

Case Report

Urinary incontinence in children in Cipto Mangunkusumo Hospital, Jakarta

A serial case report

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ABSTRACT Urinary incontinence in children is a complex problem of varying causes. Most children brought to physician for evaluation of difficulties with urinary control will have single or diurnal enuresis, or will be experiencing urgency associated with functional or organic incontinence. To find out the magnitude of urinary incontinence problems in Child Health Department Cipto Mangunkusumo Hospital Jakarta, we retrospectively looked at medical report of such cases between the years of 1989-2001. During eleven years there were 20 cases, consisted of 10 males and 10 females, aged ranged between 3 months up to 16 years. Nineteen children showed significant bacteriuria defined as a urinary tract infection. Ten children were diagnosed as having neurogenic bladder, all had spinal lesions; 7 children had spinal dysraphism while 3 others had osteolytic lesions in vertebrae due to malignancy. Non neurogenic bladder was defined in 6 children, while in other 4 children we defined that urinary incontinence was caused by anatomical abnormalities. Vesico-ureteral reflux in various degree were found in 9 children, while 11 out of 20 (55%) cases were experiencing chronic renal failure on their first visit. Although the annual incidence of urinary incontinence is low, these difficult cases causing many problems. Breakthrough infection was almost unpreventable and in most cases had progressed to renal failure. Many factors such as invasive procedures and prolonged treatment causing fear and frustration to the patients and their parents leading to poor compliance and lost to follow up. In summary we can conclude that urinary incontinence in children is a complex problem include medically, economically, and socially, not only for the patient and their parents, but also for medical profession. [Paediatr Indones 2001; 41:171-174]

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ALL FORMS OF WETTING OTHER THAN ENURESIS SHOULD be categorized as incontinence, i.e the loss of small amount of urine, and never a complete void. The loss of urine is involuntary, objectively demonstrable, and constitutes a social or hygienic problem.¹ Urinary incontinence in children brought to physician for evaluation of difficulties with urinary control will have single or diurnal enuresis, or will be experiencing

urgency associated with functional or organic incontinence. There is association between bladder sphincter dysfunction, recurrent urinary tract infection, and vesicoureteral reflux. These three entities occur separately but the combination greatly increases the risk of renal damage.¹ For this reason, not only the symptomatic urinary infection has to be treated, but also the dysfunction, to bring back regular complete bladder emptying, the most effective barrier against urinary tract infection. To find out the magnitude of urinary incontinence in children, we retrospectively looked at medical record of such cases in Child Health Department Cipto Mangunkusumo

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Hospital Jakarta between the years of 1989 – 2001.

Methods

We retrospectively reviewed the record of all children with urinary incontinence hospitalized or treated ambulatory at the Department of Child Health Cipto Mangunkusumo Hospital, Jakarta during the periods of eleven years from September 1989 through August 2001. The diagnosis of urinary incontinence is established when a child suffered from voiding problems such as daytime wetting with or without nocturnal component, urinary dribbling, and urinary retention with or without incontinence alvi. Physical findings, laboratory investigations such as urinalysis, urine culture, urinary tract imaging were done to confirm the diagnosis, and were all recorded using a special form. Clinical profile, urinary tract abnormality, treatment and outcome of all cases were descriptively reviewed. Urinary incontinence was divided according to the classification proposed by Van Gool et. al¹ and Mundy².

Results

During the period of investigation there were 20 cases out of 926 renal diseases admitted at the same period who fulfilled the criteria of urinary incontinence, consisted of 10 males and 10 females with age ranging from 3 months up to 16 years old (mean age 6 ± 4.2 year). Baseline data, etiological classification, and outcome of the disease were listed on table 1 and 2. Ten

cases (3 boys and 7 girls) were classified as neurogenic bladder ; 6 cases (4 boys and 2 girls) as non neurogenic bladder dysfunction and the remaining 4 cases (3 boys and 1 girl) had structural or anatomic lesions. Spinal dysraphism and mencingomyelocele were the most prevalent etiological factors found in neurogenic bladder dysfunction (7 out of 10 cases), the other 2 cases caused by osteoporotic and osteolytic infiltration of lumbosacral vertebral column due to acute lymphocytic leukemia and the remaining one case caused by Yolk-sac tumor. Other associated anomalies such as sacral lipoma, congenital talipes equinovarus, dimple on the sacral region and hydrocephalus were also noted in conjunction with spinal dysraphism. See Table 1.

TABLE 1. ETIOLOGICAL CLASSIFICATION AND SEX DISTRIBUTION OF URINARY INCONTINENCE

Type	Boys	Girls	Total
Neurogenic bladder	3	7	10
Non-nurogenic bladder dysfunction	4	2	6
Structural or anatomic causes	3	1	4
Total	10	10	20

Most cases classified as non neurogenic bladder-sphincter dysfunction presenting various clinical symptoms and signs that were not easy to identify the un-

TABLE 2. CLINICAL CONDITIONS AND COMPLICATIONS ASSOCIATED WITH URINARY INCONTINENCE

Classification of incontinence	Type of complication			Total
	NB	NNB	Structural-anatomic	
CRF / CRI	8	2	1	11 (55%)
VUR	4	4	1	9 (45%)
UTI	10	5	4	19 (95%)
Death	1	-	2	3 (15%)

Abbreviations:

CRF	: Chronic renal failure	CRI	: Chronic renal insufficiency
VUR	: Vesico-ureteric reflux	UTI	: Urinary tract infection
NB	: Neurogenic bladder	NNB	: Non neurogenic bladder

derlying cause except in two cases (case no 6 and 17) with large bladder capacity and classified as lazy bladder syndrome. Three out of 4 cases with structural or anatomic lesions showed urinary obstruction due to posterior urethral valve, leukemic infiltration of the bladder wall and rhabdomyosarcoma of the bladder consecutively. The remaining last case due to double collecting system. Urinary tract infection (UTI) were found in 19 cases, mostly with recurrent episodes, vesicoureteric reflux (VUR) in 9 cases, all with recurrent UTI ; chronic renal insufficiencies or renal failure were detected in 13 cases as shown in table 3, 8 out of them were those cases associated with VUR.

All cases treated conservatively and only 2 cases with terminal renal failure underwent regular hemodialysis. Urological intervention such as ureteric reimplantation, bladder augmentation, cystostomy or nephrostomy were done in 4 cases, while clean intermittent catheterization (CIC) or indwelling catheter were done in 10 cases. Death were occurred in 3 cases, 2 cases of them due to malignancies and the remaining one case with chronic renal failure. Duration of follow up ranged from one week up to 11 years. Two cases referred to another hospital due to parental request. Other 11 cases were lost to follow up due to uncertain reason. By the end of the study, only 4 cases who still on regular visit.

Discussion

The clinical diagnosis of urinary incontinence in this study is not difficult to determine since nearly all cases come to hospital with the symptoms of voiding problems associated with apparent urinary tract infection as the chief complaints. Eleven cases had either renal insufficiency or renal failure since the first visit . This phenomenon reflects that the disease has been suffered for a long time before the patients or parents seeks medical help.

The presence of spinal dysraphism or meningo-myelocele as underlying cause make a classification of neurogenic bladder dysfunction was easy to identify. These anomalies were found in the majority (70%) of those cases classified as neurogenic bladder. On the other hand the definite diagnosis of non neurogenic bladder-sphincter dysfunction was difficult to establish. Only 2 out of 6 cases classified as non neurogenic bladder-sphincter dysfunction showed blad-

der anomalies namely megalovesica as underlying cause of urinary incontinence in this study. Ultrasonography and voiding cysto-urethrography do not give much information concerning the underlying cause. In difficult cases with a long-standing history, urodynamics is often needed as a complement to history, physical examination and cysto-urethrography, to arrive at the distinction between organic incontinence and functional incontinence³ but unfortunately urodynamic study does not routinely done in pediatric cases due to several constraints.

Incontinence is often associated with urinary obstruction and urinary retention⁴. These symptoms are obviously detected in those cases with structural or anatomic underlying causes in this study presenting these symptoms at the first visit while one case with double collecting system presenting the classical symptoms of dribbling as the chief complaint, suggested that ectopic ureter might be as an underlying cause.

Although the annual incidence of urinary incontinence is low in this study (not more than 2 cases yearly), but cumulative incidence or hospital visit of these difficult cases was not rare and drew special attention for us as medical profession especially pediatric nephrology and urology. The guiding principles of management of urinary incontinence are: (1) that the preservation of renal function takes priority, (2) that the vesico-urethral dysfunction should be treated according to the nature of the objectively demonstrated abnormalities, (3) both of these principles should be interpreted and realistically applied in the light of the child's general condition, (4) that the infection should be controlled⁵. But in reality it is difficult to achieve. Breakthrough infection was almost unpreventable even with potent antibiotics treatment. The role of prophylactic urinary infection still unpromising in such these cases. Reconstructive surgery for vesicoureteric reflux is not indicated since this procedure is of no value in the presence of urinary obstruction or retention lower to the uretero vesical junction.

The International Reflux Study in children stated that a strong correlation was established between recurrent URI, persistence of VUR and bladder sphincter dysfunction⁶. These three entities occur separately but the combination greatly increased the risk of renal damage. This phenomenon was also happened to our cases. All 9 cases with VUR suffered

from recurrent UTI and 8 out of them had progressed to renal insufficiency or even renal failure.

Another problem in the management of urinary incontinence in this study include urological intervention such as indwelling catheter or clean intermittent catheterization (CIC). Although CIC must be regarded as one of the major advance in the management of neurogenic bladder in recent years and for many children is the only way they are likely to achieve voluntary emptying⁵, this procedure is traumatic and is not applicable to many children because they lack the motivation and manipulative skill necessary. This condition brought the consequence of breakthrough infection and the disease ultimately progressed to renal failure as mentioned by van Gool et al in their study¹. Renal replacement therapy such as regular dialysis or kidney transplantation could not be done routinely to all cases due to financial constraint. Poor compliance and lost to follow up were also a big problem in managing children with urinary incontinence. Many factors such as invasive procedures, fear, frustration of the parents, financial problems might be suspected as the reason for these conditions and finally we can predict that the prognosis of the disease become worst.

In summary we can concluded that urinary incontinence in children is a complex problem include medically, socially and economically, not only for the patients and their parents but also for medical profession. Effort should be made to enhance the close cooperation between the patient, parents and medical

personnel ; and much improvement in the treatment of these children is needed, to give them the best possible quality of life. Above all, common sence, patience and dedication are important.

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