

Peer Review File

Article Information: <https://dx.doi.org/10.21037/jss-22-14>

Reviewer A

Good Case report- could you please shortly define why you didn't perform a two-stage surgery. What was your main reason for your decision? How about complications after en- bloc- spondylectomy? Is it reasonable to perform such a risky procedure?

Comment 1: could you shortly define why you didn't perform a two- stage surgery. What was your main reason for your decision?

Reply 1: A double approach makes it difficult to excise all the necrotic an infected tissue. Performing in that way, to excise the infected bone from the opposite side of the vertebra is almost impossible with safety.

Changes in the text: but destruction by chronic infection affects the whole vertebral body and it is impossible to make a complete resection unless by an intralesional approach. (See page 6, lines 153-155)

Comment 2: How about complications after en- bloc- spondylectomy? Is it reasonable to perform such a risky procedure?

Reply 2: We usually perform en bloc spondylectomy in oncologic patients and this is our first and only time we have used it in non-oncologic patients until today. In our experience is a really safe procedure. We haven't had any major complication regardless of other series so it could be reasonable to perform it in selected patients when the main goal is to make a whole resection of the affected area.

Changes in the text: This technique has been reported as high-risk technique and with a high rate of complications (11). We have a very low rate of complications in oncologic patients avoiding a double approach and allowing the removal of all the necrotic or infected tissue. (See page 10, lines 272-274)

Reviewer B

This is an interesting article. Content can be improved by thorough proof reading.

Introduction

Could be condensed slightly - infection of the spinal column is not only post-surgical which is somewhat implied. De novo infection is an ever increasing problem and the described procedure appropriate in the setting of de novo infection also. Discussion therefore of the challenges in managing both recalcitrant infection and associated spinal deformity in the Introduction could be improved.

Comment 1: Could be condensed slightly - infection of the spinal column is not only post-surgical which is somewhat implied. De novo infection is an ever increasing problem and the described procedure appropriate in the setting of de novo infection also.

Reply 1: We do absolutely agree with you. We tried to make the chronic infection the center of the subject. That was the main reason we didn't make a reference about the acute infection. Here we include your comment. Thank you.

Changes in the text: Infection of the spine can appear after surgical procedures or de novo and this is an increasing problem (1) compromising the life of the patient, the stability of the spine, as well as the neurological function. (See page 5, lines 125-127).

Comment 2: Discussion therefore of the challenges in managing both recalcitrant infection and associated spinal deformity in the Introduction could be improved.

Reply 2: Sure. Infection can destroy the bone and compromise the stability of the spine, so to be successful in these patients, we need to eradicate the infection (requiring surgical and antibiotic treatment), to get a good and vital bone for a biologic goal, and to reconstruct the profile and the stability of the affected spine.

Changes in the text: In some patients, bone destruction caused by infection destroys the

anterior support of the spine. Subsequently, an important kyphotic deformity can be developed causing pain and seriously compromising the neurological function. The reconstruction of this problem must reach two goals: to eradicate the necrotic and infected tissue and to obtain a correct spinal profile which is stable and with a good biological field that permits to obtain a solid fusion mass. (See pages 5-6 lines 144-150).

Case

Test - should provide exact lab values - perhaps in a Table summarising presenting lab markers.

Would value some detail in the follow-up - PROMs or VAS scores if available. Any complications? Any post-operative antibiotics? Orthosis used post surgery?

Comment 1: Test - should provide exact lab values - perhaps in a Table summarizing presenting lab markers.

Reply 1: Preop: Leukocytes 7.300, 81% of polymorphonuclear, PCR 21,25 (normal <5) ESR 32. Last control PCR 6 and ESR 19.

Changes in the text: The preantibiotic sample blood test shown 7,300 leukocytes with an 81% of polymorphonuclear, CPR 21,25 (reference value < 5) and an erythrocyte sedimentation rate (ESR) of 32. Antibiotic treatment was performed for 3 months according to blood culture results. Blood analytical results returned to normal (CPR 6 and ESR 19), but the patient mentioned disabling chest pain not irradiated to the lower limbs and was referred to our center for evaluation. (See page 7 lines 197-203).

Comment 2: Would value some detail in the follow-up - PROMs or VAS scores if available

Reply 2: The preop VAS was 7/10 and the postop changes to 3/10.

Changes in the text: The preoperative visual analog scale (VAS) was 7/10. (See page 7, line 203). The VAS score shows a 3/10 value. (See page 9 line 241-242).

Comment 1: Any post-operative antibiotics?

Reply 1: Only prophylactic antibiotic. As the specimen culture was negative we didn't perform any antibiotic therapy.

Changes in the text: With these results we opted for no antibiotic treatment. (See page 9, lines 246-247).

Comment 3: Orthosis used post-surgery?

Reply 3: We didn't use any orthosis in the postoperative period.

Changes in the text: No external orthosis was used in the postoperative period. (See page 9 line 248).

Discussion:

Comment 1: See comments above re: de novo infection.

Reply 1: Absolutely. We are not sure we can perform this kind of surgery in patients who present acute infections. The ability to do it with a "compartmental" goal is almost impossible.

Changes in the text: In patients with an acute infection, the ability to perform a surgery surrounding the infected tissue is lower and we have doubts using it in those kinds of patients. (See page 10 lines 263-265).

Comment 2: Appears the main benefit of this more aggressive approach is total removal of infected tissue, and this should be highlighted while contrasting against reports mentioned above.

Reply 2: We are agree with you.

Changes in the text: Other authors (Gorensek et al) proposed to do it by a posterolateral approach with a radical debridement the ability to make an anterior and posterior reconstruction and a quicker recovery. The difference with the technique we propose is that the en bloc spondylectomy permits a radical resection of the whole affected area without violating the necrotic and infected tissue. This secures a radical excision of the infected area (Gorensek et al, Porea et al, Skovrlj et al). (See page 10 lines 258-263).

To apply this oncologic designed technique to the infected spine permits experienced surgeons to reach the whole infected specimen while minimizing the possibility of contaminating the surrounding tissues doing suboptimal resections. (See page 11 lines 295-298).