Breaking the Mold: Conceptional Blockbusting at the Vienna Medical Center

Prof. Dr. MICHAEL ZIMPFER, MBA, FIPP

Goals and new Developments

Effective medical interface management

A unique, strictly goal directed and close interdisciplinary approach, with frequent 360 degree evaluations, of the medical disciplines anaesthesiology, critical care, pain management and neurosurgery is yielding remarkable success in terms of alleviating pain, shortening recovery periods and avoiding hospitalization.

The direction of impact focuses on three main topics:

Minimally invasive pain therapy, i.e., without open surgery to treat

(1) Disorders of the spine, mainly the lumbar portion causing lumbago and/or sciatica and the cervical spine eliciting pain in the neck, head shoulders and arms, all together being often associated with feelings of numbness or weakness.

(2) Headache with the most feared subtypes including trigeminal neuralgia and cluster headache.

Important new treatment modalities in this respect include ultrasound- or X-ray-assisted nerve root blocks, catheter lysis, radiofrequency ablations, cryo-analgesia and spinal cord stimulation, a kind of biological interfering transmitter.

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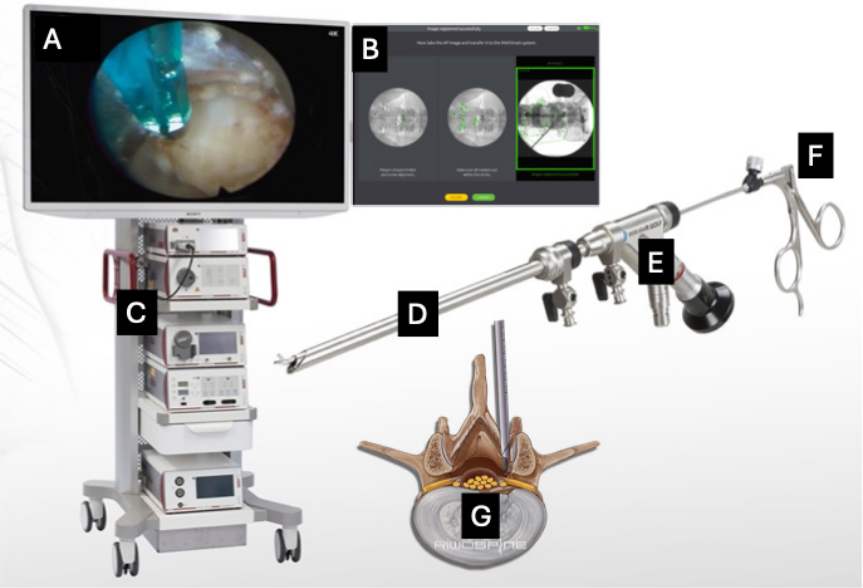
Joint arthrosis, predominately the knee, the hip, shoulder and, fortunately less frequent, the ancle joint.

One of the authors of this article (MZ) has personally witnessed the fascinating development of endoprosthetic joint replacement due to arthrosis, as well as with the etiology of trauma, finally tumor prostheses. However, all of these are associated with more or less traumatic surgery, require at least short periods of hospitalization, also not all patients are completely satisfied with the outcome.

So, focusing on different scenarios among various age groups, it seems to be worthwhile to think about alternatives, i.e., adhere to the preservation of the patients own but diseased joints. In this connection, also remarkable developments have been achieved by the so-called regenerative medicine: This includes harvesting bone marrow to achieve mesenchymal stem cells, also employing various autologous blood products, such as activated platelets, autologous conditioned serum, or autologous platelet concentrate. At first, altogether, this led to a



drastic the reduction in cortisone consumption. This is very important because of the well-known side effects of cortisone including osteoporosis, increasing blood sugar levels as well as a damage to cartilage and tendons.

Minimally invasive, navigation aided spine surgery:
Finally, again let's focus on back- and cervical pain. As mentioned earlier, in this field, although minimally invasive therapies, i.e., without cutting the patient open, are often sufficient, it still becomes necessary to perform open, decompressive and / or stabilizing procedures. – Particularly also in this situation, with the background of respective goal setting, it became very clear that also these respective surgeries – and this is a true art – have to be kept as minimally invasive as possible. More clearly, with regards to removal of herniated discs and bony decompressions, we are now talking of wound diameters in the size of 5 mm, i.e., buttonhole size. As to be expected, the following clear-cut advantages have been proven so far: Less trauma, less pain, and much less risk of scarring with recurrent nerve compression. These surgeries are outpatient-based, so with no need of hospitalization as well as distinctly shortened recovery.

The picture above illustrates our state-of-the-art set-up for full-endoscopic spinal surgery. The spinal endoscope (E) is advanced through a small metal tube (working sleave D) into the spine at the exact location of nerve compression (G). The technology of the endoscopic tower (C) enables the surgeon to get a crisp high magnification picture of the surgical site within the spine on a 4k monitor. Small instruments, such as forceps (F), are introduced through the endoscope to remove small portions of soft tissue and bone which compress spinal nerves. As the first institution in Austria, we also employ a cutting-edge electromagnetic navigation unit (B). This allows us to further minimize the tissue trauma during and the risks of surgery, as well as operating time. It further reduces the exposure to x-rays for our patients and our surgical staff and ultimately improves the well-being of our patients.

Prof. Dr. Michael Zimpfer, MBA, FIPP, founder & head

About the authors

Dr. Stefan Grossauer, MBA, website: www.neurochirurgen-wien.com, is an attending neurosurgeon at the Department of Neurosurgery at the Medical University of Vienna and head of the Spinal Research Unit there.

In his 20-year career as a neurosurgeon, he has performed thousands of microsurgical operations on the spine and the brain and held leading positions at major neurosurgical centers in Germany, Austria, and the United States of America. He is providing minimally invasive treatments for all kinds of spinal conditions.

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Based on his knowledge and skills of pain medicine as well as on the condition of examination, he has been awarded to become a fellow of interventional pain practice, world institute of pain.

Dr. Zimpfer is the founder, owner and head of the Vienna Medical Center – Zentrum für Medizin und Gesundheit, located in the

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