). An arm sling was preferred for 6 weeks. However pendulum exercises and passive movement started from the second week. Active movement started after 6 weeks and height lifting was allowed after 3 months.
Results: All the fractures were healed and no infection or malunion occurred. In six cases we observed symptoms of subacromial impingement after the beginning of active movement. In these cases the hook plate was removed after healing of the fracture and the symptoms relieved. During the latest follow-up (14 months post-operatively) the average constant score was 90 and the patients were satisfied.
Conclusions: Distal clavicle fractures dislocations remain complex injuries, difficult in treatment especially in younger patients and athletes that have great expectations.

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Evaluation of true variable axis volar locking plating system for complex, intra-articular fractures and symptomatic malunions of the distal radius

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Study rationale: Volar locking plate fixation has become widely popular for fixation of distal radius fractures. Some complex intra-articular fractures and malunions with a thin and/or severely comminuted distal fragment present a challenge in terms of establishing satisfactory anatomy and minimising the eventual loss of function. These screw tips are not sharp and the locking screws can be inserted 15° axis deviation of locking screws in all directions.
Materials/patients and methods: We present our series of retrospective analysis of 26 patients with complex, intra-articular distal radius fractures and symptomatic malunions treated with Aptus volar locking plate from January 2007 to April 2009. It included complex, unstable distal radius fractures and symptomatic malunions. The mean age was 51.04 years with mean clinical follow-up of 13.37 weeks.
Results: We noted mean physiotherapy follow-up of 9.42 weeks, mean palmar flexion −46.2°, and mean extension of 36.97°, mean radial deviation −21.61° and ulnar deviation −33.25°. 8 patients had full, 3 had 75% and 3 had 50% supination. 9 patients had full, 3 had 75% and 2 had 50% pronation.
Conclusions: Multidirectional volar locking (Aptus) plate fixation provides good fixation with wide range of options even in small fragment and highly comminuted intra-articular fractures. This is the thinnest plate available and makes the plate less intrusive, especially for predominantly female population. This would logically cause less interference with the soft tissues ensuring good functional results and early return of function in majority of patients as observed in this study. Patients with symptomatic distal radius malunions were also found to be minimally symptomatic at discharge.

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Clinical and histological results by using Ceraform in patients with bone defects

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Study rationale: Bone defects a challenging situation in orthopaedic surgery. Due to specific chemical and structural properties, biphasic ceramics are used as bone substitutes. We investigated intraoperative maneuverability, clinical tolerability, radiological and histological integration of a biphasic synthetic ceramic (CERAFORM®).
Materials/patients and methods: The study includes a 5-year follow-up of 43 cases requiring bone substitution: bone tumours, spinal fusions, revision arthroplasty, non-unions, fractures, osteitis. The

evaluation and follow-up was performed by GESTO form (Greffes ET Substitutes Tissulaires en Orthopedie). Radiological survey was performed at 3, 6, 9, 12 and 18 months. We used Ceraform as a single substitute or mixed with allo- or autograft.
Results: Clinical and radiological integration occurred in 9–12 months after implantation. Bone biopsy documented new bone formation.
Conclusions: Radiological aspect after implantation stands for a rapid integration in the host bone. Histological examination confirmed bone remodelling and recommends Ceraform as a performant osteoconductive synthetic bone substitute.

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Is the minimally invasive plate osteosynthesis (MIPO) with dynamic condylar screw (DCS) still a reasonable and actual option in complex subtrochanteric femoral fractures?

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Study rationale: The complex subtrochanteric femoral fractures raise difficult problems for any type of internal fixation. The purpose of this study is to evaluate the outcome of 42 subtrochanteric femoral fractures treated by MIPO technique, using the two-part and two-plane alignment achieved by DCS.
Materials/patients and methods: The fractures were classified according to Seinsheimer (3 type IIB, 2 type IIC, 5 type IIIA, 6 type IIIB, 15 type IV and 11 type V). The technique consisted in 5 major steps: (1) condylar screw insertion using minimal incision; (2) DCS-plate selection by fluoroscopy; (3) DCS-plate insertion beneath the vastus lateralis; (4) an additional minimal distal incision allows plate positioning and its slipping onto the condylar screw; (5) after the restoration of limb axis, length and rotation, the plate was fixed to the shaft with 3 or 4 screws placed divergently.
Results: All fractures healed within a mean time of 10.3 weeks (range 8–22 weeks). There were no infections or serious implant failure. At follow-up, there were 5 varus/valgus deformities above 5°, 4 leg length discrepancies over 15 mm and 1 malrotation of 20°. The final outcome (according to the Neer scale) was excellent in 28 cases, satisfactory in 13 cases and unsatisfactory in 1 case.
Conclusions: This demanding technique has the advantages of a faster rate of union, with no need for bone grafting. Even if the last generation of intramedullary nails and the locked proximal femoral plates represents the best alternative due to their biomechanical advantages, the elevated costs of these implants, the demanding technique of nailing in fractures with short proximal fragment and trochanteric extension, as well as our good results with a thorough biological technique using cheap classic implants led to the conclusion that MIPO with DCS is still a reasonable alternative in these difficult lesions.

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Telescoping of the head-neck-implant in proximal intramedullary femoral nails: A review of our 650 PFN-A implantations

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Study rationale: Since the introduction of the DHS the telescoping of the head-neck-implant is wished in pertrochanteric fractures to get pressure on the fracture zone. Protrusion over the lateral cortex as squeal of the telescoping can cause irritation. We analysed our patients treated with an PFN-A to give some advice for the future.
Materials/patients and methods: Starting in April 2004 we have now an overview of more than 650 PFN-A implantations. The charts of this patient group had been documented prospectively. Second interventions due to telescoping had been critically analysed and discussed with the recent literature.
Results: Telescoping of the head-neck-implant is a wished phenomenon to achieve fracture consolidation and could be seen in nearly all unstable pertrochanteric fractures with comminution or osteoporosis. Interventions due to irritation had been necessary in only a few patients (7 out of 650 until now; which is about 1% of the cases). 4 times we changed the blade to a shorter one and in 3 cases we performed a partial metal removal after fracture consolidation. In one case we after blade removal we have seen a medial neck fracture without any additional adequate trauma and to perform hemiarthroplasty.
Conclusions: Even in the largely seen phenomenon of telescoping rare interventions were necessary. For these rare cases we recommend either changing of the blade or early prosthetic replacement otherwise additional surgery will be necessary after metal removal, especially in osteoporotic fractures.

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Operative management of displaced radial neck fractures with ESIN in adults

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Study rationale: Displaced radial neck fractures in adults are not frequent compared to the same injury in children. Conservative treatment is not adequate to reduce the displacement and result in further complications. Reduction is necessary which is why open surgical methods with plates and screws are employed to treat displaced radial neck fractures. In children the managing displaced radial neck fractures utilising the Metaizeau method has shown lower complications than open surgery. We used this method in adults for the operative management of displaced radial neck fractures using elastic stabilising intramedullary nailing (ESIN).
Materials/patients and methods: Twenty adult patients with displaced radial neck fractures were treated using ESIN with a titanium elastic nail (TEN) following closed reposition under fluoroscopic control, with concurrent reposition of the displaced radial head with help from external manual manipulation to the proximal forearm. In 4 patients to reposition the displaced head of the radius it was necessary to use an external k-wire because closed manipulation was not successful. The k-wire was used to directly push the