Bladder Rupture and Urine Fistula Between-Bladder and Supracondylary Pin Tract After Pelvis Fracture: A Case Report

Pelvis Kırığı ile Birlikte Supra Kondiler İskelet Traksiyonu Çivi Dibinden İdrar Fistülü: Olgu Sunumu

Pelvis Kiriği İle Birlikte Supra Kondiler İdrar Fistülü / Pelvic Fractures with Urine Supracondiler Fistula

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Özet

Pelvik kırıklarının en önemli komplikasyonlarından biri mesane rüptürüdür. Pelvis kırıklarının potansiyel komplikasyonlarından biri de mesane yaralanmalarına bağlı olarak gelişen vesikovajinal,vesikorektal, vesikouterin fistüllerdir. Literatürde nadir rastlanan mesane rüptürü ile birlikte, femur suprakondiler bölgede çivi dibinden üriner fistülizasyon olgusunu sunmayı amaçladık. Pelvis kırığı olan hastalarda iskelet traksiyonu çivisi dibinden gelen sıvının tel dibi infeksiyonunun yanı sıra çok nadir bir komplikasyon olan mesane fistülizasyonu da olabileceği akılda tutulmalıdır.

Anahtar Kelimeler

Pelvis Kırığı; Mesane Rüptürü; Çivi Dibi; İdrar Fistülü

Abstract

One of the most important complications of pelvic fractures is bladder rupture. Potential complications of pelvic fractures caused by bladder ruptures are vesicovaginal, vesicorectal, vesicouterine and urethrorectal fistulas. Along with bladder rupture, which is rarely encountered in the literature, the case of urinary fistula from pin tract in femur supracondylar region was represented. The case of the bladder rupture induced by pelvic fracture that associated with urinary fistulisation between bladder and pin tract from femur supracondylar region was reported.

Keywords

Pelvis Fracture; Bladder Rupture; Pin Tract; Urine Fistula

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Introduction

Roughly 90% of all bladder ruptures are associated with pelvic disruption; however, only 9% to 16% of all pelvic disruptions have a concomitant bladder rupture [1]. Vesicovaginal, vesicorectal, vesicouterine fistula is a well-known surgical problem defined as an abnormal connection between the urinary bladder, the vagina, the rectum and the uterine [1-4]. Vesicocutaneous fistulas are characterized as an aberrant connection between the urinary bladder and the skin. Their formation has been associated with postsurgical complications, trauma as the result of bladder entrapment by external pelvic fixator [5]. Furthermore, no report has been published describing bladder rupture and urine fistula between-bladder and supracondylar pin tract after pelvis fracture. We present the unique case of bladder rupture and urine fistula between-bladder and supracondylar pin tract after blunt pelvic trauma resulting from a traffic accident.

Case Report

The case is a 63 year-old female patient. As a result of in-vehicle traffic accident, in another centre pelvic external fixator and bilateral skeletal traction were applied to the case due to fracture of left ischium, right iliac wing fracture and right sacroiliac joint separation (Tile Type C1-2) [6] (Fig.1) . The case was transferred to emergency service of our hospital and primary bladder repair was applied. Serous flow occurred in the pin tract in supracondylar region in 12th day of bladder repair. There were no bacteria or increase of polymorphonuclear leukocytes related pin tract infection in direct microscopic examination and aerobic culture taken from pin tract. Leakage of methylene blue was observed from the pin tract in supracondylar region after filling the bladder with methylene blue and a fistula between bladder (Fig. 2) and supracondylar pin tract was detected in bladder cystogram (Fig. 3). Bladder was repaired again.

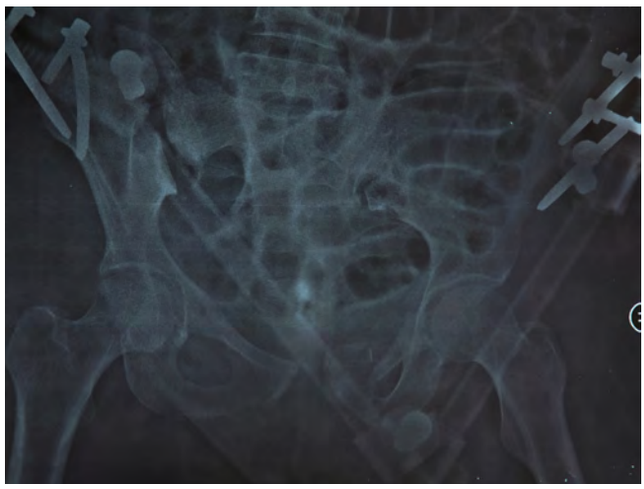


Figure 1. Left ischium pubic branch fracture, right iliac wing fracture, right sacroiliac joint separation (Tile Type C1-2) are seen in X-Ray graph.

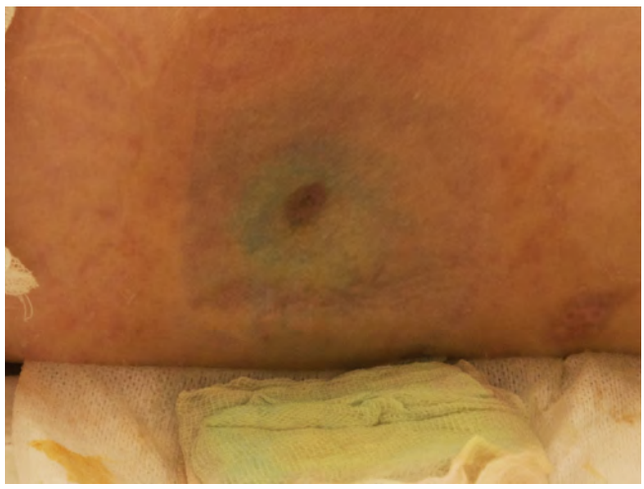


Figure 2. Leakage of methylene blue from pin tract after the bladder was filled with methylene blue



Figure 3. Leaking of radio opaque substance from bladder to pin tract according to bladder cystogram.

Discussion

Since pin tract infection is the most significant complication associated with the use of external fixation, it has been reported to occur up to 63% of pins[6-8] .This high infection rate has been attributed to the conduit that the pins provide between the skin and underlying soft tissue and bone. Complications related to pin tract infection include a need for pin change or removal, failure of fracture healing, septic arthritis, and osteomyelitis. Therefore, a method to decrease the rate of pin infection has tremendous clinical appeal [6]. However, main macroscopic and microscopic main characteristics of reported case were not complied with the infection. Fluid is more serious and has a homogeneous colour. Another possible reason is that synovial fluid leaking from a pin placed near the joint. As a result of radiological controls, it was verified that there was no relationship between pin and joint. By virtue of cystogram and filling bladder with methylene blue, it was determined that the fluid was urine. Alexander and Sagi [9] reported a case having septic cox arthritis secondary to development of a cystosynovial fistula after non-operative treatment for both a pelvic fracture and bladder rupture. Tolkach et al.[10] reported Vesico-Acetabular Fistula and Urolithiasis in the hip joint cavity due to persistent bladder entrapment after acetabular fracture. However, there has been no similar case in the literature.

In conclusion, it should be remembered that in patients having pelvic fracture along with bladder and urethral injury, fistula between bladder and pin tract can occur as well as possible reasons such as pin tract infection or synovial fluid leakage in case of serous fluid from pin tract.

Competing interests

The authors declare that they have no competing interests.

References

1. Brandes S, Borrelli Jr J. Pelvic fracture and associated urologic injuries.World J Surg 2001;25(12):1578-87.
2. Kalorin CM, Rosati C, Markarian M. Rectovesical Fistula in Association with Vesicocutaneous Fistula After Blunt Pelvic Trauma. J Trauma 2008;65(4):34-5.
3. Kochakarn W, Ratana-Olarn K, Viseshsindh V, Muangman V, Gojaseni P. Vesico-vaginal fistula: experience of 230 cases. J Med Assoc Thai 2000;83(10):1129-32.
4. Benchekroun A, Lachkar A, Soumana A, Farih MH, Belahnech Z, Marzouk M, et al. Urethrorectal fistula. Report of 11 cases. Ann Urol (Paris) 1999;33(2):93-6.
5. Chitale SV, Almeida A, Hadfield JI. Urological complication of pelvic fracture treated by an external fixator. Br J Urol 1997;80(4):681-2.
6. Tile M. Acute pelvic fractures: I. Causation and classification. J Am Acad Orthop Surg 1996 ;4(3):143-51.
7. Mahan J, Seligson D, Henry S, Hynes P, Dobbins J. Factors in pin tract infections. Orthopedics 1991;14(3):305-8.
8. Coester LM, Nepola JV, Allen J, Marsh JL. The effects of silver coated external fixation pins. Iowa Orthop J 2006;26:48-53.
9. Alexander G, Sagi HC. Septic Arthritis of the Hip After Nonoperative Treatment of a Pelvic Fracture Associated With Bladder Rupture. J Orthop Trauma 2012;26(5):40-2.
10. Tolkach Y, Gadjiev N, Korol V, Gonchar I. Vesico-acetabular fistula and urolithiasis in the hip joint cavity due to persistent bladder entrapment after acetabular fracture.Korean J Urol 2011;52(3):221-4.

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