

**NEONATAL URINARY OUTFLOW
OBSTRUCTION REQUIRING EARLY
CIRCUMCISION**

ABSTRACT

Aim: To report a rare case of neonatal **urinary outflow** obstruction warranting early circumcision.

Presentation of case: We are reporting a case of 36 hour old term male neonate who had early circumcision done on account of acute urinary retention secondary to **urinary outflow** obstruction.

Discussion: Acute urinary retention from **prepuccial** obstruction is rather a rare entity in neonates. Similarly, circumcision is usually performed within the first several days of life to ensure that the infant is stable.

Conclusion: In cases of reversible urinary obstruction, because the degree and duration of obstruction are the chief determinants of renal dysfunction, early recognition and treatment are the keys to preventing renal loss.

Keywords: [meatal stenosis, obstruction, neonate, emergency circumcision]

16 **1. INTRODUCTION**

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18 Urinary outflow obstruction describes any blockage of urine flow anywhere in the urethra or
19 at the opening of the bladder. The commonest cause of the blockage is posterior urethral
20 valves, which occurs only in males[1] Other intrinsic and extrinsic pathological processes
21 causing obstruction in neonates include urethral atresia, urethral strictures, congenital
22 urethral diverticulum and urolithiasis.[2]

23 The practice of male circumcision (removal of the foreskin) especially neonatal circumcision
24 arose in many ancient cultures [3]. Circumcision was performed in ancient Egypt, also as a
25 ritual by Jews and is described in Genesis (the first book of the Holy Bible.) [3]. Male
26 circumcision became a common medical practice in the 19th century, with improved
27 anaesthetic, surgical and antiseptic technique. Although circumcision is the most common
28 surgical procedure performed, it is not complication free. Bleeding, infection and failure to
29 remove enough foreskin, pain, bruising, meatitis, meatal stenosis, urethral fistula, partial
30 penile amputation, necrotizing fasciitis, penile necrosis and concealed penis have been
31 reported in the literature as complications of circumcision [4,5].

32 The World Health Organization, following the recommendation of the American Academy of
33 Family Physicians, recommends that male circumcision should not be performed until at
34 least 12 to 24 hours after birth to ensure the infant is stable [6]. This period of observation
35 allows for recognition of abnormalities or illnesses that should either be addressed before
36 circumcision or would be a contra-indications for the procedure [6]. Contra-indications to
37 circumcision include infants with genitor-urinary anomalies such as hypospadias, epispadias,
38 chordee, penile webbing and concealed penis. Neonates with hypospadias should not be
39 circumcised because the foreskin is frequently used in reconstruction. Premature infants
40 should meet criteria for discharge before circumcision is performed [7, 15].

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42 **2. PRESENTATION OF CASE**

43 A 36 hour old term male neonate delivered via emergency lower segment caesarian section
44 by a primiparous woman on account of breech presentation and prolonged rupture of
45 membrane. He was referred to our facility on account of difficulty with breathing and poor cry
46 at birth.

47 Birth weight was 3.3k; Apgar's score was not known. At presentation, he was noticed to be
48 afebrile, anicteric, acyanosed but dyspnoeic with SPO2 of 66%. His chest was clinically
49 clear. His heart rate was 132 beats per minute without a cardiac murmur. He was evaluated
50 for severe perinatal asphyxia without neonatal encephalopathy and was subsequently
51 placed on intranasal oxygen therapy.

52 However, about 10 hours after birth it was noticed that the baby had not passed any urine
53 since birth. He was in respiratory distress but no facial or pedal oedema. His abdomen was
54 distended (mostly in the suprapubic region). Subsequent attempt at urethral catheterization
55 revealed absence of preputial opening. A diagnosis of acute urinary retention secondary to
56 preputial stenosis was made and he had emergency suprapubic canulation done that night
57 with size 22FG intravenous canulae to relieve the obstruction while awaiting definitive
58 management.

59 Few hours later, he had circumcision and repair of the preputial stenosis done. The prepuce
60 was gently retracted manually and a flimsy structure covering the meatus was manually
61 removed. The patency of the urethral was confirmed by passing a size 5 nasogastric tube
62 per urethral. Immediate circumcision was done using Gomco clamp. There was minimal
63 bleeding with the procedure and haemostasis was easily secured. Firm dressing was then
64 applied and the suprapubic canulae was removed leaving the improvised urethral catheter
65 in-situ.

66 Few hours later, the patient started voiding per urethral. The urethral catheter was removed
67 .He had serum electrolytes, urea and creatinine done; all the parameters were within the
68 range of normal. Abdomino-pelvic ultrasound done showed normal findings. Patient was
69 clinically stable and was discharged home after three days.

70

71 3. DISCUSSION

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73 Urinary outflow obstruction is the main cause of urinary retention in newborns (Figure 1).
74 Delay in treatment could cause renal obstruction and damage. Hence, it is essential to look
75 for signs of bladder outlet obstruction in order to relieve it early. The principles of
76 management include early decompression of the urinary obstruction followed by definitive
77 treatment of the underlying lesion. Here, we report on a case of neonatal bladder outlet
78 obstruction that prompted circumcision on the third day of life.

79 The index case did not have externally visible prepuce opening. This was missed at
80 presentation during the routine newborn examination. This was the etiology of the urinary
81 outflow obstruction and the subsequent urinary retention in this patient. Reported causes of
82 bladder outlet obstruction in female neonates include ureterocele, hydrometrocolpos,
83 neuroblastoma, sacrococcygea teratoma and rectal duplication. The commonest cause of
84 the blockage in male neonates is posterior urethral valves. Other causes include urethral
85 atresia, urethral strictures, congenital urethral diverticulum, congenital ureteropelvic junction or
86 ureterovesical junction obstruction, vesicoureteral reflux and urolithiasis.

87 In line with the principles of management of acute urinary retention, the patient initially had
88 bladder decompression done with suprapubic canulation before the definitive surgical
89 treatment. The latter involved gentle retraction of the prepuce and the subsequent remove of
90 the foreskin using Gomco method of circumcision (Figure 2, 3). This was done early enough
91 to avert long-term complications of bladder outlet obstruction.

92 The definitive treatment in this patient required early neonatal circumcision occurring on the
93 third day of life. Great controversy surrounds neonatal circumcision [8-10]. Most parents
94 based their decision whether or not to have their newborn son circumcised on three reasons;
95 first, nonmedical preferences (i.e. religious, ethnic, cultural, cosmetics); second, as a
96 prophylactic measure against future ailments ('routine' circumcision); third, for some
97 immediate medical indication. Phimosis is the most common medical indication for
98 circumcision [11]. Putative indications for neonatal circumcision include preventing UTIs and
99 their sequelae, preventing the contraction of STDs including, HIV and preventing penile
100 cancer as well as other reasons for adult circumcision [9].

101 Timing of circumcision is very crucial but controversial [12, 16]. While the Canadian
102 Paediatric Society does not recommend routine circumcision for newborns, it recommends
103 that the ideal time to have circumcision done is between 24 and 72 hours after birth [13]. It is
104 said that newborns tend to bleed less and fuss less during circumcision. It has been weekly
105 reported that circumcision complications occur more frequently with increasing age of the
106 patients. This is thought to be due to hormonally mediated increase in penile and prepuce
107 size and vascularity [14, 17]. It should not be done before 24 hours because the newborn
108 could have an undiagnosed medical condition that may pose a contraindication to male
109 circumcision.

110

111 4. CONCLUSION

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113 A high index of suspicion is essential for early recognition and management of bladder outlet
114 obstruction in neonates due to the potential short- and long-term sequelae. Thoroughly

115 performed routine neonatal examination is an essential tool to this effect. Prompt diagnosis
116 and potential surgical planning are essential to allay the anxieties of parents as well as to
117 identify other potentially clinically significant conditions.

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120 **COMPETING INTERESTS**

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122 Authors have declared that no competing interests exist.

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125 **CONSENT**

126 All authors declare that 'written informed consent was obtained from the parents of the child
127 for publication of this case report and accompanying images. A copy of the written consent is
128 available for review by the Editorial office/Chief Editor/Editorial Board members of this
129 journal.

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132 **ETHICAL CONSIDERATION**

133 All ethical considerations for publishing a case report were followed. Patient's identity was
134 kept confidential.

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175 18.

176 **PHOTOGRAPHS**

177 **FIGURE 1: ABSENCE OF MEATAL OPENING**
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179

180 **FIGURE 2: GOMCO CIRCUMCISSION**



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182 **FIG 3: POST- CIRCUMCISSION.**



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UNDER PEER REVIEW