Case Report

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Post appendectomy acalculus bilateral ureteric obstruction: A rare entity in children

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ABSTRACT

Bilateral acalculus ureteric obstruction is described as rare sequelae of acute appendicitis in two paediatric patients aged 6 and 11 years presented with features of anuria. Imaging and endoscopic evaluation confirmed bilateral ureteric obstruction secondary to bladder wall oedema as an inflammatory reaction to appendix. Both cases recovered following bilateral ureteric stenting and are doing well.

Key words: Acalculuc distal ureteric obstruction, anuria, appendectomy

INTRODUCTION

Although appendectomy is among commonly performed surgical procedure in children it is rarely associated with urological complications and hence involvement of paediatric Urologist. Among known urological complications like unilateral right ureteric obstruction secondary to appendicular abscess etc. bilateral ureteric obstruction due to bladder wall resulting in anuria in post-operative period has been reported in only handful of cases in English literature.[1-4] Awareness of such uncommon sequelae can prevent unnecessary radiological and endoscopic intervention aimed at diagnosing more common calculus obstructive uropathy. Hence, we here in report the present cases with the aim to highlight such rare sequelae of appendicitis following appendectomy among practising paediatric Urologist so that undue morbidity can be avoided by appropriate intervention thus preventing permanent renal damage.

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CASE REPORTS

Case 1

A 6-year-old male patient presented with progressive oliguria on the 5th post-operative day after open appendectomy performed for perforated pelvis appendicitis. There were associated symptoms in form of suprapubic discomfort and dysuria. Laboratory investigations suggested normal white blood cell count with deranged renal function test showing serum creatinine 412 mol/ml, serum potassium 6.2. Ultrasound scan kidneys, ureters, bladder (KUB) showed minimal hydronephrosis in both kidneys without any evidence of renal stone and mild increase in thickness of bladder wall. Patient underwent cystoscopy, which showed oedema of trigone and posterior bladder wall obliterating both ureteric orifices. Bilateral double J (DJ) stent insertion resulted in prompt recovery. DJ stent removed after 6 weeks after repeat ultrasound scan showed normal both kidneys. Patient is presently doing well for the last 6 months on follow-up.

Case 2

An 11-year-old male referred to paediatric urology after developing anuria on 3rd post-operative day following appendectomy. Intraoperative record showed the presence of inflamed long appendix in pelvic position with localised collection in pelvis. There were no associated symptoms. Lab investigations showed deranged renal function with serum creatinine 342 with a rising trend. With provisional diagnosis of obstructive uropathy secondary to calculi patient underwent ultrasound scan, which showed bilateral hydronephrosis without any evidence of renal lithiasis and pelvic collection. Cystoscopy showed oedema of posterior bladder wall involving bilateral ureteric orifices. Bilateral DJ stenting was performed with resistance on left side. Patient recovered and stent were removed after 6 weeks after a normal ultrasound scan KUB. Presently patient is doing well on regular follow-up in out-patient clinic.

DISCUSSION

Acute appendicitis has been rarely associated with involvement of urinary tract in children. Among the commonly reported complications of appendicitis include microscopic haematuria, unilateral right or rarely bilateral ureteric obstruction secondary to appendicular abscess, transient right pyelocalyceal dilatation in up to 38% of cases.[1-3,5,6] However, anuria in post appendectomy period due to inflammatory oedema of bladder wall resulting in bilateral ureteric orifices involvement especially in abscence of appendicular abscess remains extremely rare in paediatric age group.[1-4] Among a handful of such reported cases this rare sequelae of appendicitis has rarely been discussed in paediatric urology literature until date.

Among the reported cases and as confirmed endoscopically in present cases the pathogenesis of ureteric obstruction is attributed to involvement of both ureteric orifices by bladder wall oedema, which results secondary to presence of inflammatory appendix.[1,5,6] Although not mentioned in literature we experienced the present sequelae in presence of pelvic appendix in both our cases, which being in close proximity to posterior bladder wall explains its involvement by inflammatory process.

The clinical presentation is characterised by oliguria, anuria and flank pain with impaired renal function usually between 3 and 14 post-operative day.[1,3-7] An awareness regarding this rare entity in presence of inflamed appendix especially in pelvic position provides a clue to diagnosis. Among imaging modalities ultrasound scan KUB especially with saline filled bladder showing oedema of posterios bladder wall and lack of jet of urine from ureteric orifices with or without hydronephrosis in abscence of calculi is usually diagnostic.[1,2,8] Advanced imaging modalities such as computed tomography scan, intravenous pyelogram, which are usually performed to due to lack of awareness especially to rule out calculus obstructive uropathy are usually not required and hence an awareness among treating physician can avoiding associated radiation and contrast hazards.

The management of such cases aims at preventing irreversible renal damage by timely surgical intervention along with stabilisation of renal status in post-operative period.[1-4] As experienced in present and reported cases bilateral ureteric stenting remains the treatment of choice.

Thus in conclusion bladder wall oedema resulting in bilateral ureteric obstruction should be considered as a cause of obstructive uropathy resulting in anuria especially in patients operated for pelvic appendicitis and presenting between 3 and 16 the post-operative day even in absence of pelvic collection. Awareness among physicians can prevents long-term morbidity by appropriate intervention thus avoiding further endoscopic and radiological intervention aimed at diagnosing common causes of ureteric obstruction especially renal lithiasis.

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