# SCREENING OF UROLOGICAL ANOMALIES ASSOCIATED WITH ANORECTAL MALFORMATIONS IN CHILDREN AT ALEXANDRIA PEDIATRIC SURGERY DEPARTMENT. TWO YEAR EXPERIENCE

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## Introduction

Anorectal malformation is one of the most common congenital anomalies encountered in pediatric surgical practices. Its global incidence is approximately 1 in every 4,000 to 5,000 live births, with a slight male predominance. Approximately over 50% of children with ARM have associated abnormalities, whereby urological anomalies comprise more than half of associated abnormalities with incidence between 30% and 50%. Screening of urological anomalies through genital examination and renal ultrasound imaging at birth or in the neonatal period is crucial to detect associated genitourinary anomalies for early management and avoidance of renal damage.

## Aim of the work

This study aimed to identify and classify the associated urological anomalies with anorectal malformation patients admitted to the Pediatric Surgery Department at Alexandria University Children's Hospital.

## Patients and Methods

A retrospective observational study was conducted at the Pediatric Surgery Department of the Alexandria University Children's Hospital. All patients with anorectal malformations and underwent urological screening between June 2021 and June 2023 were included. Information were obtained from the patients' files. Urological screening methodology used were genital examination, renal ultrasound, and voiding cystourethrogram (VCUG). Data were fed to the computer and analyzed using IBM SPSS software package version 20.0.

## Results

Of 66 patients with ARM, 63.6% were male and 36.4% were female. The median weight at presentation was 2.80(2.50-3.0) kg and the mean age was $1.48 \pm 0.73$ days. High anorectal anomalies (HARA) were found in 47 out of 66 patients. Fifteen patients had abnormal genital examination findings. Seven patients had abnormal renal ultrasound, of these patients, VCUG was performed. The overall incidence of urogenital anomalies was 33.3%. Hypospadias and bifid scrotum were the most common genital anomalies **(Table.1)**, while absent kidney, multicystic kidney, and vesicoureteral reflux were the most common urological anomalies **(Table.2).** Twenty of 47 patients with HARA had at least one urogenital anomaly **(Table.3)**.

**Table (1): Associated genital anomalies in 15 of 66 (22.7%) patients with ARM.**

| Sex | Genital anomalies | Number | % |
|---|---|---|---|
| Male | Bifid scrotun | 3 | 4.54 |
| | Hypospadias | 2 | 3.03 |
| | Hypospadias + bifid scrotum | 2 | 3.03 |
| | Hypospadias + undescended testis | 2 | 3.03 |
| Female | Isolated cloaca | 3 | 4.54 |
| | Hydrocolpos +bicornuate uterus | 2 | 3.03 |
| | Uterus + vaginal atresia | 1 | 1.51 |
| Total | | 15 | 22.7% |

**Table (2): Associated urological anomalies in 7 of 66 (10.6%) patients with ARM.**

| Urological anomalies | Number | % |
|---|---|---|
| Absent kidney | 2 | 3.03 |
| Multicystic kidney + hydronephrosis | 1 | 1.51 |
| Multicystic kidney + megaureter + ectopic ureter | 1 | 1.51 |
| Vesicoureteral reflux | 1 | 1.51 |
| Vesicoureteral reflux + duplicating ureter | 1 | 1.51 |
| Horseshoe kidney | 1 | 1.51 |
| Total | 7 | 10.6% |

**Table (3): Frequency of associated urogenital anomalies in 66 patients with anorectal malformations according to the level of deformity.**

| Type of ARM | Number | Urological anomaly | Genital anomaly |
|---|---|---|---|
| HARA | 47 (71.2%) | 7 (14.9%) | 13 (27.7%) |
| LARA | 19 (28.8%) | 0 (0.0%) | 2 (10.5%) |
| Total | 66 (100%) | 7 (10.6%) | 15 (22.7%) |

## Conclusion

In our study, we found that the overall incidence of urological anomalies was 33.3% in patients with ARM. Urological anomalies were more common in patients with high anorectal anomalies. Bifid scrotum and hypospadias were the most common genital anomalies seen. The most frequent urological anomalies were absent kidney, multicystic kidney, and VUR. Active screening and urologic evaluation allow for early detection of urologic problems, especially in high anorectal anomalies.

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