

Video Article

# Anterior Iliac Osteotomy in Surgical Repair of Bladder Exstrophy

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## Abstract

Classic bladder exstrophy (CBE) involves both epispadias and failure of closure at the midline in the lower abdominal wall, producing an open and protruding bladder. Accompanying these soft tissue defects are several abnormalities in the bony pelvic anatomy. CBE patients are born with a substantial pubic diastasis that increases steadily with age. The width of the sacrum and length of the posterior (iliac) segment of the pelvis in CBE patients are normal; however, the anterior (ischiopubic) segment of the pelvis is thirty percent shorter than in controls. Both the anterior and posterior segments are externally rotated in CBE patients, with the anterior segment being slightly more so (1,2). In cases of cloacal exstrophy, the pelvic deformities observed in CBE are exaggerated and manifest more severely. Defects in the bony anatomy lead to corresponding anomalies in the anatomy of the pelvic floor muscles. Both obturator internus and externus follow the pubic diastasis and thus are externally rotated. The levator ani muscle group is wider and flatter than in controls, with the puborectalis sling in particular appearing less conical and more posterior (3). Correction of these bony and muscular anomalies in the pelvic anatomy can be achieved through several different osteotomy techniques. Anterior iliac osteotomy presents the following unique array of advantages: less intraoperative blood loss; better apposition and mobility of the pubic rami at the time of closure; allowance for placement of an external fixator under direct vision; allowance for secure external fixation in children over six months old; no requirement to turn the patient during the operation (4). The procedure entails a bilateral transverse iliac osteotomy completely dividing the innominate bone just above the acetabulum so that the distal half containing the acetabulum can be rotated through the pubic symphysis to restore the pelvic ring. At this point, an additional osteotomy of the externally-rotated posterior portion of the ilium can be performed, if necessary, through the anterior approach in order to correct the posterior pelvic segment. Use of this procedure in conjunction with urological reconstruction of the bladder and closure of the abdominal wall has considerably reduced the rate of failure of the soft tissue repair, as measured by rates of bladder prolapse and wound dehiscence (4,5). Moreover, anterior iliac osteotomy has been shown to achieve postoperative continence in a substantial majority of patients for whom continence is a goal (4).

## Disclosures

No conflicts of interest declared.