

ORAL PRESENTATION

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Is there a correlation between pelvic incidence and proximal junctional kyphosis (PJK) after surgery for adult scoliosis?

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Background

The proximal junctional kyphosis (PJK) occurs from 17% to 39% after posterior arthrodesis for spinal deformity. The aim of this study is to verify a possible correlation between PJK and pelvic incidence (PI) in the treatment of adult scoliosis.

Materials and methods

78 consecutive patients (63 women - 15 men) were included in the study, mean age of 66 years (range 60-77), surgically treated at our Division between 2000 and 2005. In all cases the diagnosis was idiopathic scoliosis, with positive sagittal imbalance. In 29 cases (37.2 %) a previous arthrodesis was performed. All patients were treated with posterior arthrodesis with pedicle instrumentation and a pedicle subtraction osteotomy (PSO) in 17 cases and Smith Petersen osteotomy (SPO) at multiple levels in 25 cases. The clinical and radiographic questionnaires (Oswestry, VAS) filled in before and after surgery and at final follow-up were evaluated.

Results

After a mean follow-up of 3.8 years (range, 2-8) 18 cases of PJK occurred (23.7 %). In case of "short" synthesis (upper instrumented vertebra "UIV" between T10 and L1), the incidence increased to 50% (9 cases). PJK always occurred within 2 months after primary surgery, all cases symptomatic and evolutionary and required a surgery recovery. Considering the value of pelvic incidence (PI), patients were divided into 2 groups: Group A ($PI < 55^\circ$: 48 cases) and Group B ($PI > 55^\circ$: 30 cases). In Group B we found a greater loss of lumbar lordosis (19.2° vs. 7.7°), sagittal

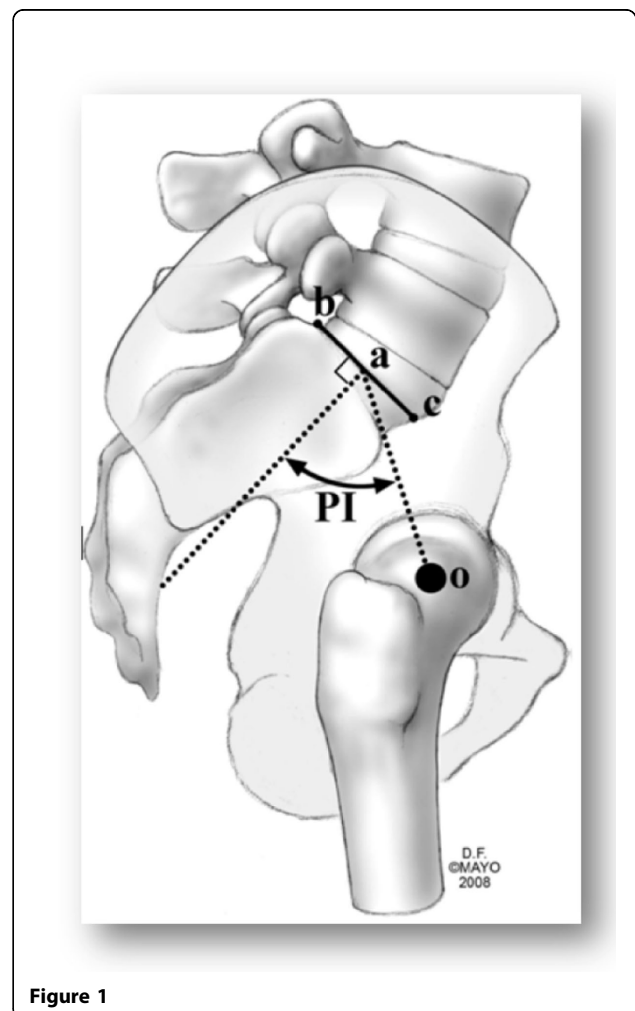


Figure 1

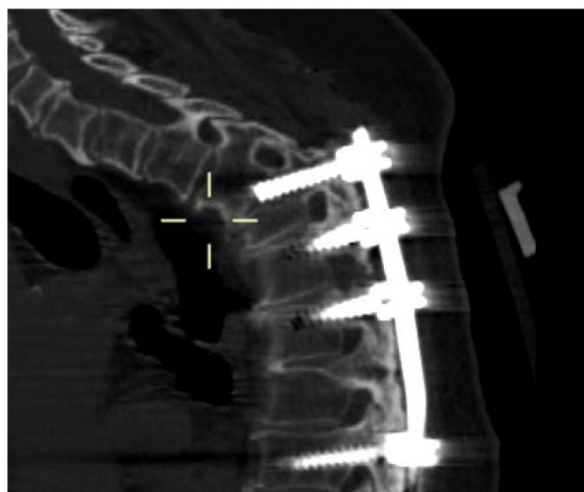


Figure 2

balance correction (28.7 % vs. 8.4 %) and we found also a higher incidence of PJK (40% vs. 12.5 %) at final follow-up.

Conclusions

The PJK is an important and not so rare complication in spinal deformities surgery. Our data showed that a “short” synthesis (UIV between T10 and L1) and a high PI ($> 55^\circ$) is associated with a high risk of developing PJK. Patients with high pelvic incidence, thus requiring a more aggressive surgical treatment, such as with osteotomies, to achieve greater lumbar lordosis and correct sagittal balance.

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