Case Report

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Website: www.afrjpaedsurg.org
DOI: 10.4103/0189-6725.151006
Quick Response Code:

Intra thoracic migration of ureteric stent after exstrophy bladder closure: Unusual complication

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ABSTRACT

Classic bladder exstrophy is a rare malformation of the genitourinary tract requiring surgical intervention either one-staged or staged fashion. Premature stent dislodgement is a well-known reported complication. We are reporting an unusual case of migration of ureteric stent to thoracic cavity leading to the pleural effusion and respiratory distress in early post-operative period.

Key words: Bladder exstrophy, percutaneous nephrostomy, pleural effusion, ureteric stent, urinary ascites

INTRODUCTION

Bladder exstrophy (BE) complex remains a major surgical challenge even in the modern era of advanced surgical practice with prevalence of 1 in 30,000 live births. Early as well as late major and minor surgical complications were reported in literature following single stage or staged procedures ranging from premature stent dislodgement to urinary tract infection, wound dehiscence, orthopaedic or neurological complications.

CASE REPORT

A 2-month-old male child was presented with BE complex. Pre-operative investigations included an X-ray pelvis to document pubic diastasis, X-ray spine and ultrasonography abdomen for upper tract evaluation. After obtaining informed and written consent, child was operated under general anaesthesia. Ureteric cannulation tried with no 5 infant feeding tubes but could not be negotiated due to stenotic ureteric orifice. Hence, ureteric catheters (3 Fr) were cannulated bilaterally. Circum bladder incision was given. The incision was deepened from the cephalad extent and a plane was created between the peritoneum and the bladder wall to allow an accurate dissection of the bladder muscle off the edge of the rectus abdominus on either side. Bladder plate mobilized completely after dividing the bladder ligaments. Metaplastic mucosa excised and bladder closure carried out in two layers after placing no 14 Mallicot's catheter as suprapubic cystostomy. Both the ureteric catheters and Mallicot's catheter were fixed to bladder wall and skin. A prevesical corrugated rubber drain was placed and wound closed in layers. Epispadias and bladder neck repair was not attempted.

First post-operative day was uneventful with all stents draining with urine output more than 1 ml/kg/h. On day 2, child started having mild abdominal distension and tachypnea for which X-ray abdomen and chest antero-posterior view was done. Both the ureteric catheters were normal in position and there was blunting of right costo-phrenic angle due to hydrothorax [Figure 1a]. As the severity of symptoms increased rapidly over few hours, urgent ultasonography was carried out, which showed gross urinary ascites with a right pleural effusion, bilateral hydroureteronephrosis and migration of right ureteric catheter to the right thoracic cavity. Arterial blood gas (ABG) analysis was carried out, which showed features of metabolic acidosis. Urgent tapping of 150 ml fluid was carried out from an abdomen and a pleural cavity. A chest and abdomen X-ray were carried out, which showed clearing of pleural effusion on the right side and right ureteric catheter was found to be migrated to the right thoracic cavity and left ureteric catheter was found just below the left diaphragm [Figure 1b]. Ureteric catheters were removed and bilateral percutaneous nephrostomies were carried out under ultrasonographic guidance [Figure 2]. ABG parameters improved within few hours. Respiratory distress and

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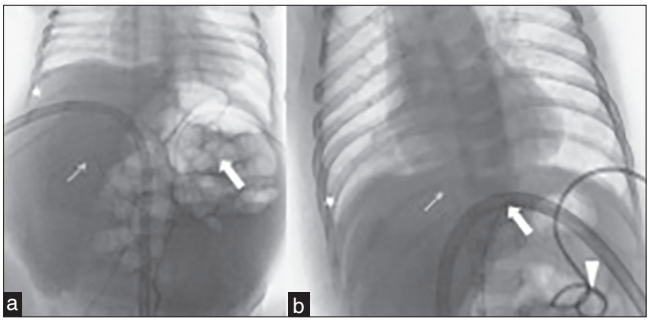

Figure 1: (a) X-ray abdomen and chest showing both ureteric catheters in normal position and blunting of right costo-phrenic angle due to hydrothorax (thin arrow: tip of right ureteric catheter, thick arrow: tip of left ureteric catheter, asterix: blunting of right costo-phrenic angle), (b) X-ray abdomen and chest showing migrated ureteric catheters and clearing of right costo-phrenic angle after tapping of fluid (thin arrow: tip of right ureteric catheter in right thoracic cavity, thick arrow: tip of left ureteric catheter below left diaphragm, asterix: clearing of right costo-phrenic angle, arrow head: Pigtail catheter in left renal pelvis)

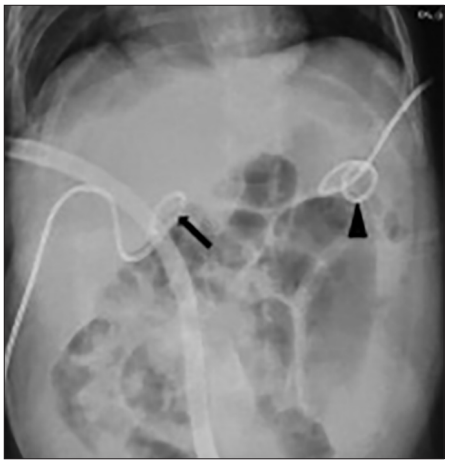

Figure 2: X-ray abdomen and chest antero-posterior view after removal of both ureteric catheters and insertion of bilateral pigtail catheters as percutaneous nephrostomies (arrow head: pigtail catheter in left renal pelvis, thick arrow: pigtail catheter in right renal pelvis)

abdominal distension also improved within 24 h. Rest of hospital stay in the post-operative period was uneventful.

DISCUSSION

Reconstruction of BE complex represents a challenge to paediatric urologists. Repair of BE Complex aims at successful bladder and abdominal wall closure with cosmetically and functionally acceptable external genitalia.[1] Achieving the continence and preservation of renal function are considered the most difficult aspect of the repair. Multiple surgical approaches exist for the modern treatment of bladder exstrophy,[2-5] since first described in 1942 by young.[6] BE complex surgeries in the post-operative period is complicated by numerous and variable events such as infection, dehiscence, upper tract dilatation with deterioration, fistluas, stone formation and incontinence. Schaeffer *et al*.[7] described major complications related to urology and orthopaedic, which includes bladder prolapse and wound dehiscence in 3% cases, osteotomy related complications in 6% cases. Minor urological complications in term of suprapubic tube dislodgement, urinary tract infection; posterior bladder wall obstruction was seen in 11% case. Although, incidence of premature tube dislodgement has been reported in literature, migration of a ureteric catheter to intrathoracic cavity leading to pleural effusion, respiratory distress along with urinoma formation in the abdominal cavity is an unexpected complication, which encouraged us to report this case.

CONCLUSION

Ultrasound and X-ray abdomen should be carried out in all cases of BE in the post-operative period who developed unusual symptoms not related to surgery to confirm the position of stents and early diagnosis of complications like malposition and migration leading to major life threatening complications.

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Cite this article as: Panda SS, Bajpai M, Singh A, Chand K. Intra thoracic migration of ureteric stent after exstrophy bladder closure: Unusual complication. Afr J Paediatr Surg 2015;12:98-9.

Source of Support: None. **Conflict of Interest:** None declared.