Functional analysis of TMJ functions in a patient with idiopathic scoliosis before and after surgical treatment

[1]Beáta BENKE, [1]Maria KÜHN, [1]Dóra MARKOVICS, [1]Gyula MARADA,
[2]József VÁNCSODI, [1]Márta RADNAI

[1]University of Pécs, Medical Faculty, Dental School, Department of Prosthodontics, Hungary
[2]University of Pécs, Medical Faculty, Department of Orthopaedics

INTRODUCTION

From anatomic and functional aspects the stomatognathic system and the upper cervical spine are closely connected. Together with complex neuromuscular relationships, this gives rise to an important field of cooperation between dentists and orthopedics. The aim of this case report was to demonstrate the improvements of TMJ function after orthopedic surgery in a patient with idiopathic scoliosis.

CASE PRESENTATION

A 15 year-old female patient who had adolescent idiopathic scoliosis was surgically treated in 2014. Functional analyses of the temporomandibular joint were performed before the day of operation, 7 months and 10 months after the surgery. For detection the Zebris (Achen, Germany) ultrasound-based testing machine was used . The analyses of the data showed that almost all range of motions (ROM) were getting better. The deviation to the right side was reduced from 8mm to 2mm during mouth opening. The patient had limited left lateral movement before the operation, 10 months after the operation there were free motions towards both sides. The originally asymetrical protrusion became almost completely symmetrical.

CONCLUSION

Relating the functions of the TMJ the surgery was successful, since the range and the path of the mandibular movements improved without any other treatment. These improved functions are indirect evidences for the connection of the function of the upper cervical spine and TMJ.

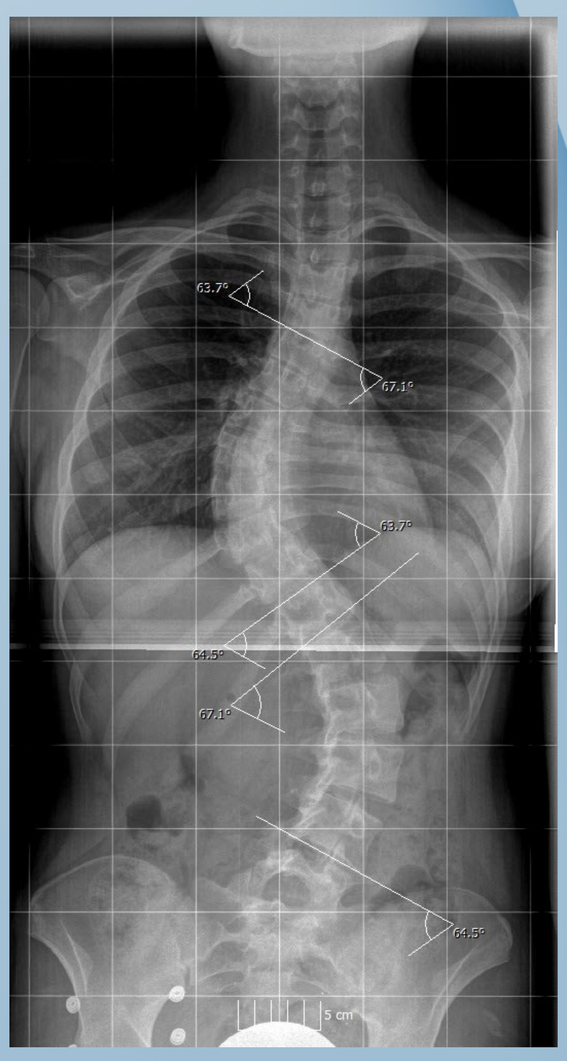

Fig. 1: AP X-ray before scoliosis surgery

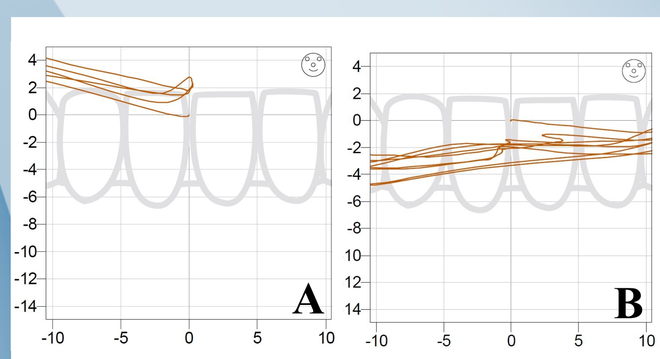

Fig. 2: Laterotrusion before (A) and after (B)

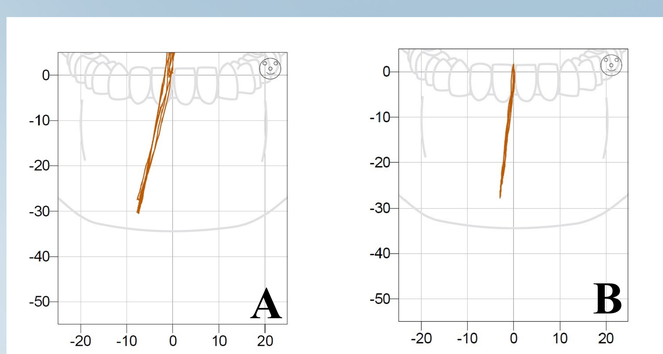

Fig. 3: Maximum opening before (A) and after (B)

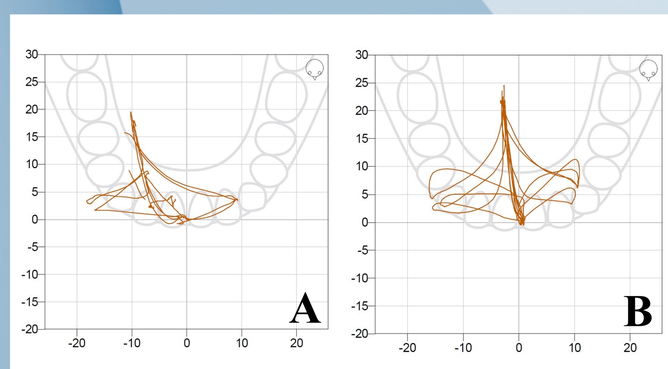

Fig. 4: Frontal Posselt's diagram on the horizontal plane before (A) and after (B)

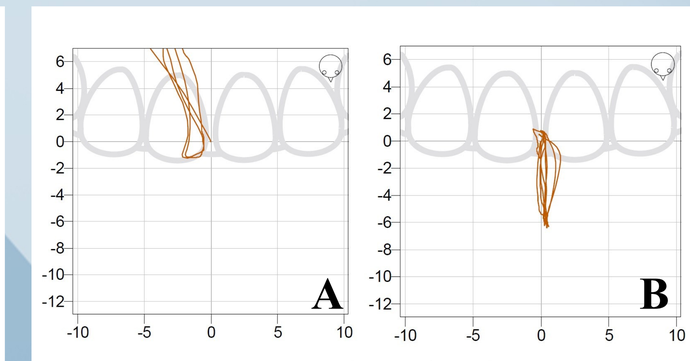

Fig. 5: Protrusion before (A) and after (B)

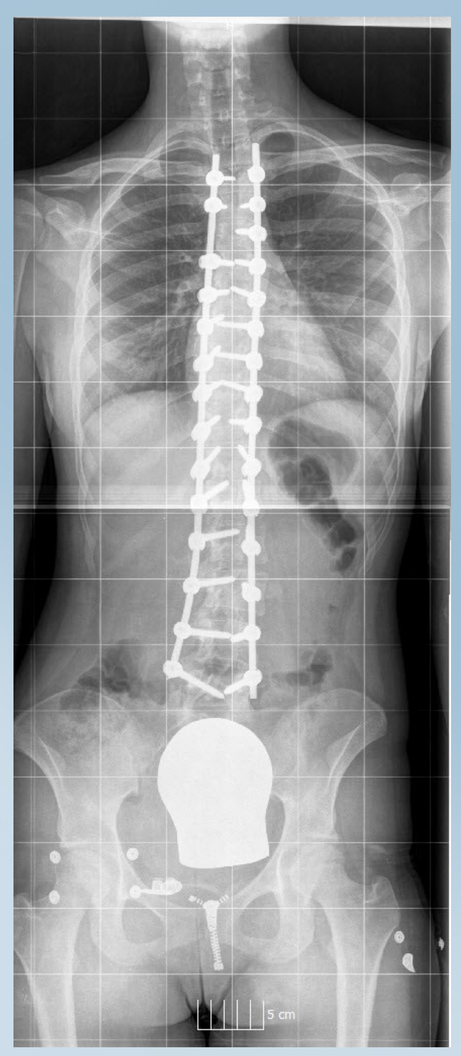

Fig. 6: AP X-ray after surgical reconstruction