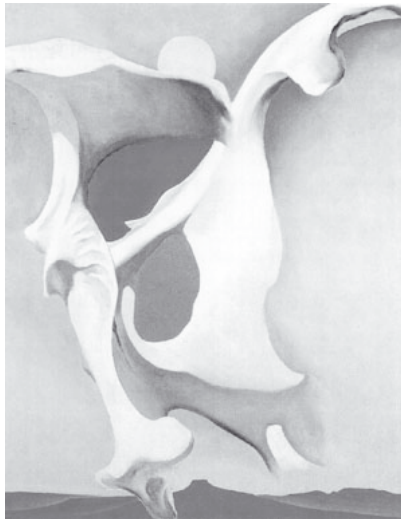


# Chapter Ten

## General Discussion



## GENERAL DISCUSSION

Pelvic ring fractures remain a complicated injury in which several injuries often coexist after severe trauma. Because of improvements in the overall survival, this thesis focuses on other aspects of this injury. The quality of life after pelvic ring fracture remains reduced compared to the general population. The limitations in functioning are still severe and several daily activities are limited for this group of young patients. Although there are indications that internal fixation offers superior quality of life compared to external fixation, the study, presented in chapter two, was one of few studies to compare these groups. Further research into improving the quality of life for trauma patients is necessary in order to optimize quality of life. Special attention should be directed towards the prevention of nonunion, which, even after operative treatment, results in a lower quality of life compared to patients in whom this complication does not occur. Although there is no conclusive evidence from randomized trials, some authors suggest that internal fixation does seem to lower the incidence of nonunion. However, several questions regarding the optimal technique using sacroiliac screws arose which led to the laboratory experiments as described in chapter four to six.

From the biomechanical testing of various injuries and their treatment with sacroiliac screws several conclusions can be drawn, but also some further questions arose. It can be concluded from the cadaveric experiments that in open book fractures (Tile B1) the role of the sacroiliac screw is limited since anterior plate fixation has similar biomechanical results. We recommend that a clinical study be performed in which direct postoperative weight bearing is allowed, and if no short term problems, such as plate failure, occur, it seems feasible to perform a clinical trial randomizing into groups with or without sacroiliac screw in order to examine long term complications such as nonunion. For completely unstable pelvic ring fractures combined anterior plate fixation with two posterior sacroiliac screws endured cyclic loading in embalmed aged pelvis. Despite the fact that the average trauma patient is younger, postoperative weight bearing in this injury should not be implemented in a clinical setting without careful further testing. However, if these results can be confirmed in a clinical trial, it would allow trauma patients to be mobilized much earlier, thus avoiding several complications associated with prolonged bed rest. Peroperatively it is safer to position the lower sacroiliac screw in the first vertebral body with similar biomechanical features and a lower risk of nerve injury with respect to position in the second vertebral body. The lateral view offers additional information regarding the position of the screws. Recent navigation techniques offer the additional advantage of simultaneously displaying all views with decreased fluoroscopy time, possibly resulting in a lower risk of failure. In future C.T. guided navigation and robotic insertion might give a better three-dimensional understanding of the sacroiliac anatomy combined with more accurate insertion. This may finally result in a lower risk of peroperative neurological impairment of the sacral root due to more accurate positioning.

The aim of this thesis was to investigate the safety of the fluoroscopy, the stability, and the outcome after sacroiliac screw positioning for unstable pelvic ring injuries. Several recommendations regarding these issues were made. Some of the results are very promising for further implementation of this technique, but further research to improve these issues is still required in order to achieve the optimal outcome for patients after unstable pelvic ring fractures.