

Comparing Simultaneous with Sequential Anterior and Posterior Approach in the Treatment of Both-Column Acetabular Fractures: A Retrospective Study

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Purpose: Operative treatment of complex acetabular fractures involving the anterior and posterior column aims for an anatomical and stable reduction. Both-column acetabular fractures can be approached from anterior, posterior, or combined. Literature on combined anterior and posterior approaches is scarce and there is no consensus whether this should be done simultaneously in 1 stage or sequentially in an alternating position, in 1 or 2 stages. This study aims to evaluate the difference in safety and outcome between both approaches in the surgical treatment of both-column acetabular fractures.

Methods: In this retrospective study in 2 centers between 2011 and 2021, 15 consecutive patients were identified who underwent surgery for a both-column acetabular fracture with a simultaneously posterior and anterior approach in a floppy lateral position or sequentially in an alternating position in 1 or 2 stages. Main outcome measurements were perioperative parameters, the Harris and Merle D'Aubigné Hip Score as a functional outcome score, and the Brooker score and Matta score as a radiological outcome score.

Results: In the simultaneous approach group, 10 patients (9 male, 1 female) between 24 and 73 years of age were included. In the sequential approach group, there were 5 patients (2 male, 3 female) between 45 and 67 years. Both groups were comparable for age, gender, trauma mechanism, type of acetabular fracture, and American Society of Anesthesiologists (ASA) score. Mean follow-up was 31.06 months with a minimum of 7 months. In the sequential approach group there was a mean of 7 days between the 2 surgeries. A posterior Kocher-Langenbeck approach was combined with an ilioinguinal approach in 10 cases, an anterior pararectus approach in 4 cases, and a modified Stoppa approach in 1 case. No patient died during the perioperative period, and no deep infection was detected. There is a tendency for postoperative ICU care in the 1-stage group (60% in 1 stage vs 20% in 2 stages, $P = 0.143$). The Harris, Merle D'Aubigné Hip Score, the Brooker score, and Matta score were comparable. Revision surgery was done in both groups (1 case in 1 stage and 2 cases in 2-stage group). The most frequent complication was obturator nerve compression (1 case in each group), 1 case of a partial dropfoot in the alternating position group, and 1 case of erectile dysfunction in the 1-stage group. Mean length of hospital stay was 15.9 days in the simultaneous approach group and 19 days in the sequential approach group.

Conclusions: Simultaneous anterior and posterior approach for both-column acetabular fractures can be used safely. Perioperative parameters and functional and radiologic outcomes showed no significant differences when comparing 1-stage versus 2-stage surgery.