Vesicocutaneous Fistula Caused by Giant Vesical Calculus

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Received: 5 February 2009 / Accepted: 26 February 2009 / Published online: 23 November 2010
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Abstract Vesicocutaneous fistula is an extremely rare complication of vesical calculus. To our knowledge only three cases have been reported in the World literature. Because of its rarity, here we report a case of vesicocutaneous fistula caused by giant vesical calculus. This is probably the fourth case of vesicocutaneous fistula caused by giant vesical calculus.

Keywords Vesicocutaneous fistula · Giant vesical calculus

Introduction

Bladder calculi may be primary or secondary. A primary vesical calculus develops in the sterile urine while secondary bladder stone occurs in the presence of infection, bladder outlet obstruction, impaired bladder emptying or a foreign body. Men are affected eight times more frequently than women [1]. Giant vesical calculi weighing more than 100 g are rare in recent urosurgical practice [2]. This is supported by the fact that fewer than 30 reports are available in English literature having weight of the stone more than 100 g [3]. Presence of both pathologies (Vesicocutaneous fistula with giant vesical calculus) together is extremely rare occurrence [2].

Case History

60 years old male patient presented with history of increased straining during micturation, decreased strength and caliber of urine flow and intermittent burning micturation since last 6 months. In addition to this he had spontaneous leakage of fluid in lower abdomen since last 15 days. Before his present visit, patient had undergone open cystolithotomy 5 years back. After surgery he was all right but since last 6 months he was facing above problems, spontaneous continuous leakage of fluid in the lower abdomen was the most distressing one among all.

Per abdominal examination revealed a midline vertical infra-umbilical scar and a small opening measuring about 5 mm in diameter was present near the lower end of the scar Fig. 1. Opening was lined by granulation tissue and urine leak was visible through it. Rest of the abdominal examination was normal except slight tenderness in the hypogastric region. Per rectal examination revealed hard and mobile mass in the urinary bladder with no prostatomegaly.

Plain abdominal radiograph showed a huge radio-opaque shadow in the pelvis suggesting of giant vesical calculus Fig. 2. Abdominal ultrasonography confirmed finding of vesical calculus with no evidence of hydronephrosis along with hydroureter. Contrast C.T. Scan fistulogram outlined fistulous tract with giant calculus in the urinary bladder Fig. 3. Urine analysis showed microscopic hematuria and presence of pus cells. Urine culture was positive for *E. coli*.

Open suprapubic cystolithotomy (extraperitoneal) was performed and giant calculus measuring about 70×40×30 mm was retrieved Fig. 4. The stone had a dry weight of 250 g.

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Fig. 1 Photograph showing external opening of vesicocutaneous fistula

A fistulous tract (about 4 cm in length) communicating the bladder and anterior abdominal wall was excised. Fistulous opening in the bladder and bladder incision was closed in two layers after keeping retropubic drain. Recovery was uneventful.

Discussion

A fistula is an abnormal communication between two epithelially lined surfaces [4]. Vesicocutaneous fistula is an external fistula; it may be congenital or acquired type. Acquired fistula occurs after operations on the urinary bladder

Fig. 2 Plain abdominal radiograph showing radio-opaque shadow in pelvis suggesting giant vesical calculus. (Concentric ring)

Fig. 3 C.T. Scan fistulogram showing vesicocutaneous fistulous tract with giant vesical calculus in the bladder

or after accidental injury to it. In adults bladder is mostly involved due to malignant and inflammatory conditions of surrounding viscera leading to internal fistula formation [5]. But vesicocutaneous fistula formation due to giant vesical calculus (benign condition) is extremely rare occurrence [6]. The strength of rectus abdominal muscles makes it difficult for a fistula to form in that area. Defects in the abdominal wall, weak musculature or a history of previous abdominal surgery can facilitate such fistula formation. The presence of calculi and chronic cystitis over time induces erosion and subsequent fistula formation [2].

It is thought that when a stone increases to a certain size, bladder irritation begins to diminish in relation to the extent that the stone stops moving inside the bladder reducing symptomatology. This can lead to lack of medical attention during which time the stone continues to increase until it becomes a giant calculus [2]. Contrast CT scan fistulogram is especially helpful for diagnosis of vesicocutaneous fistula with giant vesical calculus.

Fig. 4 Photograph showing giant vesical calculus measured 70×40×30 mm in size

Management of vesicocutaneous fistula with giant vesical calculus is essentially open surgical [7]. In addition to the treatment of fistula the primary condition leading to fistula formation must be treated simultaneously. Though extremely rare the possibility of giant vesical calculus should always be considered while investigating a case of vesicocutaneous fistula.

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