

A longitudinal incision was performed from D₁₂ to L₃. The aponeurosis was penetrated and the musculature of the spinous processes and of the laminae was subperiosteally detached until the intervertebral joints were clearly visible. A cutter is used to resect about half of the L₁ and L₂ spinous processes, with the section being made obliquely so that the base of the wedge is posterior. The interspinous ligament is extracted together with the base of the spinous processes so that the dura mater is exposed. The ligamenta flava are ossified so they cannot be excised with the scissors. Once the dura mater has been protected, with a chisel directed from the enter towards the sides, the lower border of the L₁ laminae and the upper border of the L₂ laminae are sectioned, with the osteotomy also comprising the base of the articular processes, especially those of the lower vertebra. When this osteotomy is carried out, care must be taken to remove more bone on the left side so that the existing scoliosis can be corrected at the same time as the kyphosis. We will subsequently have to make a ligature, but before that we must bore a hole into each of the L₁ and L₂ spinous processes and a wire is passed through them. Then an assistant must lift the anterior portion of the patient's trunk while we put direct pressure on the area of osteosynthesis, visually controlling the straightening of the kyphosis, which is achieved after a clicking sound is heard that results from the gentle but sustained pressure employed. The spinous processes are then brought together thus completing the required correction. A knot is tied with the wire that keeps the two processes together and small grafts obtained from the spinous processes and the resected laminae are plated at the docking site in the osteosynthesis area.

The wound is closed and a plaster bed is created in the area of correction; the patient is placed on that bed. When placing the patient on the bed, care must be taken to place a few pillows in order to reinforce the plaster bed. The post-op period can cause significant discomfort during the first two days given the prevailing abdominal paralysis, but this abates from the third day onward.

Eleven days post-op the patient developed a small bed-sore in the shoulder area and shortly afterwards another one in the operative region, which forced us to get the patient up from bed twenty days after surgery with a full-breadth brace. Standing up helped the healing of these bedsores; there were no further postoperative complications.

The patient is highly satisfied with the result. Figure 2B shows his status three months post-op. He had to wear an ambulatory brace (Fig. 1 C) as a cautionary measure related to his postoperative evolution. When still in hospital, he experimented with not wearing his cast for a few days and had no trouble whatsoever so he became very happy with the result since he realized that not only his kyphosis but also his scoliosis had been corrected.

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Commentary

In this paper, the author provides a gratifying account of a rather uncommon problem in our daily practice. Fifty-five years on, the article, written in a plain but forceful style, remains extremely pertinent for the treatment of anky-

lopoietic spondyloarthritis despite the fact that some progress has been made in a few technical details. Reading this study can prove instructive for any surgeon, whether devoted to vertebral conditions or not, as a criterial update.

The first paragraph summarizes the problem posed by the limitations faced by kyphotic patients who also have Bechterew's disease as regards their social life. He mentions the different elements to be taken into account when making an anamnesis of these patients; he specifically refers to the fact that patients cannot see an object placed at certain heights and to the existence of respiratory and digestive problems given the rigidity of their chest cavity and the fact that the ribs enter the anterior pelvic area over the iliac bones. He also mentions the importance of an early surgical indication in cases of progressive deformities since, given the difficulties and risks inherent in the procedure to be performed, the more pronounced the kyphosis, the bigger the problem.

After providing an excellent definition of the pathological substrate of the injury at the level of each of the affected mobile segments, the author posits that the safest alternative is to approach the lumbar area since it is least prone to complications and he suggests the possibility to perform more than one osteotomy at several levels if a large correction is required given the risk of provoking larger lesions caused by the stretching of the anterior soft tissues resulting from an anterior hinge effect. Admittedly partly motivated by fear, this remark was extremely apt as shown by the fact that nowadays subtraction transpedicular osteotomies have become standard practice in these cases, albeit at the expense of a higher bleeding risk, which must be taken into account especially in the event of osteotomies at more than one level performed in the same surgical act.

Nowadays, osteotomy is still considered a major procedure in terms of its risks and implications, even for the surgeons with greatest expertise in vertebral surgery. The situation in the time of Dr. Sanchís Olmos was not much different. Proof of this is the fact that the works in his list of bibliographical references, published over a period of six

years, contain descriptions of five different variations or modifications of the same procedure, all attempting to minimize potential root injuries caused by abruptly changing the shape or angulation of the canal. Later, the author discusses the problems posed by the type of plaster casting widespread in those days – unnecessary nowadays thanks to the modern pedicular instrumentations-, now considered to be old fashioned and too complicated; in fact specialists under 40 years of age never used it. The paper reports only one case, which was satisfactorily resolved, and mentions a list of bibliographical references that can be considered extensive taking into account the difficulty of making bibliographical reviews in those days.

We may attribute the scarcity of cases reported to the fact that the technique had not been in use for a long time; but the truth is that even nowadays there are few series with large numbers of patients and the literature on the subject is at best scanty. The risks and difficulties inherent in the technique are still very significant, to the extent that in a course on rheumatic conditions organized by the late Dr. Poal Manresa, John Goodfellow held that, although he had accumulated vast experience of this type of surgery, he had decided to set it aside «in order to preserve his peace of mind.»

Although severe cases of kyphosis have become less and less frequent and better technical alternatives are now available when it comes to performing an osteotomy (specifically, the hardware used at present is far less uncomfortable for the patient), Dr. Sanchís Olmos' paper makes an interesting read and has great didactic value. It certainly qualifies as one of the classic papers of our Journal.

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