TRIPLE PELVIC
OSTEOTOMY FOR THE
TREATMENT OF HIP
DYSPLASIA
TRIPLE PELVIC OSTEOTOMY

Steele’s procedure, which combines a standard Salter innominate ostetomy with a high ischial osteotomy and a pubic osteotomy close to the acetabulum.
TRIPLE PELVIC OSTEOTOMY

**Indication**

- dysplastic hip in an adolescent that requires more than 25° of abduction to contain the femoral head concentrically in the acetabulum.

- hip joint instability and pain.
TRIPLE PELVIC OSTEOTOMY

Requisites

1. A congruous hip that can be concentrically reduced
2. A hip with adequate articular cartilage space
3. Functional range and motion
4. No upper age limit
Center edge angle (CEA) of Wiberg – greater than 20 ° is considered normal.
TRIPLE PELVIC OSTEOTOMY

Goal

The goals of osteotomy are:

- decrease the joint stress
- improve the functional range of motion
- increase the femoral head coverage
- relieve the pain
TRIPLE PELVIC OSTEOTOMY

Method

- posterior approach is used to perform the ischial cut
- iliofemoral approach is used to perform the innominate osteotomy
- pubic cut is made through the same approach
The osteotomy cuts are typically stabilized with cortical screws or threaded pins.
TRIPLE PELVIC OSTEOTOMY

Materials

- Between 1999 and 2007 ten patients (12 joints) underwent Steel procedure

- There were 4 boys and 6 girls

- The average age of patients was 11.5 yrs

- The cause of hip dysplasia was DDH in 9 patients and Perthes disease in 1 patient
TRIPLE PELVIC OSTEOTOMY

Materials

- preoperatively all patients had X-rays in neutral position and in 30° of abduction

- the average of central edge angle (CEA) of Wiberg was 12.5° (range 8°-19°)

- all patients showed congruent reduction in abduction
TRIPLE PELVIC OSTEOTOMY

Methods

- we used two cancellous screws for internal fixation in 9 patients and threaded pins in one patient
- only in three cases we used hip spica cast
- non weight bearing ambulation started on the 4-5 day postoperatively
- partial weight bearing was allowed after 8 weeks and full weight bearing after 4-6 months.
TRIPLE PELVIC OSTEOTOMY

Results

- the follow-up results were seen in 9 patients from ??? 6 months to 8 years
- all patients, besides one, improved clinically and had less limping and no pain
- the CEA angle increased significantly from ... to 28°
- in follow-up no one patient had loss of correction
**Conclusion**

- triple pelvic osteotomy is an effective procedure for the treatment of acetabular dysplasia in adolescent
- helps to prevent early development of hip arthritis
- reduces the signs of hip arthritis (pain, limping, etc.)
- delays the need of hip arthroplasty