

**NEONATAL URINARY OUTFLOW  
OBSTRUCTION REQUIRING EARLY  
CIRCUMCISION**

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**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].

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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.

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### 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 ureteroceles, 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]. While the Canadian Paediatric  
102 Society does not recommend routine circumcision for newborns, it recommends that the  
103 ideal time to have circumcision done is between 24 and 72 hours after birth [13]. It is said  
104 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]. It should not be done before 24 hours because the newborn could  
108 have an undiagnosed medical condition that may pose a contraindication to male  
109 circumcision.

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### 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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**PHOTOGRAPHS**  
**FIGURE 1: ABSENCE OF MEATAL OPENING**



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171 **FIGURE 2: GOMCO CIRCUMCISSION**



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



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