Traumatic Testicular Dislocation a Review of 36 Cases

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Abstract

We retrospectively reviewed 36 patients who were treated in our institutes with traumatic testicular dislocation from 1975 to 1997. The mean patient age was 25 years old (18-38). Average time to present at the emergency room was 1 hour (0.5-6). Bilateral dislocation was found in thirty cases and unilateral dislocation was found in six cases. The sites of dislocation included: 34 cases (64 testes) at superficial inguinal area, one case (one testis) at acetabular area, and one case (one testis) at the perineal area. Closed reduction under general anesthesia was successful in 14 cases, open reduction after failed closed reduction in 10 cases, open exploration and repaired testis with reposition in 11 cases and orchiectomy only in one case. The overall results after treatment showed the normal size and position of the testis.

Key word : Testicular Injury, Dislocation

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Traumatic testicular dislocation is an uncommon event, defined as nonscrotal presentation of one or both normally descended testis after trauma. Claubry reported the first case of traumatic testicular dislocation in 1818[1,2] and since then only a few cases have been reported in the literature. We surprisingly found a high incidence of this entity among motorcycle riders in Bangkok, therefore, our clinical experience with traumatic testicular dislocation was reviewed.

PATIENTS AND METHOD

From 1975 to 1997, thirty six patients with traumatic testicular dislocation were diagnosed and treated at our hospitals. All of them were motorcycle riders and sustained testicular dislocation after collision. The mean patient age was 25 years old (range 18-38 years). An average time to present at the emergency room was 1 hour (range 0.5-6 hours). The diagnosis was made readily at the time of presentation without delay. Bilateral testicular dis-

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Table 1. Sites of testicular dislocation.

Superficial inguinal area	34 cases (64 testis)
Perineal area	1 case (1 testis)
Acetabular area	1 case (1 testis)

Table 2. Associated injuries.

Fractured femur	8
Fractured fore arm	3
Hip dislocation/disarticulation	2
Pelvic fracture	1
Bulbar urethral injury	1

Table 3. The treatment of 36 cases.

Closed reduction	14
Open reduction and orchiopexy (after failure of closed reduction)	10
Open exploration and repaired testes	11
Orchiectomy	1

location was found in thirty and unilateral dislocation in six patients. The sites of dislocation are shown in Table 1 and the associated injuries are shown in Table 2.

RESULTS

All of the 35 patients were motorcycle riders gave a history of the injury by gliding, hitting the scrotum and perineum on the gasoline tank during the collision. One patient was run over by a following truck after his fall, resulting in hip disarticulation and dislocation of the testis into the acetabulum. They confirmed that their testes were normally descended before the accidents. Most of the patients complained about pain at the scrotum and at the dislocated site. Two patients with pelvic fracture and dislocated hip joint suffered overwheming pain at the fractured and dislocated area.

The emptied scrotum was noted on examination (Fig. 1). The dislocated testis could be palpated at the superficial inguinal or perineal area in all cases except one who had dislocated testis at the acetabulum replacing the disarticulated hip. In the case of testicular dislocation associated with testicular rupture, the hematoma around the dislocated testis was obvious.

The treatment of dislocated testes in all cases consisted of closed reduction under general anesthesia. Open reduction and orchiopexy were done in cases of failed closed reduction. Open exploration and repair of the testis was performed if ruptured testis was suspected. Orchiectomy was performed in only one case who had dislocated testis at acetabulum due to severe associated injury. (Table 3.)

It was noteworthy that the closed reduction gained the highest successful rate when performed early or less than two hours after injury, especially in the absence of significant tissue edema.

Follow-up in the 20 available cases one month after the accident showed satisfactory results. Eight cases who had undergone open reduction and 12 cases of closed reduction of the testes showed the testes in the normal position and size in the scrotal sacs.

DISCUSSION

Trauma to the testis is an uncommon occurrence and testicular dislocation is rare[1]. Alexander Cass reviewed testicular injuries after blunt trauma and found testicular rupture in 48-50 per cent but no testicular dislocation[3,4]. Since the first reported case of testicular dislocation by Claubry in 1818[2] only a few cases have been reported in the literature. Previously the majority of cases were caused by being run over by a wagon wheel[5-8], but nowadays the etiology has changed to motorcycle accidents[9,10]. After the forces are applied to the

Fig. 1. Shows emptied well developed scrotum in bilateral testicular dislocation.

Fig. 2. Bilateral testicular dislocation with some degree of scrotal sac swelling.

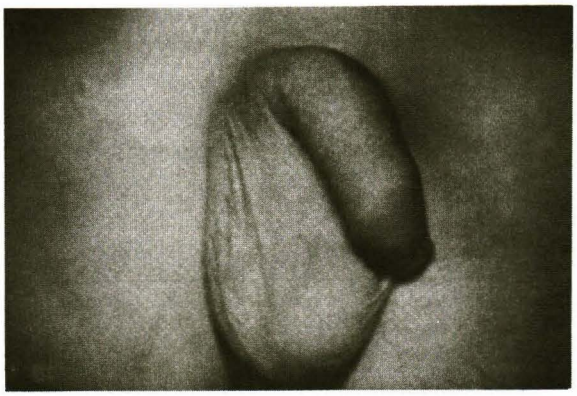

Fig. 3. Unilateral testicular dislocation: Well developed scrotal sac is noted.

scrotum and the perineum, the Gubernaculum is torn together with the fascia covering the spermatic cord, and the testis can be displaced to other sites depending on the vector of the force applied. Because of the button hole defect of the fascia covering the spermatic cord, the displaced testis could not be repositioned spontaneously[9,10]. The possibility of the displaced testis to the new sites are: superficial inguinal area (50%), inguinal canal (8%), femoral canal (<1%), abdominal (6%), acetabular (4%), pubic (18%), penile (8%), crural (2%) and perineal (4%)[11].

In our series, all cases of dislocated testis were caused by motorcycle accidents. The mechanism of injuries is the direct force applied to the scrotum and perineum by the gasoline tank. Because of the convex shape of the tank the vector of the force was superolaterally, therefore, most of our patients had dislocated testis at the superficial inguinal area (94%).

The important points of diagnosis are the suspected mechanism of injuries that the force was applied directly to the scrotum and perineum, painful scrotum and pain at the area of the dislocated testis and associated with nausea and vomitting. On physical examination, the emptied well developed scrotum was found (Fig. 1). The differential diagnosis from cryptorchidism can be readily made because in cryptorchidism the scrotum is not well developed (Broakman's sign)[2]. The dislocated testis can be palpated if the dislocated site is in the superficial area. However, some reports revealed abdominal dislocation which is difficult to detect[11].

Closed reduction of dislocated testis is recommended as the primary measure and a high success rate will be expected if it is performed early before the occurrence of tissue swelling[12,13]. After failure of closed reduction, open reduction and fixation is recommended[12-14]. If diagnosis is delayed it can wait until 3 days post injury. When tissue swelling has subsided, closed reduction is easier[12-14]. If a long delay in diagnosis of peritesticular fibrosis occurs, surgical exploration, lysis of adhesion and re-positioning of the testis can be done[12-14]. In the case of ruptured testis associated with dislocation, hematoma around the dislocated testis is obvious[15]. Our cases of suspected ruptured testis underwent early exploration and showed very low morbidity.

The results of testicular viability after reduction are good. Although many reported cases revealed atrophic change of seminiferous tubule after delayed diagnosis and management, normal spermatogenesis was obtained in early reduction of bilateral testicular dislocation[9,10]. In our series of 20 cases, good results after treatment were evaluated by normal position and volume of the testes one month after the injury.

SUMMARY

Traumatic testicular dislocation is an uncommon injury but we found a high incidence after a motorcycle accident. Diagnosis were made by

palpating the ectopic testes and the emptied well developed scrotum. It can be managed by closed reduction if diagnosed early and open reduction in delayed cases. Good results can be obtained after appropriate treatment, normal testis and normal spermatogenesis have been reported.

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REFERENCES

1. Singer AJ, Das S, Gaorell GJ. Traumatic dislocation of testes. Urology 1990; 35:310-2.
2. Morgan A. Traumatic luxation of the testis. Br J Surg 1965;52:669-72.
3. Cass AS. Testicular trauma. J Urol 1983;129:299-300.
4. Cass AS, Luxenberg M. Testicular injuries. Urology 1991;37:528-30.
5. Alyea EP. Dislocation of the testis. Surg Gynecol Obstet 1929;49:600-16.
6. Herbst RH, Polkey HJ. Luxation testis traumatica. Am J Surg 1936;34:18-33.
7. Ockuly EA. Traumatic luxation of the testis. Am J Surg1946;71:93-5.
8. Sethi RS, Singh W. Traumatic dislocation of testis. J Urol 1967;98:501-2.
9. Goulding FJ. Traumatic dislocation of the testis : addition of two cases with a changing etiology. J Trauma1976;16:1000-2.
10. Pollen JJ, Funckes C. Traumatic dislocation of the testis. J Trauma 1982;22:247-9.
11. Schwartz SL, Faerrber GJ. Dislocation of the testis as a delayed presentation of scrotal trauma. Urology 1994;43:743-5.
12. Nagarajan VP, Pranikoff K, Imahori SC, Rabinowitz R. Traumatic dislocation of testis. Urology 1983;22:521-4.
13. Neistadt A. Bilateral traumatic dislocation of the testis. J Urol 1967;97:1057-8.
14. Lee JY, Cass AS, Streitz JM. Traumatic dislocation of testes and bladder rupture. Urology 1992; 40:506-8.
15. Edson M, Meek JM. Bilateral testicular dislocation with unilateral rupture. J Urol 1979;122:419-20.

ลูกอัณฑะเคลื่อนจากอุบัติเหตุ: ประสบการณ์ในผู้ป่วย 36 ราย

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ได้ศึกษาย้อนหลังผู้ป่วยตั้งแต่ พ.ศ. 2518 ถึง 2540 พบผู้ป่วยที่มีลูกอัณฑะเคลื่อนหลังเกิดอุบัติเหตุ 36 ราย อายุเฉลี่ย 25 ปี (18 ถึง 38 ปี) เป็นผู้ขับขี่รถจักรยานยนต์ทั้งหมด ซึ่ง 35 ราย ประสบอุบัติเหตุ ขับขี่จักรยานยนต์ขนรถอื่น และถังน้ำมันรถกระแทกโดนถุงอัณฑะ ส่วนอีก 1 ราย ประสบอุบัติเหตุรถคว่ำและรถบรรทุกทับบริเวณเชิงกราน ระยะเวลาเฉลี่ยหลังเกิดอุบัติเหตุจนถึงโรงพยาบาล 1 ชั่วโมง (30 นาที ถึง 6 ชั่วโมง) ผู้ป่วยมีอัณฑะเคลื่อนพร้อมกันทั้ง 2 ข้าง จำนวน 30 ราย ข้างเดียว 6 ราย ตำแหน่งของลูกอัณฑะที่เคลื่อนอยู่บริเวณขาหนีบ 34 ราย (64 ข้าง) อยู่บริเวณฝีเย็บ 1 ราย (1ข้าง) และอยู่ในช่องสะโพก 1 ราย (1 ข้าง) ผู้ป่วยได้รับการรักษาโดยการดมยาสลบและดันลูกอัณฑะกลับลงถุงอัณฑะสำเร็จ 14 ราย ต้องผ่าตัดเพื่อนำอัณฑะลงมาในถุงอัณฑะหลังจากดันกลับไม่สำเร็จ 10 ราย ผ่าตัดเพื่อเย็บซ่อมอัณฑะเนื่องจากมีอัณฑะแตกร่วมด้วย 11 ราย ตัดอัณฑะออก 1 ราย ผู้ป่วยมาติดตามผลการรักษา 20 ราย พบว่า 1 เดือนหลังเกิดอุบัติเหตุผู้ป่วยทุกรายมีขนาดและตำแหน่งของลูกอัณฑะปกติ ซึ่ง 12 รายที่มาติดตามผลการรักษาได้รับการรักษาโดยการดันอัณฑะกลับลงถุงอัณฑะ จะเห็นได้ว่าถึงแม้อุบัติเหตุชนิดนี้พบได้ไม่บ่อย แต่ถ้าสามารถให้การวินิจฉัยและการรักษาได้รวดเร็ว ผลของการรักษาอยู่ในเกณฑ์ดี

คำสำคัญ : อุบัติเหตุของลูกอัณฑะ, อัณฑะเคลื่อน

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