



Surgical site infection following correction of adolescent idiopathic scoliosis with ApiFix: A retrospective study analysing incidence and recurrence

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ABSTRACT

Introduction: Apifix is an internal brace used for the correction of adult idiopathic scoliosis (AIS) classified as Lenke 1 or 5 while having a Cobb angle of 35-60 degrees which reduces to less or equal to 30 degrees on lateral side-bending radiographs. Since the indications are very specific, it is not a common operation. Our study aims to evaluate infection incidence and recurrence. Materials and methods: A retrospective study of 35 cases treated in our centre for AIS from 2017 to 2022 with ApifiX was performed. Patients that presented with SSI were initially treated with irrigation and debridement (I&D) following antibiotic therapy. Results: Overall 37 patients with a mean age of 15.1 were evaluated. Two of our patients presented with early onset infection while one of them presented with skin ulcer due to septic screw loosening who underwent I&D but with recurrence after one year. Curiously after removing the ApiFix device after two years of internal bracing from one of our patients there was puse leakage but the patient was asymptomatic. Conclusion: In this study of 37 patients, we reported 3 cases of infection and 1 case of reinfection. Given the limited muscle detachment and short operating time needed for Apifix statistics suggest that SSI rate is unjustifiably high. Further randomised trials are needed to provide more

INTRODUCTION

Apifix is an internal brace used for the correction of adult idiopathic scoliosis (AIS) classified as Lenke 1 or 5 while having a Cobb angle of 35-60 degrees which reduces to less or equal to 30 degrees on lateral side-bending radiographs. Since the indications are very specific, it is not a common operation. Higher spinal infection incidence is related with prolonged surgery time , wide muscle detachment and patient's comorbidities. Our study aims to evaluate infection incidence and recurrence

METHODS AND MATERIALS

A retrospective study of 35 cases treated in our centre for AIS from 2017 to 2022 with ApifiX was performed. Otherwise healthy patients with a mean age of 15. that presented with SSI were initially treated with irrigation and debridement (I&D) following antibiotic therapy.

RESULTS

Overall 37 patients with a mean age of 15.1 were evaluated. Two of our patients presented with early onset infection while one of them presented with skin ulcer due to septic screw loosening who underwent I&D but with recurrence after one year. Bone and tissue cultures showed infection with Staphylococcus capitis in two cases and Staphylococcus warneri in the third case. Curiously after removing the ApiFix device after two years of internal bracing from one of our patients there was puse leakage but the patient was asymptomatic with the culture also revealing entrenched abcess with staphylococcus.

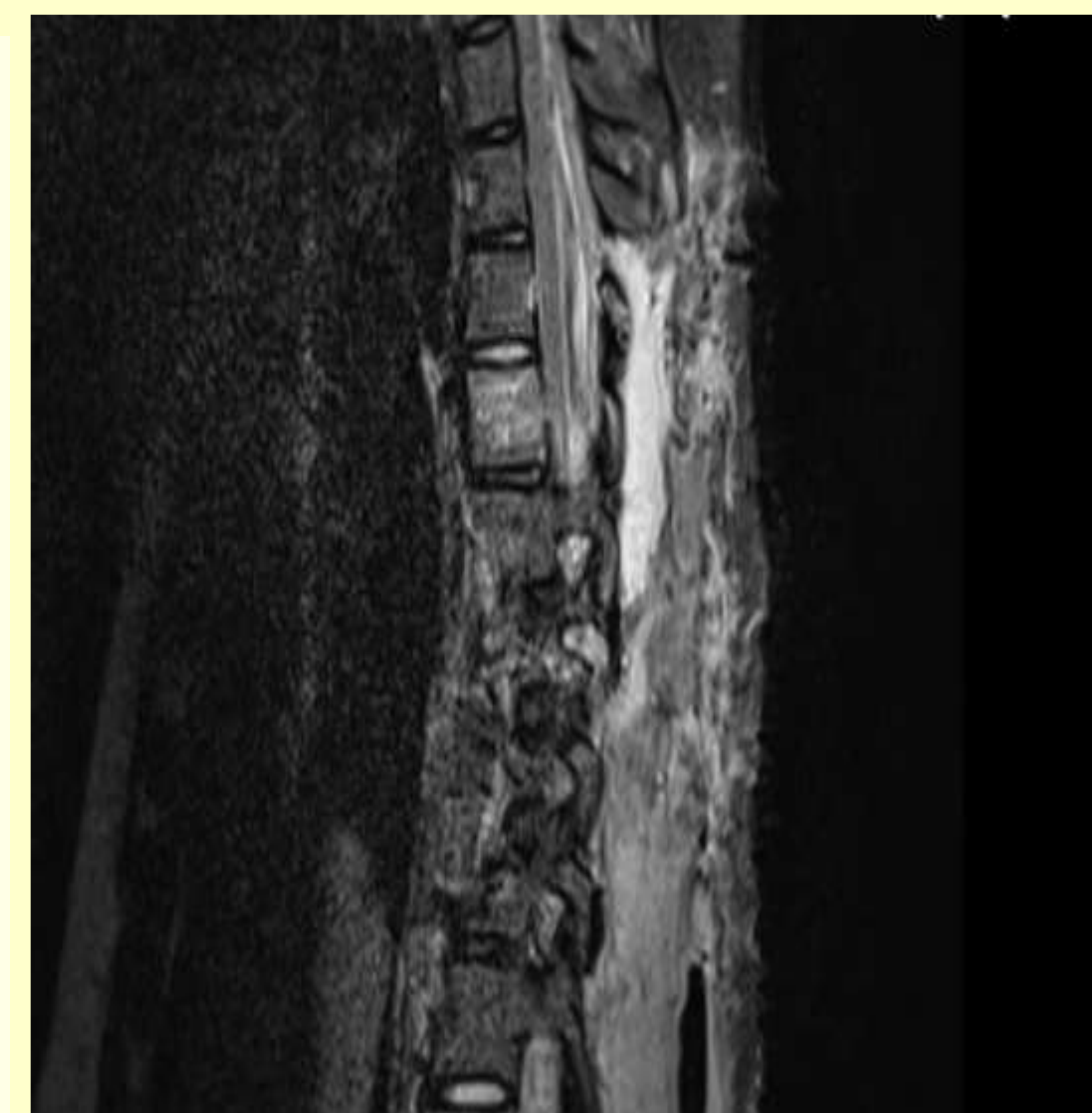


Figure 2



Figure 1

Figure 1 : Showing postoperative X-ray image with ApiFix device.

Figure 2 : MRI scan of thoracic spine showing abscess and osteomyelitis during the second postoperative week.

Figure 3 : Spinal infection with fistula

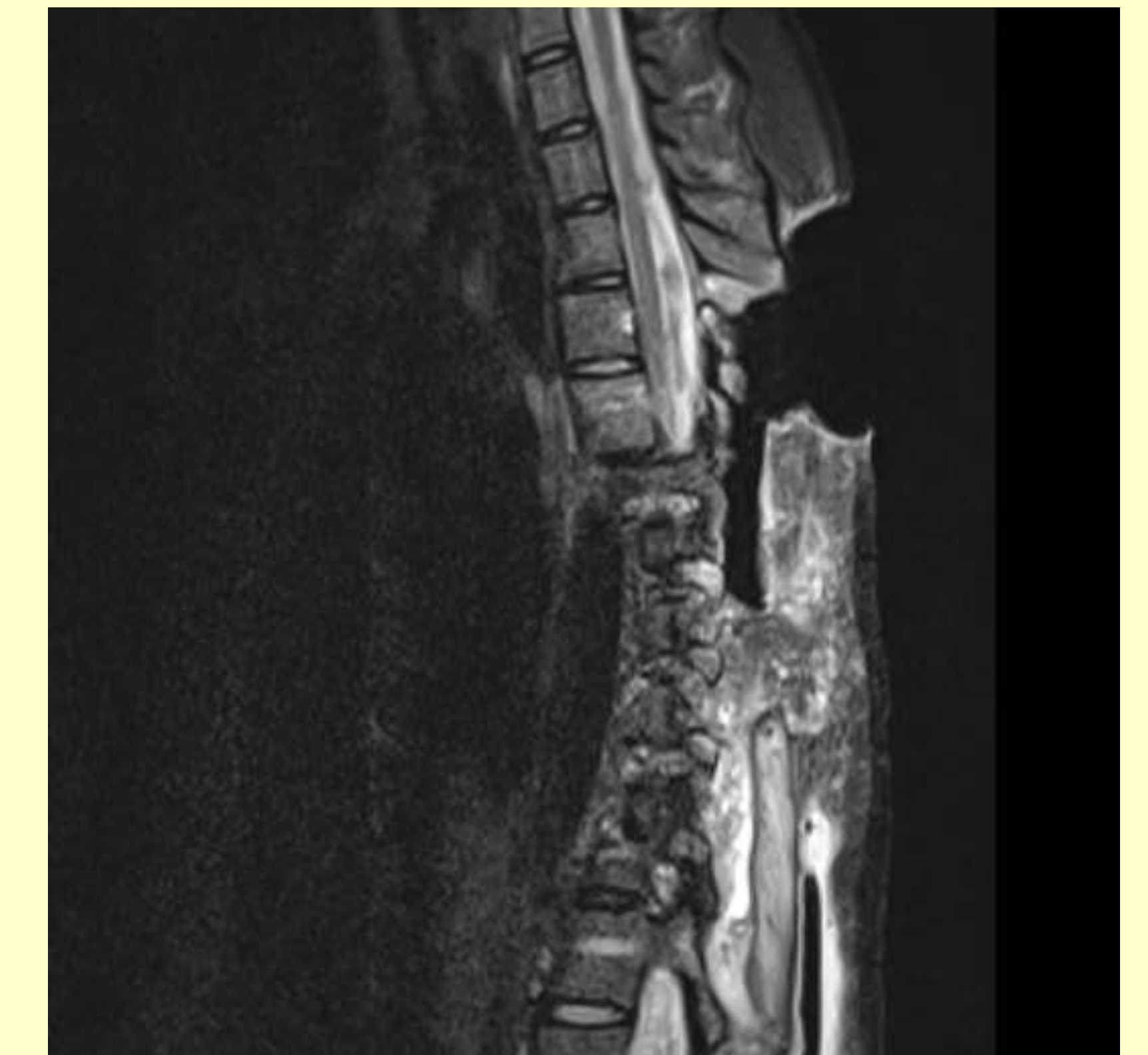


Figure 3

CONCLUSIONS

In this study of 37 patients, we reported 3 cases of infection and 1 case of reinfection. Given the limited muscle detachment and short operating time needed for Apifix statistics suggest that SSI rate is unjustifiably high. Further randomised trials are needed to provide more evidence

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