

# OBSERVATIONAL STUDY ON THE USE OF THE SACROLOC ORTHOSIS TO TREAT PELVIC BRIM FRACTURES

## INTRODUCTION

Unlike complete pelvic ring fractures, pelvic brim fractures are characterized by the fact that they are isolated to the upper pubic rami or ischium and usually only affect one side, but can also be bilateral injuries[1]. Pelvic brim fractures are particularly painful as the walking load applied to the sacroiliac joint during the nutation movement causes movement in the area of the fracture. In the past, patients have generally been immobilized for 14 to 21 days as a result of the severe pain they experienced. The period of immobilization caused by pain is long in cases of an isolated pubic rami fracture in an elderly person in particular and mobilization is a slow process, even when pressure is relieved from the leg of the affected side of the pelvic rami [1].

The aim of this study was to investigate the influence of a pelvic orthosis (SacroLoc) on immobilization time and the consumption of pain medication in patients with pelvic brim fractures.



3D reconstruction of upper pubic rami fracture

## STUDY DESIGN

Observational study

## METHODOLOGY

Sample:	n = 18, age: 64–90 years, 16 women and 2 men
Indications:	17× stable pelvic fractures, most of which were osteoporotic in nature 1× unstable pelvic fracture with concomitant os sacrum fracture
Data collection:	2015–2017
Treatment:	· Pain therapy with opiates · Physiotherapeutic early mobilization on crutches from the fifth or sixth day as an inpatient · Pelvic orthosis
Test orthosis:	SacroLoc (Bauerfeind AG)
Evaluation of data:	Descriptive statistics

## RESULTS

In all 18 cases, in comparison to the previous procedure in which the patients were immobilized for 14 to 21 days, a significantly earlier start of mobilization was achieved after 8 to 10 days with the protection offered by the SacroLoc orthosis (Fig. 1). Patients also reported a reduction in pain on weight-bearing which was reflected in a significantly reduced opiate requirement, in most cases until the day of discharge on day 8 to 10 (no fig.).

**Here is the effect that the use of the SacroLoc pelvic orthosis had:**



Early mobilization



Lower consumption of pain medication

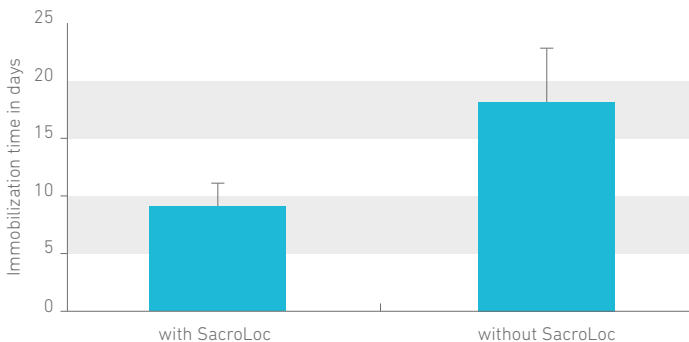


Fig. 1: Immobilization time with and without SacroLoc

## DISCUSSION

Due to the changing age structure of the population with increasing prevalence of senile osteoporosis, a rapid increase in pelvic brim fractures and unstable pelvic ring fractures is observed [2]. Furthermore, pubic rami fractures are not only common in geriatric patients in the context of accidents involving minimal force, they also occur in rare cases as fatigue fractures in athletes [2]. The use of the SacroLoc pelvic orthosis in this observational study led to earlier mobilization and lower pain medication consumption in patients with pelvic brim fractures. The effect of the orthosis can be explained in terms of an external compression of the pelvic girdle with reduction of the scissor movements when the leg is standing and swinging [2]. In a study by Sichtung et al., it was shown using a computer model that the compressive force exerted by the pelvic orthosis causes a counternutation in the sacroiliac joint (SI) joint, thereby restricting the scope of physiological movement [3]. This effect is also reflected in the stress applied to the ligaments involved in this movement. The stretching of the ligaments in the posterior pelvic ring is significantly reduced as a potential site for nociceptive input. These results indicate that the use of a pelvic orthosis such as the SacroLoc can reduce pain in the area of the pelvis and thus allow earlier mobilization of patients.

## CONCLUSION

In summary, it can be assumed that an extension of the SacroLoc indication to include pelvic brim fractures is sensible and appropriate [1].

## REFERENCES

- [1] Haaker R: Observational study on extending the indication for Bauerfeind's SacroLoc orthosis Internal Bauerfeind data. 2017
- [2] Haaker R: MOT 04/2015 Experience report: The SacroLoc orthosis in the treatment of isolated pelvic brim fractures.
- [3] Sichtung F, Rossol J, Soisson O, Klima S, Milani T, Hammer N. Pelvic Belt Effects on Sacroiliac Joint Ligaments: A Computational Approach to Understand Therapeutic Effects of Pelvic Belts. Pain Physician. 2014;17:43-51.