Children's Hospital Colorado
International Center for
Colorectal and Urogenital Care

Newborn Screening for Patients with Anorectal Malformation

childrenscolorado.org/colorectal | 720-777-9880

First 24 hours of life – rule out important associated malformations:

Cardiac anomalies (echocardiogram)

- 30% of patients have associated cardiac anomalies, 10% of them with hemodynamic repercussion. The most common are: patent ductus arteriosus, atrial septal defect and tetralogy of Fallot.

Gastrointestinal anomalies (nasogastric tube and babygram)

- 8% of patients have esophageal atresia, 3% have duodenal atresia.

Urological anomalies (kidney ultrasound)

- 50% of patients have an associated urological condition. The most common are: hydronephrosis, vesicoureteral reflux, absent kidney and megarureter.

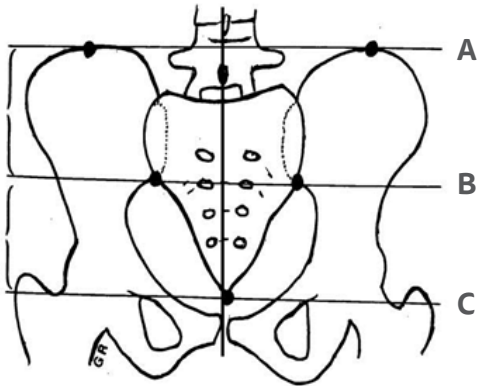
Spinal anomalies (sacral radiograph AP and lateral, spinal ultrasound)

- 25% of patients have tethered cord that can be detected with a spinal ultrasound. The sacral radiographs will rule out a hemi-sacrum (indication of a presacral mass) and would allow to calculate the sacral ratio (help to determine the prognosis for future bowel control).

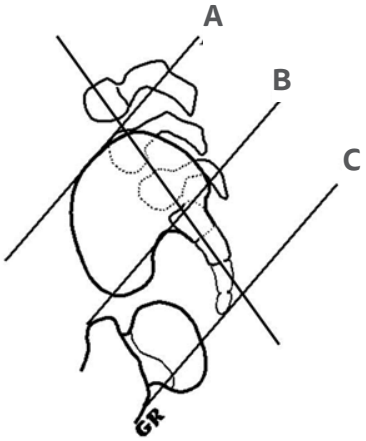
Hydrocolpos in patients with cloaca (pelvic ultrasound)

- 30% of cloaca patients have a very distended vagina that should be permanently drained at the time of colostomy opening.

Anterior-Posterior



Lateral



To calculate the sacral ratio divide:

$$\frac{BC}{AB}$$

A value that is equal or more than 0.7 represents good prognosis for bowel control.

Values between 0.41 – 0.69 are considered undetermined.

A value that is equal or less than 0.4 represents poor prognosis for bowel control (fecal incontinence).

Reference: Peña A, Bischoff A.: Surgical Treatment of Colorectal Problems in Children. Springer International Publishing. 2015. DOI 10.1007/978-3-319-14989-9.