

Commentary on Special Issue- Minimally Invasive Spine Surgery

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Recently, Minimally Invasive Surgery (MIS) has been broadly employed in the spine field to decrease approach-related morbidity associated with conventional open surgery. This might minimize damage of paraspinal muscles, blood loss, risk of infection, postoperative pain, functional disturbance, and prolonged hospitalization. Hence, application of a MIS technique can be beneficial for the various spinal pathologies, especially in elderly or debilitated patients desired long spinal constructs.

In the special issue of minimally invasive spine surgery, 7 valuable articles could have been published. They all include a lot of beneficial informations.

Dr. Miyajima et al. [1] applied MIS for adolescent idiopathic scoliosis (AIS) and reported advantages of MIS over standard open procedures seem to include decreased length of stay and blood loss although increase in operative time was noted in the MIS group. Application of MIS technique for posterior surgery of AIS is challenging and revolutionary. However, I also feel sure further follow-up will be critical to evaluating the longer term outcomes of the MIS approach to AIS treatment as they mentioned.

Dr. Kuroki et al. [2] performed long thoracolumbar (TL) spinal stabilization by using a MIS posterior approach in 4 patients who affected with trauma or malignant tumor. They concluded that long TL spinal stabilization with a MIS technique is less invasive and useful method for the patients who are desirable to avoid major surgical procedure.

Dr. Sarikafa et al. [3] also employed minimally invasive stabilization for thoracolumbar fractures. They reported minimally invasive instrumentation of the spine reduces intraoperative blood loss, soft tissue trauma, operative time, infection rates, and hospital stay. They expect that future developments in minimally invasive technology will lead to improved results with increased indications and applications.

Dr. Archavlis et al. [4] retrospectively reviewed 24 patients who underwent minimally invasive spine decompression, minimally invasive transforaminal interbody fusion (MI-TLIF), and percutaneous transpedicular instrumentation for degenerative spondylolisthesis with severe stenosis and facet joint osteoarthritis (FJO). Then, they expressed that MIS for severe stenotic spondylolisthesis leads to adequate and safe decompression of lumbar stenosis and results in a highly significant reduction of symptoms and disability. MI-TLIF and percutaneous pedicle screw insertion constitute a promising treatment alternative for patients with severe stenosis and FJO.

Dr. Lubansu et al. [5] compared the quality of disc preparation, volume of bone graft and clinical results in a group of patients who underwent MIS-TLIF with discectomy and endplate preparation aided by an automated discectomy device, the enSpire™ Flex MIS Surgical Discectomy System to a control group with classical, manual instrumentation for disc preparation. They demonstrated that they can optimize the extension and quality of the discectomy, increase the volume of bone graft, and achieve better clinical outcomes by using the enSpire™ Flex MIS Surgical Discectomy System.

Dr. Sairyo and Dezawa [6] reported the excellent clinical outcome of percutaneous endoscopic discectomy (PED) for 10 high-level athletes. Subjects returned to their sport 6 to 8 weeks after surgery and of the patients, 9 (90%) had complete return to play, but one (10%) showed

recurrence. They emphasized that the minimal invasiveness and good clinical outcome of PED favor it as a gold standard for disc surgery in athletes.

Dr. Tumián et al. [7] reported 3 patients with previous midline lumbar surgery underwent revision surgery with minimally invasive approaches for management of either: infection, recurrent radiculopathy, or symptomatic heterotopic bone formation. They conducted that minimally invasive spinal surgical techniques have the capacity to adequately address focal complications that have occurred with midline surgery. These techniques preclude the need to reopen a previous incision, which is especially valuable in those patients with delayed healing capacity, extensive previous surgery or previous infection.

I have no doubts all authors put a lot of effort into these article. Through these projects, they have showed the unknown possibilities of minimally invasive procedures for various spinal disorders. I feel certain that these papers must contribute daily clinical works of the readers. I also look forward to the continuing growth of this innovative technique more than ever.

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