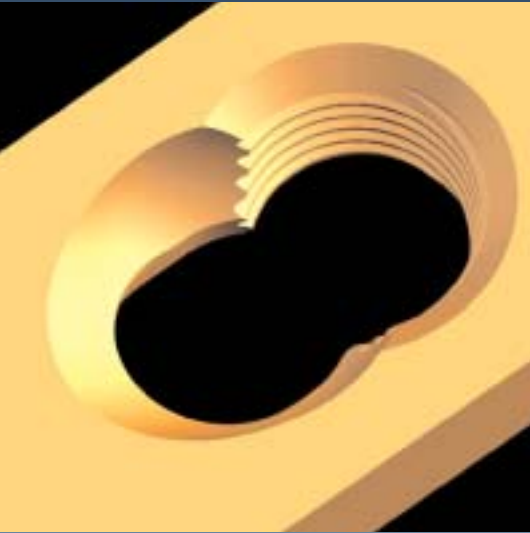


New Products from AO Development

Norbert P. Haas, AOTK Chairman



NEWS NEWS





R. Frigg

Current extensions of the LCP sets

Dear readers,

This is the first issue of the TK News. Bi-annually, we will inform you about the newest SYNTHES® products and their performance in clinical studies. We also want to take the opportunity to introduce some interesting surgeons, groups and their achievements. Because what makes these products and the underlying concepts so special, are the people behind them.

The AO Foundation has identified a demand for information about innovations and the clinical advantages of our new products. The TK News wants to give you this overview and a first glance. Our goal is to make you curious.

You can get more detailed information about these products from your local SYNTHES representative. The AO offers an annual CD ROM with all newly released products, called the TK Video. It can be obtained from the TK Office.

Please always keep in mind that none of the articles in the TK News are a substitute for the OP Techniques or our AO teaching tools.

I like to thank everybody involved in the production of this first issue, especially the surgeons. Please don't hesitate to contact me if you have suggestions for future issues.

Yours sincerely,

Norbert Haas

The conversion from AO standard plates to the LCP system was completed in 2001. After finishing the clinical documentation series and after one year of intensive clinical application, this system has proven its efficacy. The first official LCP training will be held during the AO Courses in Davos in December 2001. Based on experiences with the combination hole, several Experts Group of the AOTK developed new plates which provide additional advantages besides the combination possibility of compression screws and locking head screws. In a first step, adaptations to less invasive surgical techniques and implant shapes were made. The possibilities of such revisions were of advantage to the locking proximal humerus plate which has been designed according to this criteria. Guiding blocks for locking head screws (picture 1) as well as instruments to optimize fracture reduction respecting MIS principles are in progress.



Picture 1

A tendency to the use of smaller implants is noticed and redimensioning of the devices is a prevalent demand.

The picture of the one-third tubular plate (picture 2) shows the design flexibility of the LCP concept which enables an optimal angular stable anchorage despite a plate thickness of only 1mm.



Picture 2

The implications of these future widely accepted plate developments can be compared with current intramedullary nailing.

As for intramedullary nailing, the locking concept has also been worked out with conventional nails (slotted tubular nails) but the wide indication range and the optimization of this method could only be achieved after technical revisions and design adjustments of the nails, instruments and surgical techniques were made.

C. van der Werken

New Long Bone Products

4mm & 5mm Locking Screws for IM Nails

These locking screws are an alternative to the 3.9 & 4.9mm bolts. The double lead thread and self-tapping trocar tip result in easier insertion and a better purchase.



D. Höntzsch

Medium External Fixator

The Medium External Fixator is part of the AO ExFix system. The complete concept consists of three lines with different dimensions each:

- Tubular/ Rod Modular System
- Unibody System / MEFiSTO
- Hinged/ Adjustable Fixators

Compatibility of all lines and dimensions is ensured. All clamps are available as open and snap-on version. The indications are very flexible depending on the experience of the surgeon and the material available.

The indications for the Medium ExFix are

- Forearm and wrist with new clamps and/or the 8mm Distal Radius Fixator
- Humerus, distal tibia and ankle joint of small adults and children

The operation technique is similar to the 11mm system. The 3 tube modular technique is strongly recommended as standard method.

DHS: 2.5mm & 2.8mm Guide Wire

The new 2.5 (for the DHS) and the 2.8 mm guide wire from L605 steel (for 7.3 cannulated screws) have 28% greater stiffness and a drill bit tip for easier insertion. Calibration simplifies measurement.



DHS: Bending Templates

The new bending templates help contouring of the Lateral Tibial Head Buttress Plate and make anatomical adaptation easier.



SynReam

SynReam is a further development of the standard intermedullary reamer system. The shaft and core diameter have been reduced. This diminishes the intramedullary pressure and improves the clearance of chips during the reaming procedure due to the increased flute space. The new material (NITINOL) is elastic and provides the flexibility to ream the femur and the tibia. The closed tube allows easy and safe cleaning. The new coupling device ensures fast and easy coupling of the reamer heads and reduces coupling diameters. The reaming shaft with a reduction head at the front and a T-handle at the back provide a handy and effective reduction instrument.



2.7mm Calcaneal Reconstruction Plate
This plate is indicated primarily for hand and foot surgery and not limited to fractures of the calcaneus. It is available with 8 holes (64mm length) and 9 holes (72mm) and used with 2.7mm screws.



Bending Templates for special Condylar Buttress Plate
The bending templates help contouring of this special plate for the distal femur and make anatomical adaptation easier.



N. Suedkamp
 Removable Adaptor for the Humerus FlexNail
This device is designed for implant removal after former retrograde nail insertion. Since the extension piece is routinely removed after implant removal, the insertion handle cannot be attached anymore. Also the extraction device of the UTN which can be used for implant removal has no exact fit because of the missing extension piece. Here the removable adaptor enables exact fit of the UTN extraction device or the FlexNail insertion handle.



Compact Air & Power Drive: Top and Reciprocating Saw Blade for Sternum
The Top for Sternum offers the possibility of using the Reciprocating Saw Attachment for Thoracic surgery (mainly sternotomies). The Top for Sternum works as a saw guide which protects the tissue below the tip of the blade from being injured. The tip is guided and shielded in the guiding slit of the protection bow to prevent injury of the mediastinal structures.

Compact Air & Power Drive: Torque Limiting Attachment, 1.5Nm & 4Nm
The Torque Limiting Attachments permit safe screw insertion and tightening with a defined torque (1.5Nm or 4Nm). It can be used with every screw-plate fracture fixation system where a torque of 1.5 or 4Nm is needed. It features quick coupling for easy fixation of drill bits and screwdrivers with an AO shaft.

Battery Power Line: Reamer/Drill, Oscillator and Reciprocator
This new line of power tools is designed specially for knee, hip and heavy duty trauma surgery. With 175W all new devices are very powerful.
The Battery Reamer/Drill is robust and powerful during reaming. Attachments enable quick and stable coupling and fixation of tools. A pin driving attachment allows quick and easy setting of jig fixation pins during knee surgery.
The stand alone Battery Oscillator and Battery Reciprocator units both work very precise up to 14 000 osc./min and have 8 positions of saw head.
Several accessories are available for easy handling.



Colibri: Small Battery Drive Medullary Reaming

Due to a new Power Pack and Reaming Attachments which enable medullary reaming, the Colibri now can be used for the whole trauma range.

The Power Pack features a 14.4 VDC battery voltage and 0.5 Ah battery capacity. This leads to 20% more power and speed.

The Reaming Attachments are available with AO, Hudson, Trinkle, and modified Trinkle geometry.

All components of the Power Pack come in a separate VARIO case to prevent mixing up of components with the standard system.



Orthopaedic Cable System Phase II: Trochanteric Reattachment Device (TRD), 1.7 mm CoCr cable and Impactor instrument

The TRD is indicated for reattachment of the greater trochanter following osteotomy in total hip arthroplasty or fracture. Proximal hooks loop over the top of the greater trochanter rather than piercing the cortex. Smaller distal hooks prevent rotation and migration. The cables are preassembled. Cable crimps fit into slots in the device for easy access, handling and cable alignment. Slots within the TRD prevent crimp migration. The impactor attaches easily to the proximal portion of the TRD, and holds it firmly in place.

Large and Medium Periarticular Reduction Forceps

The Medium and Large Periarticular Reduction Forceps are designed to provide secure, minimally invasive intra-operative reduction of intra-articular and periarticular fractures in the distal humerus, distal femur, distal tibia, and proximal tibia. The pointed ball tips securely hold the bone with minimum contact. It features a speed lock for secure clamping.



Ortholine: New Saw Blades

These new Saw Blades are an extension in length and width of the existing SYNTHES saw blade range. The existing saw blades have been very successful, especially in knee surgery. Lower heat generation and shorter cutting time further reduce the risk of bone necrosis.

Ortholine: Universal Battery Charger, 2 & 4 charging bays

The Universal Battery Charger substitutes the existing battery charger for the Power Drive and the Colibri. It is available in versions for charging either two or four batteries at the same time. The 2 bay version can be upgraded to the 4 bay version. It can be used for all different kinds of existing and near future SYNTHES batteries. It features an automatic mains voltage selection (110-240 VAC) and prevents memory effect with NiCd batteries.

LCP-System: Handle for Torque Limiting Attachments

The handle provides the possibility to lock screws manually without the need for an extra screwdriver. It gives better control on the handling and locking direction and reduces the risk of cross-threading of the hexagonal drive. The handle is fully compatible with all torque limiting attachments for Compact Air & Power Drive. No special coupling is necessary due to the easy and quick "push-and-pull" system.



LCP-System: Centering Sleeve for Kirschner Wires 2.0mm (Large Fragment)

The Centering Sleeve can be inserted into the threaded drill guide and is designed for 2.0mm Kirschner Wires. It provides a direction's and position's control for the head-locking screws and therefore reduces the risk of inserting the screws in a improper position, especially in the T- and L-Plates where holes in the proximal resp. distal part are not orthogonal to the plate surface.



Proximal Tibia Locking Compression Plate

The indications for this 4.5mm plate system are for proximal tibia fractures including lateral splits, depressions, bicondylar splits, medial splits and dissociation from the shaft. It enables a fixed-angle construct in the metaphysis while providing the flexibility of axial compression and locking capability throughout the length of the plate shaft. The head of the plate is anatomically pre-curved.



R. Schmelzeisen / R. Gutwald New Maxillofacial Products

Universal Trocar Device
incl. Lag Screw Device

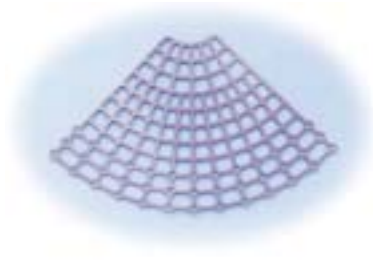
The Universal Trocar Device is a transbuccal instrumentation set that supports a simplified intraoral plate and screw application. It allows the placement of 2.0mm–3.0mm screws through the buccal tissues for the fixation of mandible fractures, reconstructions and orthognathic procedures. System features include: The Lag Screw Cannula and Pointer make up the Lag Screw Device that is used to perform the lag screw technique in symphyseal fracture fixation of the mandible. One universal handle to simplify the transbuccal system by easily accepting all trocar attachments. It will replace all existing transbuccal systems.



Indicated for symphyseal fracture fixation of the mandible

Orbital Mesh Plate

Since the availability of mesh plates for general use in the craniofacial area, many surgeons have found this material to be effective for orbit reconstruction. To properly fit a mesh plate into the orbit, significant cutting and contouring is required. The Orbital Mesh Plate was designed to minimize this time consuming task. It is radially configured such that the user can cut an appropriately sized, pie-shaped portion. The small end of the cut portion is placed at the apex of the orbital socket fanning out toward the anterior orbit. In addition, segments of the plate can be cut out to manoeuvre around anatomic elements. Each radial arm is fitted with 3 screw holes for anchoring the plate in a variety of locations within the anterior orbit.



1.5 mm Ti Self-Drilling Brow Lift Screw with StarDrive

The 1.5mm Brow Lift Screw is indicated for insertion into the frontal bone during brow lift procedures. Due to the selfdrilling insertion manner and the StarDrive recess the screws improve speed and ease of insertion. The titanium screws are available in 14 mm and 18 mm of length.



Anatomic Orbital Floor Plate

An updated, solid style orbit plate was also required in order to provide users with adequate choices for orbit reconstruction. As in the case of the mesh plate, the anatomical plates are designed to minimize trimming and to facilitate shaping for fitting into the orbit area. The large plates have a large medial wing, identified by an M-shaped cut-out, and a smaller lateral wing. The small plates are circular in design with cut out reliefs for contouring.



Resorbable Tack Fixation System

The system is indicated for fractures of the craniofacial skeleton and reconstructive procedures of the midface and craniofacial skeleton. The resorbable tacks and the existing, approved 1.5mm resorbable screws are very similar in design and size. They are manufactured from the same polymer and in the same processes. Both products are made from 70:30 poly (L/DL)-lactide. The tacks are inserted into pre-drilled holes in bone to secure resorbable plates and provide rigid fixation. The implants utilize circumferential ribs to provide sufficient retention. Compared to the existing 1.5mm resorbable screws, the tacks provide comparable strength in pull-out and shear over time. The driver grasps the tacks around the head to provide retention during use. During insertion, an internal shaft automatically disengages the tacks from the instruments and drives the tack head into the countersunk holes of the resorbable plates. Thus, surgical operative time is reduced because the holes are drilled, not tapped, and the tacks are pressed into bone holes rather than threaded in, as the resorbable screws are.

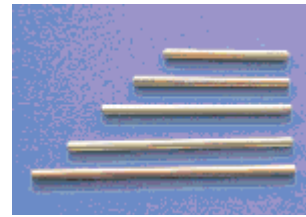
New Spine Products

USS: TAN Rods

USS rods in titanium alloy (TAN) have the same indications as the USS rods hard made from commercially pure titanium. Titanium alloy (TAN) has a higher yield point (transition from reversible to irreversible deformation) as commercially pure titanium.

Using TAN rods, the surgeon encounters less intraoperative loss of correction while treating a severe scoliosis.

Extensive mechanical testing will be closed by the end of the year.



Small Stature USS

Indications: This system allows reduction and stabilization of the thoracolumbar spine for the treatment of deformity, degeneration, and trauma. Features such as profile height and implant shape have been modified to accommodate pediatric patients and patients of small stature. The low profile and dual-opening feature of the Small Stature system offers a more competitive system while retaining the AO principles for the correction of scoliosis and other sagittal plane deformities.



The new USS Paediatric Pedicle Screws are easy and quick to insert. This is due to the rounded and threaded tip and the double lead design, which allows for an immediate grip in the bone and a depth gain of almost 4.0 mm per 180° turn.

For insertion into the bone, attaching the screws to the new sticks with the hex coupling is fast and safe.

Cervical Transconnector

The cervical transconnector is indicated as an adjunct to posterior cervical reconstructions using the CerviFix system for cervical trauma and tumor. The pre-assembled Transconnector can easily be placed after the CerviFix construct is in position. Each clamp offers up to 25 degrees of angulation and bridges rod distances from 32mm to 72mm. The bushings within the clamps also allow the clamps to be placed offset to each other. The assembly can be rigidly locked using a crimping plier. If necessary, it can be easily unlocked with the same instrument.



T-PLIF Spacer System

Transforaminal Posterior Lumbar Interbody Fusion (T-PLIF) is performed to treat degenerative disc disease, recurrent disc herniation, spondylolisthesis, spinal stenosis, and failed back syndrome.

The T-PLIF System is an allograft implant and instrument set that has been designed for use in transforaminal posterior lumbar interbody fusion procedures. This procedure was pioneered by Professor Jürgen Harms of Germany. Unlike a PLIF approach, this obviates the need to enter the spinal canal and allows access to the disc space from a lateral approach. Additionally, revision PLIF patients normally have a lot of scar tissue precluding access to the disc space. This system overcomes this problem. Synthes is the first-to-market with a dedicated set of instruments and implant for this procedure. Initial surgeon feedback has been positive and this is expected to be a very good niche product for posterior interbody fusions.



ALIF Spacer Instruments

Anterior Lumbar Interbody Fusion (ALIF) is performed to treat degenerative disc disease, recurrent disc herniation, and failed back syndrome.

The ALIF System is an allograft implant and instrument set that has been designed for use in anterior lumbar interbody fusion procedures. The SynCage and the Femoral Ring Allograft Spacer are the predecessors of the ALIF Spacer. The ALIF Spacer is an entirely machined cortical allograft spacer that has convex inferior & superior surfaces & a kidney-bean geometry that closely approximates the anatomy of the lumbar vertebrae. The ALIF instruments are used to distract, size & facilitate placement of the ALIF Spacer. Feedback from clinicians has been positive and this is expected to be a well-received product in the anterior lumbar interbody fusion arena.



Click'X: 5.5mm Screw

The screw is a line extension the existing Click'X screw range and fully compatible. It is available in lengths between 30mm and 65mm.



Small Frame

The smaller ring for SynFrame is 60mm less in diameter than the original version. The intended use is primarily for dorsal micro-disc approach where the surgeon can support his hands during the surgery under the microscope and secondly for approached to the cervical spine.



Tiltable Frame connector

If the SynFrame is used in the cervical spine of for lateral approaches to the thoracolumbar junction the ring shall be "buckled" during the surgery.

With the new connector the SynFrame can be adapted to the shape of the patient.



Spine Cable

The Spine Cable System is indicated for the following spinal applications:

sublaminar, interspinous, or facet wiring in cervical spine trauma; correction of spinal deformities, scoliosis, kyphosis, and spondylolisthesis in spinal reconstructive surgery; and as an adjunct to degenerative surgery.

The Spine Cable features a 1.0 mm diameter cable fabricated with a (8x7) + (1x19) weave designed for flexibility and control. Cables have preassembled crimps and a retrieval loop at the end of the cable facilitates sublaminar passage. Cables are available in single and double lead configurations in both titanium alloy and stainless steel.



New Shoulder Products

Proximal Humerus Nail (PHN) with Spiral Blade

The new nail is applied antegrade for proximal humerus fractures and has two different techniques for proximal locking, a spiral blade or two oblique screws. It is indicated for two and three part fractures and requires sufficient closed reduction techniques prior to nail insertion.



Locking Proximal Humerus Plate (LPHP)

The new angular stable device is a low profile precontoured plate for the proximal humerus and is indicated for subcapital two- and three-part fractures, but can also be used for four-part fractures. Due to its low profile the plate can be applied very proximally. At the proximal part of the plate there are additional small holes for the fixation of sutures which can be applied into the rotator cuff tendons to neutralize muscle forces.

PHILOS

The new angular stable device (available as on request only) is a low profile precontoured plate for the proximal humerus (proximal part of the plate is a little longer in comparison to LPHP) and is indicated like the LPHP for subcapital two- and three-part fractures, but can also be used for four-part fractures. Due to its low profile the plate can be applied very proximally. At the proximal part of the plate there are additional small holes for the fixation of sutures which can be applied into the rotator cuff tendons to neutralize muscle forces. In comparison to the LPHP the PHILOS has additional oblique screws for the humeral head.



H. Resch

Humerus Block

The **Humerus Block** is indicated for the treatment of subcapital and intraarticular proximal humeral fractures. The **Humerus Block** consists of two K-wires and the actual block for the fixation of K-wires at the humeral shaft. In a half open procedure the **Humerus Block** is inserted through a small incision at the onset of the M.deltoideus. An open procedure is also possible. Through fixation of the K-wires in the block and the cortex rotational stability is achieved and a collapse of the head prevented. Controlled gliding and positioning of the head fragment to the shaft enable fast healing. The **Humerus Block** was tested in over 100 clinical cases and showed excellent results.



TEN Application for Clavicle Fractures:
Bend Awl

In order to use the TEN for treatment of simple clavicle fractures it requires an opening device for medial or lateral TEN insertion. The Bend Awl allows to properly open the clavicle from either side to enable adequate TEN insertion.

J. Rudigier / G. Germann / R. Steiger

New Hand Products

Interlocking T-Plate: 2.0mm & 2.4mm

The **Small Interlocking T-Plate** is part of the **Compact Hand Set** and available in the dimensions 2.0mm and 2.4mm. Indications for the use of this plate are fractures of larger bones in the hand, fractures of the distal radius, ulna or fractures in the foot. Both plates are designed as T-plates. The plate holes allow either excentric drilling to achieve compression or the use of angle stable screws. The main advantage of the angle stable implants is stability against secondary redislocation, when there is no stable buttressing of the fragments under the plate or in the opposite cortex because of comminution or osteoporosis. This is often the case in extra- or intraarticular fractures of the base of the first metacarpal or fractures of the distal radius.



H. Zwipp

New Foot & Ankle Products

Locking Calcaneal Plate

The Locking Calcaneal Plate is indicated for fractures and osteotomies of the calcaneus including, but not limited to, extra-articular, intra-articular, joint depression, tongue type, and multifragmentary fractures. This plate allows fixation even for very comminuted fractures. It allows earlier full weightbearing and reduces the need of bone grafting. It is applied from a lateral position. The plate is available in long and short, left and right designs. It is versatile with 15 holes to address multiple fracture patterns and can be cut to shape. Bendable taps provide support for the anterior process and plantar fragments. Angled and ascending holes buttress the sustentaculum and provide better support of the calcaneotalar articular surface. The locking screws provide standard bicortical and/or unicortical fixation. The locking holes are threaded.



Cuboid Plate

The Cuboid Plate enables surgeons to treat complex fractures of the cuboid with one versatile, anatomically specific implant that offers many points of fixation. It enables fixation of the reconstructed articular surfaces and keeping of length of the lateral column of the foot. The eleven holes accept standard AO 2.0 & 2.4mm cortex screws. It is applied to the lateral side.

The Cuboid Plate is part of the new Modular Foot Set which will be introduced shortly.



P. Holzach / P. Lobenhoffer

New Knee Products

TOMOFIX: Guiding Blocks

The Guiding Blocks for TOMOFIX are indicated for medial and lateral high tibia osteotomy and lateral distal femur osteotomy. The Guiding Blocks facilitate the placement of the LCP drill sleeves in the head portion of the plates. The Guiding Blocks for the lateral high tibial osteotomy and for the lateral distal femur osteotomy come in a left and right version. The benefits of osteotomy fixation with TOMOFIX plates are early pain-free mobilization of the patient and a minimal risk of secondary loss-of-correction of the osteotomy. Open or closed wedge osteotomy technique is possible with TOMOFIX plates.



J. Hunter

New Paediatric Products



Osteotomy of the Proximal Femur:

90° & 100° Toddler Osteotomy Plates

The toddler angled blade plate was one of the first products to result from the formation of the Paediatric Expert Group. The original inventory of blade plates for children included an infant plate with a T profile of 2 x 8mm, blade lengths of 26 and 32mm and a side plate based on a one third tubular plate. This is suitable for infant work when protected by a hip spica (such as in DDH). The next plate was the child plate, which had a T profile of 4.5 x 11 mm, suitable lengths, but was based on a side plate that took 4.5 screws. This plate is too bulky for slim children with cerebral palsy who have narrow femora, and fractures through screw holes were seen.

The Toddler plate fills the gap. The T profile is 3 x 11 mm, lengths 26, 32, 38mm, offsets of 4 and 8mm, and a side plate based on a 3.5 mm DCP taking 3.5mm screws. Originally available as a 90 degree plate only, it is now also available in a 100 degree version to allow placement in the centre of the femoral neck in children with severe CP.

N. Haas

Be part of it – How AO Development works!



The AO Foundation develops new operation techniques, implants and devices in an unique partnership. Development, clinical testing and the educational material of these products are carried out by an organization of medical-technical committees—the TK-System.

The TK-System consists of 14 Expert Groups (EG) and the Technical Commission (AOTK). Members of these committees are five surgeons who are known specialists in the relevant field, three engineers from our commercial partners

and one from the AO Development Institute. The AO Research Institute is represented with one group leader to link research and development activities. These groups are an open market of ideas concerning relevant clinical problems and possible solutions. After identifying medical needs and defining critical characteristics, the engineers present technical solutions. These are discussed, adapted and tested until the EG proposes the development to the AOTK for final approval. Only the AOTK can release products to the market, so it acts as an independent Quality Assurance Board.

Two facts are worth to be stressed: First, in all committees of the TK-System, the medical members have the majority. Second, you can be part of it. If you have an idea for a new product, please don't hesitate to contact me anytime.



Dr. Michael Plecko's contribution to the development of the Synthes locked proximal humerus plates started in 1996. Based on an anatomically designed angle-blade plate in combination with expansion head screws from the cervical spine locking plate system, first encouraging clinical results were achieved. In 1999, the newly formed Shoulder Expert Group (SHEG) adopted this concept of angular stable proximal humerus fixation.

Michael Plecko's openness for further ideas enabled him to become one of the key surgeons in the progress of this project. The inclusion of the locking compression plate (LCP) concept verified its benefit in biomechanical test and a first successful clinical series. The close and constructive collaboration between him, the Expert Group and producers finally led to the approval of the Locking Proximal Humerus Plate (LPHP, see page 10) by the AOTK early 2001. His contribution to the writing of the surgical technique and future assistance in the train-

ing at courses will aid in the dissemination of this new AO surgical technique.

Michael Plecko was born May 21st 1960 in Klagenfurt Mariahilf, Austria. He started studies at the medical faculty at the university of Vienna. At 24, he passed his medical state examination and started shortly afterwards working as Secondary doctor at the Trauma Hospital Graz. Besides his education as specialist for traumatology he followed an additional training in hand surgery and sports medicine. Since April 1999 he works as assistant medical director at the Trauma Hospital Graz. In 2000, he undertook a fellowship at Mayo Clinic Rochester (Prof. Morrey) to intensify his experience in elbow surgery and he became member of the AO. Additionally to his occupation at the Trauma Hospital Graz, he built up his own medical practice for traumatology and sports medicine. In 1992, he got married to Dr. Barbara Plecko-Startinig. His rare free time he prefers spending in the mountains.

New Products from AO Publishing

- AO Principles of Fracture Management 2001 DVD-ROM with narrated AO Teaching videos
- Bone in Clinical Orthopedics–The new standard in bone biology
- Müller AO Electronic Long Bone Classification
- AO Recommended Literature–check out the Internet version

Visit us on the internet at: www.aopublishing.org



LISS Distal Femur: Study Results

The LIS System Distal Femur (DF) is a new, fixed-angle implant system for the treatment of distal femoral fractures according to the principles of "Minimally Invasive Surgery".

From December 1996 to November 1998 116 fractures (112 patients) were treated with the new stabilization system as part of a prospective multicenter study. The follow-up period was 13.7 months on average. Principle clinical investigator was N. Haas, Berlin.

The criteria for inclusion were distal femoral shaft fractures and supracondylar and intraarticular femoral fractures of all degrees of severity. In this study, thirty-one distal femoral shaft fractures and eighty-five supracondylar and/or intraarticular femoral fractures were treated. There was a total of 45% (n=52) complex intraarticular fractures. With reference to the fractures treated, the follow-up rate was 93%. In 90% of the cases treated and followed up, fracture consolidation during the observation period could be confirmed.

Secondary cancellous bone grafting was only necessary in six cases. There were four cases of infection requiring surgical and antibiotic treatment. Implant loosening was observed in four cases, some of which could be attributed to technical errors during the operation. In contrast, secondary depressions during the course of healing were not observed at all.

The results of the study show that the new internal fixator is an excellent, safe procedure for the treatment of almost all fracture types, provided that thorough preoperative planning is performed and the surgeon has a sound knowledge of the operative technique. There is generally no need for primary cancellous bone grafting.



Female, 27 years



Polytraumatized patient with intraarticular distal femur fracture

LISS Proximal Lateral Tibia: Study Results

The LIS system for the proximal tibia is an anatomically pre-contoured implant for the treatment of fractures of the proximal tibia.

In the course of a prospective clinical study, 135 patients with 138 fractures were treated with the new system at 13 European trauma centers from June 1998 to March 2000 and the cases were documented. The follow-up period was at least 12 months and ended in June 2001. Principle clinical investigator is C. Krettek, Hanover. AOCID monitored the study.

The inclusion criteria took in fractures of all degrees of severity of the proximal tibia and the tibial shaft. The fractures were classified as 110 fractures of the proximal tibia (AO 41) and 28 tibial shaft fractures (AO 42) according to the AO fracture classification system; type C fractures accounted for a total of 66% (n=91). A follow-up rate of 94% was achieved with reference to the number of fractures treated. The results of the study were evaluated immediately in close collaboration with the Principal Clinical Investigator. It is expected that the evaluation will be completed by the end of 2001; the results will be summarized and published in a final report.



6 month post op



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