

Anterior Spondylodesis in Cases of Injuries to the Cervical Spine Applying Expandable Screws – Indications and First Results

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Introduction

In most cases spondylodesis of the cervical spine is performed from anterior following the technique of Smith-Robertson. Different implant systems are available. Very unstable injuries should be treated either from anterior using constrained systems maybe in combination with external support or in a combined approach. In cases of implant loosening, however, new screws can not be placed and the revision surgery causes a longer fusion.

Materials and Methods

In 18 months in 15 consecutive cases spondylodesis was performed using titanium plates, expandable screws and autologous bone from the iliac crest. Postoperative treatment included external support for 8 weeks. X-rays and scans to control the fusion or loosening were performed in 6 and 12 weeks intervals.

There were no fusions, no signs of loosening, nor implant failure. Indications were 6 revisions caused by loosened screws of other systems and post operative kyphotic deformities, 2 revisions caused by implant loosening and deformity with progressive neurology as well as 5 very unstable injuries to the cervical spine with luxation in combination with lamina fractures in several segments. 2 unstable bajonett fractures in 2 patients with spondylitis ancylosans were treated from anterior only. There was 1 complication with 1 spondylitis resulting in implant loosening.

Discussion

The advantage of expandable screws is (among others) the constrained, monocortical application and the high pull-out resistance of the implant. The increased diameter and the design of the screws make possible the re-use of the threads and therefore do not cause a longer fusion. Very unstable injuries may be safely instrumented from anterior only. Our results show that the method discussed is equal to other techniques and in selected cases avoids combined approaches.