Ti-TaMED

MANUFACTURERS OF QUALITY SURGICAL IMPLANTS

THE USE OF THE TI-TAMED SPINAL SYSTEM (TSS) FOR POSTERIOR CORRECTION OF IDIOPATHIC SCOLIOSIS

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INTRODUCTION

The first cases using the TSS for the correction of deformities were performed independently by 2 spine surgeons in Cape Town, South Africa, in 1998.

They used both the posterior approach, combining screws, rods, wire and hooks and the anterior approach using screws and a single rod. The screws used have been the permanently uniaxially articulating (mobile/dynamic) type.

TECHNIQUE

The technique used in posterior corrections is to translate the spine towards the prebent rod. The steps involved are:

1) Insertion of 1, 2 or more screws at the caudal end. The more screws are used, the more of a correction of the curve will occur as the rod is brought towards the midline.
2) Placement of either a single pedicle hook cranially, or in combination with a transverse process hook to form a claw configuration.
3) Preparation and passing of sublaminar wires, using the monofilament titanium wire. Some surgeons would prefer to place more hooks or screws.
4) Bending of the rod to create the desired sagital alignment/kyphosis. The rod to be used is the Flat rod. This has a single flat facet that is positioned in the caudal screw, so that the underside of the cap is aligned with the flat of the rod, thereby preventing rotation of the rod. To achieve the correct alignment during bending of the rod, a rigid screw is temporarily placed onto the flat-ended part of the rod. This allows for visual orientation of the plane of the inserted caudal screw with this rigid screw. The necessary kyphosis can now be bent into the rod in the correct plane.
5) The rod is inserted into the caudal screws, placed between the wires and finally inserted into the cranial hooks/screws.
6) The caudal screw caps are tightened and a slight degree of distraction (enough only to snug the hooks against bone) is applied.
7) The wires are sequentially tightened, ensuring that enough longitudinal traction is applied.

EXAMPLES OF DIFFERENT CURVES:

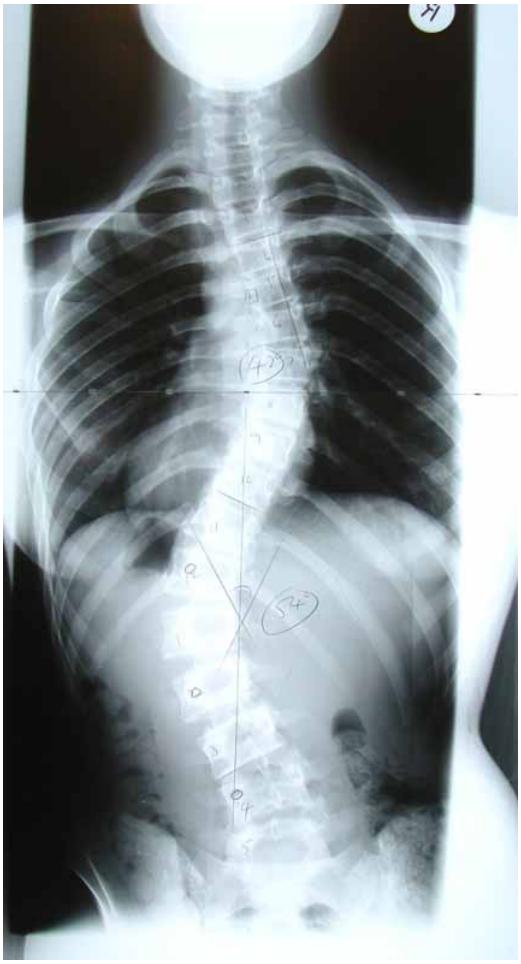
The technique used in the following examples makes use of a single rod. Please note that the deformity has been corrected by translating the curve towards the rod, not by distraction. Some of the X-rays show the use of a single distal screw – the surgeon has modified his technique and now uses multiple distal screws to achieve maximum correction. Although there has been a trend towards using double rod constructs, these are obviously approximately double the cost of these single rod constructs. In the South African setting, it is appropriate to use the most cost-effective constructs without compromising clinical results. It can be argued that these *curves* could have been corrected to a slightly greater degree with dual rod constructs, but the *clinical* results are entirely satisfactory.

There is obviously no reason why these corrections could however not have been performed using dual rod constructs if this is the surgeons preferred technique.

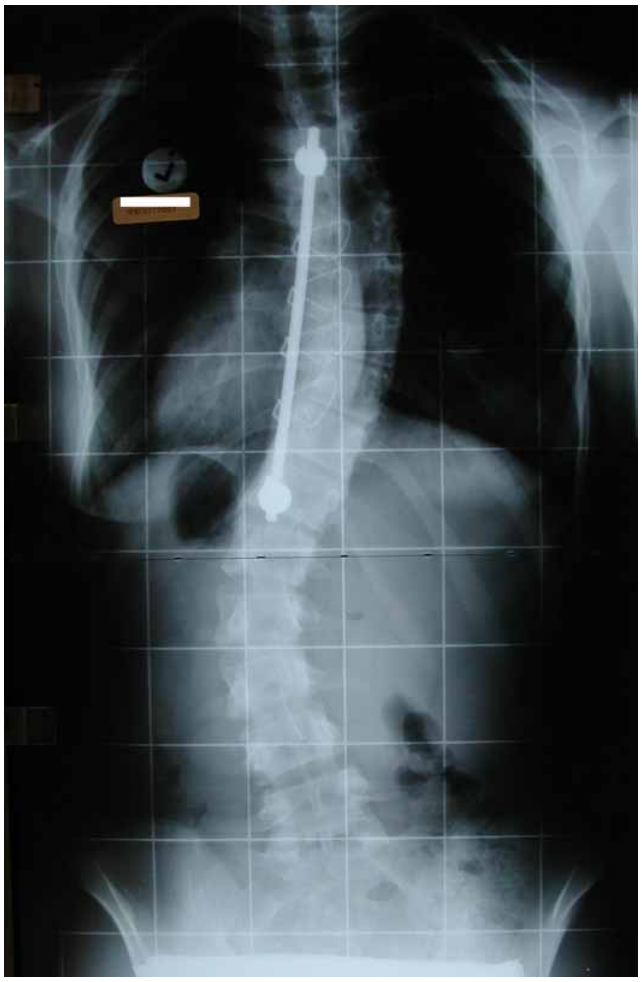
Ti-TaMED provides a range of hooks – please refer to the Product Range in the brochure. The use of a single pedicle hook or use of a claw configuration is also a matter of personal choice based in part on the perceived risk of dislodgement of the proximal end of the construct.

Ti-TaMED has screws from 4.5mm Diameter and 25mm in length to accommodate small thoracolumbar pedicles.

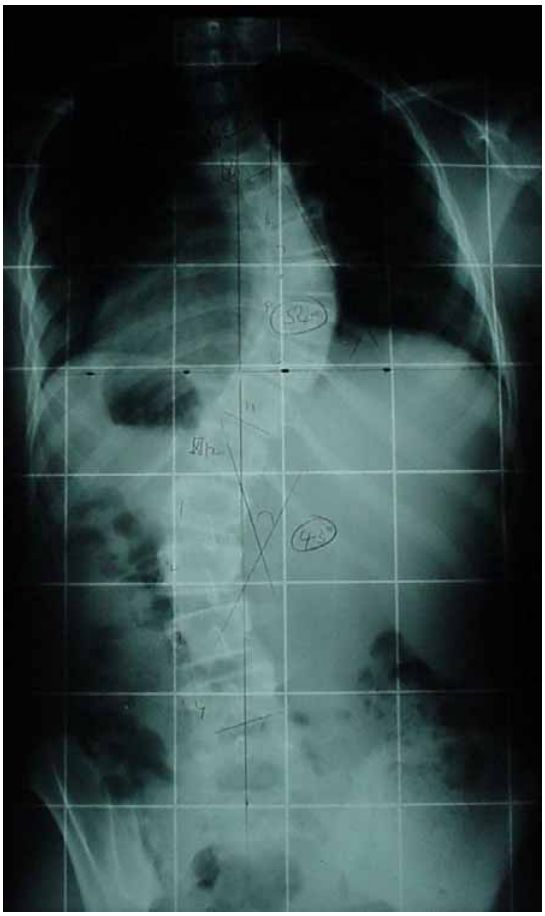
King Type I: Age 14 at surgery – 3yr follow-up Xray (150)

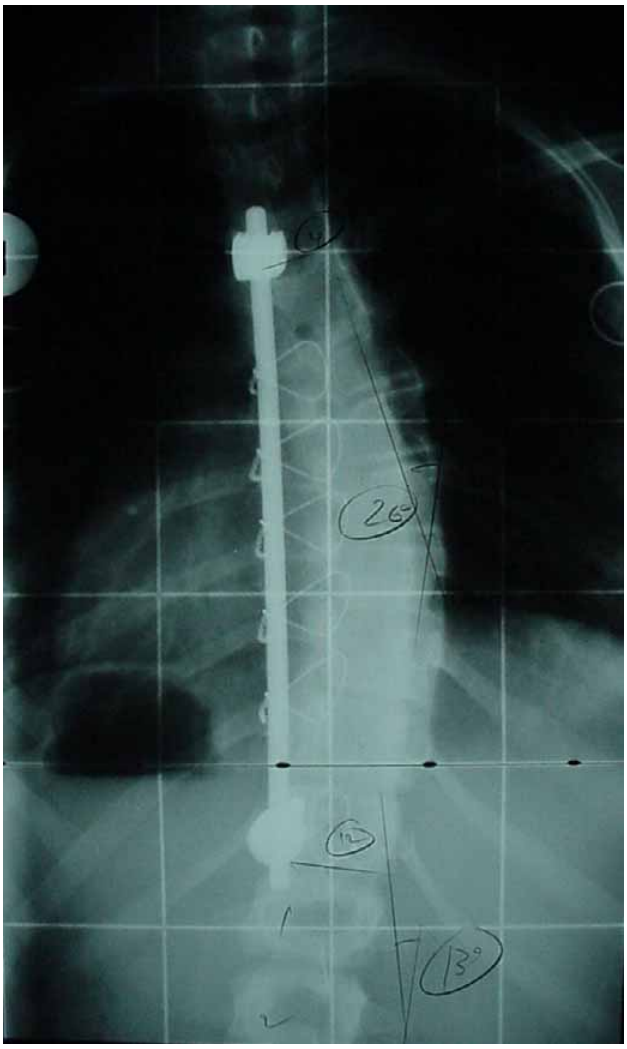


King Type II: Age 13 at surgery – 18mo follow-up Xray (112)

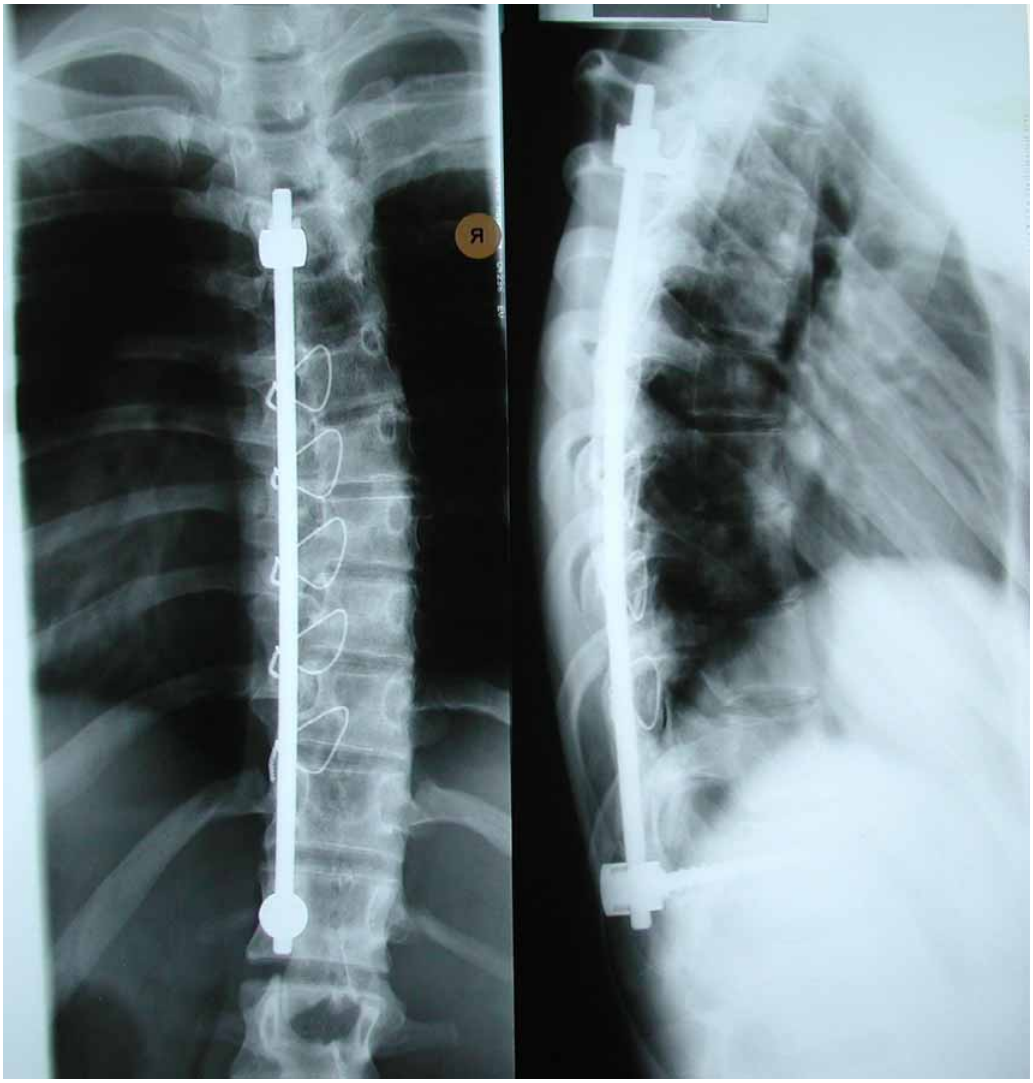


King Type II: Age 12 at surgery – 12mo follow-up Xray (28)





King Type III: Age 15 at surgery – 18mo follow-up Xray (71)



King Type V: Age 14 at surgery – 16mo follow-up Xray (521)