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ARAŞTIRMA / RESEARCH

A neglected treatment in middle school and high school age genital trauma: analgesia management with pain scoring

Ortaokul ve lise çağı genital travmalarında ihmal edilen bir tedavi: ağrı skorlaması ile analjezi yönetimi

Burak Demirci[1], Çilem Çaltılı[1], Abuzer Coşkun[1].

[1]İstanbul Bağcılar Education and Research Hospital, Department of Emergency Medicine, İstanbul, Turkey

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Abstract

Purpose: The purpose of this study was to assess analgesic applications accompanied by numerical and verbal pain scores, radiological imaging, and consultation requests for genital traumas, which affect a small percentage of middle and high school students.

Materials and Methods: This retrospective study included 237 middle school and high school age, 10-18 years old patients who applied to the emergency department due to genital trauma between January 2019 and December 2020. The types of trauma, radiological imaging, genital organ injuries, analgesia applications, consultations, and verbal and numerical pain scale scores of patients were all evaluated.

Results: Of the 237 patients included in the study, 90 (38%) were female, and the mean age was 13.80±2.37 years (range, 10-18 years). Of the patients, 136(57.4%) were admitted with falls, 63(26.6%) traffic accidents, 35(14.8%) penetrating and 3(1.3%) iatrogenic injuries. The numerical pain score was 6.63±1.43 in falls, 6.09±1.66 in traffic accidents, 4.80±1.53 in penetrating injuries, and 3.67±1.15 in iatrogenic traumas. Analgesics were administered to 93(39.2%) of all patients. The severity of pain was mild in 43(18.1%) patients. It was moderate in 140(59.1%) and severe in 54(22.8%).

Conclusion: Genital traumas that occur alone are extremely rare and are frequently associated with multiple organ injuries. Genital traumas have a wide variety of etiological causes and complications. In cases of pediatric genital trauma, the use of verbal and numerical pain scales may be beneficial in evaluating patients, determining imaging requirements, and determining analgesia applications.

Keywords:. Emergency department, pediatric genital trauma, analgesia, numerical and verbal pain scales

Öz

Amaç: Ortaokul ve lise çağının küçük bir kısmını oluşturan genital travma olgularında, sayısal ve sözel ağrı skoru eşliğindeki analjezik uygulamalarının, radyolojik görüntülemelerinin ve konsültasyon istemlerinin değerlendirilmesi amaçlandı.

Gereç ve Yöntem: Bu retrospektif çalışmaya Ocak 2019-Aralık 2020 tarihleri arasında genital travma nedeniyle acil servise başvuran ortaokul ve lise çağındaki 10-18 yaş arası 237 hasta dahil edildi. Hastaların travma sınıflamaları, radyolojik görüntülemeleri, genital yaralanma şekilleri, analjezi uygulamaları, konsültasyonları, sözel ve sayısal ağrı skalası sonuçları değerlendirildi.

Bulgular: Çalışmaya alınan 237 hastanın 90'ı (%38) kadın olup, yaş ortalaması 13.80±2.37 yıl (dağılım, 10-18 yıl) idi. Hastaların 136'sı (%57,4) düşme, 63'ü (%26,6) trafik kazası, 35'i (%14,8) penetran ve 3'ü (%1,3) iyatrojenik yaralanma ile başvurdu. Sayısal ağrı skoru düşmelerde 6.63±1.43, trafik kazalarında 6.09±1.66, penetran yaralanmalarda 4.80±1.53 ve iyatrojenik travmalarda 3.67±1.15 idi. Tüm hastaların 93'üne (%39,2) analjezik uygulandı. 43 (%18.1) hastada ağrı şiddeti hafifti. 140'ında (%59.1) orta, 54'ünde (%22.8) şiddetli idi.

Sonuç: İzole genital travmalar çok nadirdir ve sıklıkla çoklu organ yaralanmaları ile ilişkilidir. Genital travmalarda; etiyolojik nedenler ve komplikasyonlar oldukça çeşitlilik gösterir. Pediatrik genital travma olgularında hastaların değerlendirilmesinde, görüntüleme gereksinimlerinde ve analjezi uygulamalarında sözel ve sayısal ağrı skalalarının kullanılması faydalı olabilir.

Anahtar kelimeler: Acil servis, pediatrik genital travma, analjezi, sayısal ve sözel ağrı skalaları

Yazışma Adresi/Address for Correspondence: Dr. Burak Demirci, SBU Istanbul Bagcilar Training and Research Hospital, Emergency Medicine Clinic, Istanbul, Turkey. E-mail: drburakdemirci@hotmail.com
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INTRODUCTION

In children, trauma can result in long-term damage and death. Additionally, roughly 25% of children under the age of 18 sustain serious injuries[1]. Motor vehicle collisions are the leading cause of injury. Falls and burns are two more prevalent causes of trauma. Falls occur at a rate of 22% in childhood. Boys are more likely to be exposed to trauma than girls. Schoolchildren are frequently involved in bicycle and pedestrian traffic incidents[2]. While blunt trauma accounts for 90% of pediatric injuries, the prevalence of penetrating injuries is increasing[3,4].

In children, genitourinary system (GUS) traumas account for between 3% and 10% of all injuries. The majority of genitourinary tract wounds are mild, although 10% are penetrating[5,6]. Genital traumas account for between 0.4 and 8% of all childhood injuries[7]. Pediatric genital trauma is fairly common in the emergency department. The majority of these injuries are mild and do not require surgery[8]. Genital injuries are most frequently caused by falls from great heights, automobile accidents, cycling, riding on playground equipment, and sports injuries[9,10]. Genital injury is more likely to occur during the prepubertal period, particularly in girls, due to tissue fragility. Urethral damage is common in boys as a result of penile trauma. Because the female urethra is shorter and more mobile, it is less traumatized than the male urethra[11,12].

In trauma patients, pain management and scoring are critical. Patients frequently seek treatment for pain at the emergency department. Pain is more prevalent and severe in trauma patients[13]. Uncontrolled pain has significant physiological repercussions, including unstable hemodynamic status and immune system dysfunction; it also has a variety of psychosocial ramifications, including anxiety, post-traumatic stress disorder, and disorientation[14]. Numerous studies have demonstrated that pain is undertreated in emergency rooms[15]. Only 60% of patients with discomfort obtained analgesics after lengthy delays, and 74% were released with moderate to severe pain[16]. While the use of subjective instruments for pain evaluation is necessary, it may cause confusion for healthcare practitioners in some clinical situations[17]. As a result, using a complementary technique to objectively quantify the degree of pain may be beneficial. While pain is a subjective symptom, it does have objectively quantifiable repercussions and indicators. Both behavioral and physiological signs of pain are included in these tools[18,19]. Pain rating scales are comparable, and validated pain scales can be used to assess a patient's subjective pain[18]. Patients are asked to rate their pain on a scale of 0-10, where 0 indicates no pain and 10 indicates the most severe agony imaginable[13]. While these techniques appear to be simple to use, assessing pain is frequently complicated. Despite the pain scale's extensive use and seeming simplicity in emergency rooms, 11% of people and 25% of the elderly did not understand the notion of use[20].

In pediatric trauma patients, non-opioid analgesics are routinely employed. It is frequently used alone or in conjunction with opioids to treat mild to moderate pain[21-23]. This category includes paracetamol, salicylates, and nonsteroidal anti-inflammatory medications. Paracetamol is an efficient analgesic that is safe to use in children of all ages. In children, ibuprofen is the most often prescribed nonsteroidal anti-inflammatory medication. Increased doses of this class of analgesics are ineffective at controlling pain[23-24]. It has a greater number of adverse effects[21].

The purpose of this study was to demonstrate the possibility of managing pain intensity appropriately when analgesia is required, using verbal and numeric pain ratings in patients with genital injuries. We structured our study around hypothesis; "H0: pain scoring is not an effective system that can benefit children clinically, radiographically, or consultatively. H1: pain scoring is an effective technique that can have a beneficial effect on clinical, radiological, and consultation outcomes in children." To this end, we demonstrated in our study that pain rating enables a more accurate evaluation of the clinic, more accurate radiological imaging choices, and more organized consultation planning in children.

MATERIALS AND METHODS

Study design and sample

This retrospective study included 237 middle school and high school age, 10-18 years old patients who applied to the emergency department due to genital trauma between January 2019 and December 2020. The study included patients with verbal and numerical pain scores evaluated in the hospital automation system or in the patient file among these trauma cases aged 10-18. Patients whose hospital data records were missing were excluded from the study.

Additionally, patients who did not present within 24 hours of trauma, whose diagnosis could not be established, and who presented with minor home accidents or cuts were excluded from the study. Additionally, patients under the age of ten and those over the age of eighteen were excluded from the study. The study enrolled 5521 pediatric trauma patients. 5100 patients were excluded from the study because they lacked genitourinary trauma and clinical, imaging, and consultation data. G*Power power analysis; acceptable patient (+/-) 237 patients were included in the study based on the population size (5521), with the analysis being conducted at a 95% confidence level. 237 patients were randomly selected from 321 patients, and 84 patients were excluded from the study due to their inability to participate in the power analysis.

Our hospital is a tertiary hospital that meets all pediatric traumas. The clinical data, imaging and consultation records of the patients can be evaluated from the hospital data system. The records are reliable in the electronic data system, and patients with missing records are currently excluded from the study.

The study was approved by the Local Ethics Committee. Human studies were conducted by the Declaration of Helsinki. Ethics Committee approval was received from Cemil Taşçıoğlu City Hospital with the date and decision number of 23.02.2021/86. Consent has been obtained from all authors and there is no conflict of interest.

Procedure

Demographic features, trauma patterns, if any radiological imaging results, genital organ injuries, tetanus status, consultations, verbal and numerical pain scale results were evaluated. These data are the data processed by emergency medicine specialists and assistants working in the relevant field, who are unaware of the study, as a result of examination and imaging into the system.

In the study, patients were divided into four groups in terms of trauma etiology: falls, traffic accidents, penetrating, and iatrogenic injuries. Falls were evaluated within the same group as low and high. Low-level falls were falls from a swing, bicycle, ladder, wall less than one meter high, and from places such as bunk beds. Falls from height were all falls higher than one meter. Traffic accidents also consisted of in-vehicle and out-of-vehicle causes.

Four groups were determined for radiological imaging, including no examination, direct radiography, computed tomography, and ultrasonography. The consultations were divided into five groups as no need, pediatric surgery, urology, orthopedics, and obstetrics. In addition, two groups were determined according to whether there was urethral injury and whether they needed analgesics and tetanus. Demographic, clinical, and laboratory data of the patients are available in the hospital's medical records from the date of admission to the emergency department.

Genital organ injury was divided into male and female. Male genital injuries; Nine groups were formed: absence of genital trauma, skin defect and rupture of the scrotum, laceration, evisceration, and rupture of the testicles, and penile injuries as skin defects, fractures, and ruptures. Female genital organ injuries were divided into six groups as the absence of genital trauma, skin defect and rupture in the perineum, skin defect and rupture in the vagina, and rupture of the hymen.

Verbal Pain Scale

Verbal Pain Scale was used for pain classification. The scale of verbal categories is a straightforward descriptive scale. This scale is based on the patient selecting the most apt word to describe their current state of pain. The intensity of pain varies from mild to severe. The patient is asked to select the most appropriate category from these options. The advantages of the verbal category scale are that it is simple to use and classify. The disadvantages include the scale's limitations in terms of usability, such as the requirement to remember the word describing the severity of pain or a reliance on the number of words in the list to define the severity of pain. In addition to these limitations, it was determined that the verbal category scale had a lower sensitivity for describing moderate pain than the visual comparison scale[25]. Our category was slightly modified to form three groups as mild, moderate, and severe. Since the verbal category scale is a simple descriptive data. The numerical pain scale was also used. This method, which is used to determine the severity of pain, attempts to quantify the patient's discomfort in numerical terms. It begins with the absence of pain ("0") and progresses to the point of intolerable pain ("10"). It is stated that numerical scales are more widely used in impact assessment than they are useful, as they facilitate the definition of pain severity, as well as scoring and recording. Additionally, there is a

widespread belief that numerical scales are underutilized because patients believe their pain reports are excessive[26]. Since both verbal and numeric pain scales were modified at certain rates, it was aimed to make children more adaptable, so both scales were evaluated. Pain scale samples are given in Fig 1. These scalings were made by physicians in the trauma department.

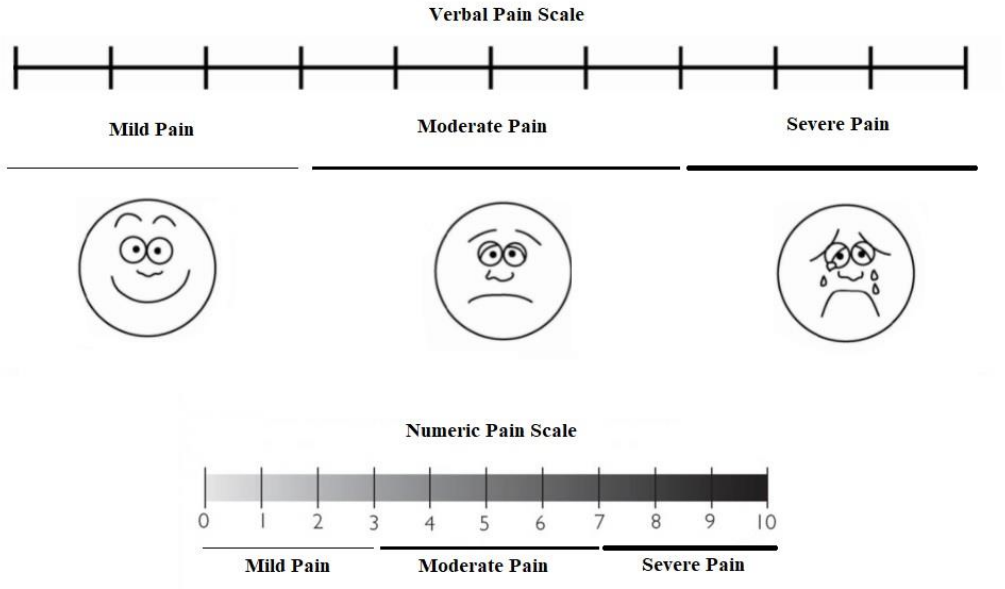

Figure 1. Verbal and numeric pain scale chart

Statistical analysis

The data from this investigation were analyzed using the SPSS 20 package program (SPSS Inc., Chicago, IL, USA). The Kolmogorov-Smirnov test was performed to determine the variables' normal distributions. For continuous variables, descriptive statistics were reported as mean standard deviation or median (minimum-maximum), whereas for nominal variables, the number of cases and percentage (percent) were used. When comparing groups, the Kruskal-Wallis-H test was utilized because the variables did not follow a normal distribution. When evaluating the associations between nominal variable groupings, chi-square analysis was used. While the Kruskal-Wallis-H test was used in the analysis of trauma mechanisms with age and pain scale variables, the Chi-Square test was used in the analysis with other variables. The same analysis method was used for the severity of pain scoring. Spearman's rho correlation analysis was used for the linear relationship between the numeric pain scale and other variables. Boxplot graphical analysis was used to evaluate the relationship of pain scale scoring with trauma mechanisms and pain intensity. When interpreting the results, values below the 0.05 significance level were considered statistically significant.

RESULTS

The mean age of 237 patients with genital trauma was 13.80±2.37 years, distribution was 10-18 years, 90 (38%) were female and 147 (62%) were male. Of these, 136 (57.4%) were falls, 63 (26.6%) traffic accidents, 35 (14.8%) penetrating and 3 (1.3%) iatrogenic injuries. The numerical pain score was 6.63±1.43 points in the fall group, 6.09±1.66 points in traffic accidents, 4.80±1.53 points in penetrating injuries, and 3.67±1.15 points in the iatrogenic group (p=0.001). In male genital injuries, scrotal skin defect

was most frequently detected in 24 (27.3%) cases in falls, whereas it was not found in iatrogenic traumas. Scrotal rupture was seen in traffic accidents in 9 (23.7%) cases, but it was not detected in penetrating and iatrogenic injuries. Testicular evisceration was detected only in 5 (5.7%) of the fall group. Testicular laceration was most common in falls in 9 (10.2%) cases, while testicular rupture was seen only in 2 (10.5%) patients in penetrating trauma. Penile skin defect was detected in 7 (18.4%) cases in traffic accidents, but penile fracture and rupture were detected in one case each (p=0.001). Perineum skin defect was most common in female genital trauma in 23 (25.6%) patients. Perineum skin defect was detected in 15 (31.25%) of the fall group and 7 (28%) of traffic accidents. In addition, perineal rupture was detected in 14 (15.5), vaginal skin defect 11 (12.2), vaginal rupture in 7 (7.8), and vaginal and/or hymen ruptured 5 (5.6) patients.

No female genital injury types were found in any of the iatrogenic traumas (p=0.768). The tetanus vaccine was administered to 161(67.9) cases. While 67 (49.3) of these were applied to fall cases, none of the patients in the iatrogenic group were vaccinated (p=0.001). While analgesic was administered to 93 (39.2%) of all patients, the most common analgesia was in the fall group with 78 (57.4%) patients (p=0.001).

No radiological imaging was performed in 48 (20.3) of the patients. X-ray was requested in 70 (29.5%) of the patients, computed tomography in 22 (9.3%) patients, ultrasonography in 96 (40.5%), and magnetic resonance imaging in one patient. X-ray and ultrasonography were more common in traffic accidents in the fall group (p=0.001).

Of all patients, 87 (36.7%) pediatric surgery, 66 (27.8) urology, 20 (8.4) orthopedics, and 11 (4.6) obstetrics consultation were requested. While the most frequent requests were for falls among traumas, 53 (22.4) patients were not requested at all (p=0.005). Pain severity was mild in 43 (18.1%) patients, moderate in 140 (59.1%), and severe in 54 (22.8%) patients. Moderate pain was most common in falls and traffic accidents, and mild pain in penetrating injuries (p=0.001). Urethral injuries were detected in 11 (4.6%) cases. Of these, 5 (2.1%) were seen in traffic accidents, 4 (1.7) in penetrating, 2 (0.8%) in iatrogenic injuries. However, no urethral injury cases were detected in falls (p=0.001, Table 1). Pain scale distributions of trauma cases are given in Fig2.

No statistically significant correlation was found between age and pain severity (p=0.951). There was no significant relationship between gender and pain intensity, but moderate pain levels were present in both genders (p=0.534). The numerical pain scale was 3.77±0.78 in the mild group, 6.08±0.83 in the moderate group, and 8.37±0.49 in the severe group (p=0.001). In male patients, the level of pain was moderate in 15 (17.8%) of scrotal skin defects and severe in 12 (32.4%) patients. Scrotal rupture was severe in 6 (16.1%) patients, testicular evisceration was moderate in 3 (3.6%), testicular laceration was moderate in 8 (9.5%), testicular rupture was moderate in one patient, and severe in one patient. All female genital traumas were in the moderate pain group. 94 (67.1%) of those who received the tetanus vaccine and 58 (41.4%) of those who received analgesia were in the moderate pain group. All of the patients who underwent radiological imaging were in the moderate pain group. Among these, X-ray and ultrasonography groups were found to be at moderate pain levels with 54 (38.6%) cases. Only 4 (7.4%) of the severe pain group did not have radiological imaging (p=0.001). Of the patients whose consultation was not requested, 19 (44.2%) were in the mild pain group, 26 (18.6%) were in the moderate pain group, and 8 (14.8%) were in the severe pain group. While moderate severity was the most common in all consultation groups, the severe pain group was the majority in orthopedics consultation (p=0.001). There was no significant relationship between urethral injuries and pain severity, and moderate pain was more common (p=0.929, Table 2). Pain scale distributions of pain intensities are given in Fig3.

The numerical pain scale did not correlate with age (p=0.499) and gender (p=0.376). There was moderate negative correlation with trauma types (p=0.001) and a weak negative correlation with tetanus application (p=0.009). There was a weak positive correlation with the application of analgesia (p=0.019) and consultation (p=0.003), a moderate positive correlation with radiological imaging (p=0.001), and a strong positive correlation with pain intensity (p=0.001, Table 3).

Table 1. Relationship of the mechanism of trauma to the variables

Genital Trauma		All Patients n: 237(%)	Fall n:136(%)	Trafic Accident n:63(%)	Penetrating Injury n:35(%)	Iatrogenic n:3(%)	P value
		Mean ±SD	Mean ±SD	Mean ±SD	Mean ±SD	Mean ±SD	
Age (year)		13.80±2.37	13.94±2.43	13.52±2.35	13.94±2.19	11.67±2.08	0.280
Scale		6.18±1.65	6.63±1.43	6.09±1.66	4.80±1.53	3.67±1.15	0.001
Gender	Female	90(38)	48(35.3)	25(39.7)	16(45.7)	1(33.3)	0.703
	Male	147(62)	88(64.7)	38(60.3)	19(54.3)	2(66.7)	
Male Genital Injury	None	62(42.2)	41(46.6)	13(34.2)	8(42.2)	0	0.001
	SSD	33(22.4)	24(27.3)	5(13.2)	4(21.1)	0	
	SR	12(8.1)	3(3.5)	9(23.7)	0	0	
	TE	5(3.4)	5(5.7)	0	0	0	
	TL	16(10.9)	9(10.2)	4(10.5)	3(15.7)	0	
	TR	2(1.4)	0	0	2(10.5)	0	
	PSD	15(10.2)	4(4.5)	7(18.4)	2(10.5)	2(100)	
	PF	1(0.7)	1(1.1)	0	0	0	
	PR	1(0.7)	1(1.1)	0	0	0	
Female Genital Injury	None	30(33.3)	18(37.5)	5(20.0)	6(37.5)	1(100)	0.768
	PESD	23(25.6)	15(31.25)	7(28.0)	1(6.2)	0	
	PER	14(15.5)	6(12.5)	5(20.0)	3(18.8)	0	
	VSD	11(12.2)	3(6.25)	5(20.0)	3(18.8)	0	
	VR	7(7.8)	3(6.25)	2(8.0)	2(12.5)	0	
	VHR	5(5.6)	3(6.25)	1(4.0)	1(6.2)	0	
Tetanus	No	76(32.1)	69(50.7)	1(1.6)	3(8.6)	3(100)	0.001
	Yes	161(67.9)	67(49.3)	62(98.4)	32(91.4)	0	
Analgesic	No	144(60.8)	58(42.6)	56(88.9)	27(77.1)	3(100)	0.001
	Yes	93(39.2)	78(57.4)	7(11.1)	8(22.9)	0	
Imaging	No	48(20.3)	23(16.9)	11(17.5)	13(37.1)	1(33.3)	0.001
	XR	70(29.5)	58(42.6)	12(19)	0	0	
	CT	22(9.3)	3(2.2)	10(15.9)	9(25.7)	0	
	USG	96(40.5)	52(38.2)	29(46)	13(37.1)	2(66.7)	
	MRI	1(0.4)	0	1(0.4)	0	0	
Consultation	No	53(22.4)	16(11.8)	23(36.5)	14(40)	0	0.005
	PS	87(36.7)	55(40.4)	21(33.3)	10(28.6)	1(33.3)	
	UR	66(27.8)	46(33.8)	11(17.5)	7(20)	2(66.7)	
	ORT	20(8.4)	14(10.3)	4(6.3)	2(5.7)	0	
	OBS	11(4.6)	5(3.7)	4(6.3)	2(5.7)	0	
Pain Severity	Mild	43(18.1)	8(5.9)	14(22.2)	19(54.3)	2(66.7)	0.001
	Moderate	140(59.1)	90(66.2)	36(57.1)	13(37.1)	1(33.3)	
	Severe	54(22.8)	38(27.9)	13(20.6)	3(8.6)	0	
Urethral Injury	No	226(95.4)	136(57.4)	58(24.5)	31(13.1)	1(0.4)	0.001
	Yes	11(4.6)	0	5(2.1)	4(1.7)	2(0.8)	

SSD: Scrotal Skin Defect, SR: Scrotal Rupture, TE: Testicular evisceration, TL: Testicular Laceration TR: Testicular Rupture PSD: Penis Skin Defect PF: Penis Fracture PR: Penis Rupture PESD: Perineum Skin Defect PER: Perineal Rupture VSD: Vaginal Skin Defect VR: Vaginal Rupture VHR: Vaginal or Hymen Rupture XR: X-Ray CT: Computed Tomography USG: Ultrasonography MRI: Magnetic Resosans Imaging PS: Pediatric Surgery: UR: Urology ORT: Orthopedy OBS: Gynecology and Obstetrics.

Table 2. Relationship of Trauma Severity with Variables

Genital Trauma Pain Scale		Mild n:43(%)	Moderate n:140(%)	Severe n:54(%)	P value
		Mean ±SD	Mean ±SD	Mean ±SD	
Age (year)		13.88±2.43	13.80±2.35	13.74±2.43	0.951
Scala		3.77±0.78	6.08±0.83	8.37±0.49	0.001
Gender	Female	17(39.5)	56(40)	17(31.5)	0.534
	Male	26(60.5)	84(60)	37(68.5)	
Male Genital Injury	None	8(30.8)	43(51.2)	11(29.7)	0.485
	SSD	6(23.1)	15(17.8)	12(32.4)	
	SR	2(7.6)	4(4.8)	6(16.1)	
	TE	1(3.8)	3(3.6)	1(2.7)	
	TL	5(19.3)	8(9.5)	3(8.2)	
	TR	0(0)	1(1.2)	1(2.7)	
	PSD	4(15.4)	8(9.5)	3(8.2)	
	PF	0	1(1.2)	0	
	PR	0	1(1.2)	0	
Female Genital Injury	None	6(35.3)	16(28.6)	8(47.1)	0.843
	PESD	3(17.6)	15(26.8)	5(29.4)	
	PER	3(17.6)	9(16.1)	2(11.7)	
	VSD	3(17.6)	8(14.3)	0	
	VR	1(5.9)	5(8.9)	1(5.9)	
	VHR	1(5.9)	3(5.3)	1(5.9)	
Tetanus	No	7(16.3)	46(32.9)	23(42.6)	0.021
	Yes	36(83.7)	94(67.1)	31(57.4)	
Analgesic	No	33(76.7)	82(58.6)	29(53.7)	0.049
	Yes	10(23.3)	58(41.4)	25(46.3)	
Imaging	No	25(58.1)	19(13.6)	4(7.4)	0.001
	XR	4(9.3)	54(38.6)	12(22.2)	
	CT	7(16.3)	12(8.6)	3(5.6)	
	USG	7(16.3)	54(38.6)	35(64.8)	
	MRI	0	1(0.7)	0	
Consultation	No	19(44.2)	26(18.6)	8(14.8)	0.001
	PS	11(25.6)	57(40.7)	19(35.2)	
	UR	11(25.6)	42(30)	13(24.1)	
	ORT	1(2.3)	7(5)	12(22.2)	
	OBS	1(2.3)	8(5.7)	2(3.7)	
Urethral Injury	No	41(95.3)	133(95)	52(96.3)	0.929
	Yes	2(4.7)	7(5)	2(3.7)	

SSD: Scrotal Skin Defect, SR: Scrotal Rupture, TE: Testicular evisceration, TL: Testicular Laceration TR: Testicular Rupture PSD: Penis Skin Defect PF: Penis Fracture PR: Penis Rupture PESD: Perineum Skin Defect PER: Perineal Rupture VSD: Vaginal Skin Defect VR: Vaginal Rupture VHR: Vaginal or Hymen Rupture XR: X-Ray CT: Computed Tomography USG: Ultrasonography MRI: Magnetic Resosans Imaging PS: Pediatric Surgery: UR: Urology ORT: Orthopedy OBS: Gynecology and Obstetrics

Table 3. Correlation of variables with pain scale and age

	Numerical Pain Scale	
	r	p
Age	0.044	0.499
Gender	0.058	0.376
Trauma	-0.376	0.001
Tetanus	-0.169	0.009
Analgesic	0.152	0.019
Imaging	0.406	0.001
Consultation	0.192	0.003
Pain Severity	0.883	0.001

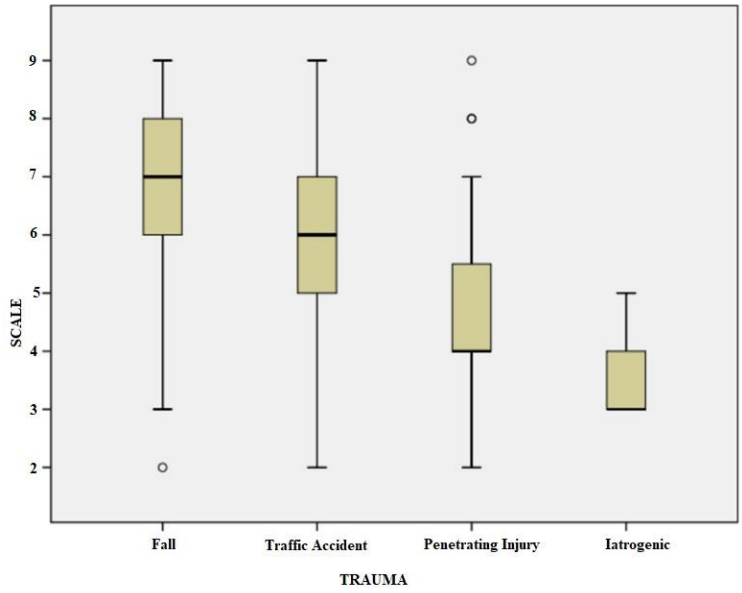

Figure 2. Pain scale distribution of trauma cases

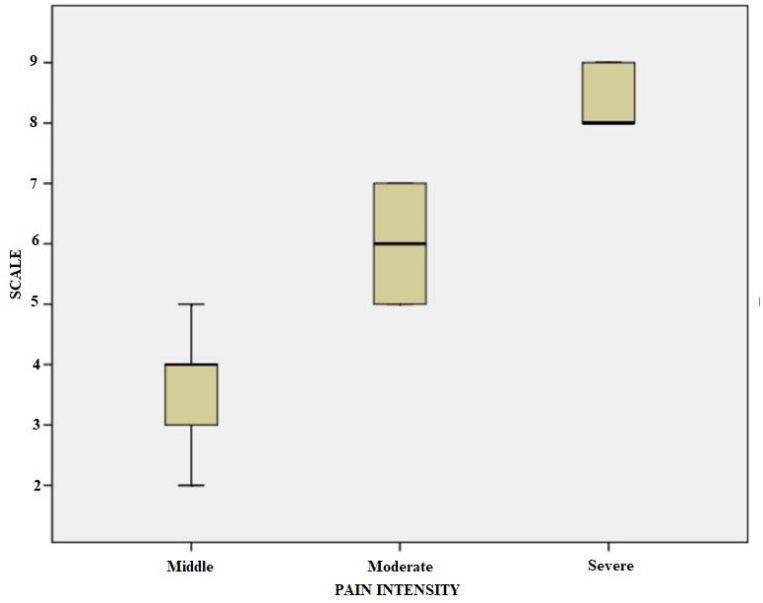

Figure 3. Pain scale distribution of pain intensity.

DISCUSSION

Genital traumas can occur through a variety of different mechanisms, and as a result, the location and severity of the injury may vary. Additionally, trauma can have an effect on a child's psychosexual development and future fertility[27,28]. Genital trauma has been associated with abuse in the majority of studies, and non-abuse pediatric genital trauma cases are uncommon in the literature. The exact rate of non-sexual pediatric genital injury is unknown, as the majority of the pertinent literature has concentrated on the relationship between sexual abuse and genital trauma. The majority of studies examining non-sexual pediatric genital trauma are case reports or small series involving only one specific gender[10,29-31].

Pediatric genital trauma has been documented to occur in roughly 0.4-8 percent of reported juvenile trauma cases[8]. Casey et al[32] investigated the trauma patterns of 19885 patients younger than 18 years of age who applied to the emergency department for 19 years due to genital trauma. The mean age of the patients was 7.1 years, 43.3% stated that they had a laceration and 42.2% had signs of contusion/abrasion. They saw that 65.9% of the trauma occurred at home, 13.8% in the gym, 11.6% in school, and 4.8% in the streets. Spitzer et al.[30] examined 105 female genital injuries in their study and reported that the mean age was 5.6 years and 81.9% of them were straddle style and 4.76% were penetrating injuries. Widni et al.[31] evaluated 74 male genital trauma patients, most commonly caused by falls, in their study. There are very few publications that include genital trauma in both genders. Isbir et al[28] evaluated 26 pediatric patients with genital trauma, 15 (57.7%) female and 11 (42.3%) male, with a mean age of 7.8±4.3 years. Straddle-type trauma was the most common among them. They also evaluated the findings as a result of trauma and detected laceration, hematoma, rupture, and skin avulsion in order of frequency. Our study included 237 pediatric patients in the middle school-high school age with a mean age of 13.80±2.37 years, and 90 (38%) were girls and 147 (62%) were boys. Falling was the most common reason for admission with 136 (57.4%) patients. Straddle injuries were observed in similar studies. In terms of trauma type, our rates were comparable to those reported in other publications. Boys frequently had scrotal and penile skin abnormalities, as well as scrotal lacerations. Additionally, we had patients with more specialized injuries such as penile and scrotal ruptures, as well as penile fractures. Girls had a high rate of perineal, vaginal, and hymen ruptures. The frequent occurrence of ruptures in penetrating injuries can be attributed to the severity and invasive character of the damage. We attempted to demonstrate, by a more precise description of the diversity of trauma findings, that the type of trauma was significantly associated with the findings, particularly in boys. We believe that our study, which is more extensive than its equivalents, can provide more accurate data on the etiology and clinical findings of genital trauma.

Pain management is still insufficient in emergency departments, but interest and studies on this subject are increasing[33,34]. It has been accepted that adequate sensitivity in analgesia studies for acute pain can only be achieved if patients experience at least moderate pain. According to a study of adult patients combining data from 11 controlled double-blind studies investigating postoperative analgesia, moderate pain correlated with a 30 mm score on the visual analog scale (VAS)[35]. The numerical pain scale was found to be highly correlated with the severity of pain in our study. Additionally, it was determined that as pain severity increased, the rates of analgesia, imaging, and consultation increased proportionately. At the moment, it is unknown what VAS scores correspond to mild, moderate, and severe pain in children. Self-report is the gold standard for pain measurement. In our study, participants with moderate or severe pain scale scores received acetaminophen at a dose of ml/kg intravenously because it was a safe analgesic option. Pain management in children, pain perception, and pain response are all complex issues. Children may not always be able to express themselves completely truthfully. Pain scale and analgesia evaluations were primarily conducted on adults or for general diagnostic purposes.

Self-reporting by the patient is the most effective method of pain measurement. Children over the age of three can reliably self-assess the intensity of their pain using a variety of assessment techniques. There are pain scales that are used to assess the severity of pain upon application and over time. Measuring pain intensity requires selecting a level on the pain scale that corresponds to the degree of pain experienced by the child[36]. Bulloch and Tennenbein included the Color Analog Scale (CAS) and the 7-point Faces Pain Scale (FPS) in their study of children aged 5-16 years with pain who presented to the emergency

department, and demonstrated that these scales are extremely useful in children with acute pain who present to the emergency department. In the evaluation of 30 patients, they stated that the median score of children who described their pain as mild was 2.0, moderate 4.5, and 7.0 if severe[37]. In our study, the mean score was 3.77 for mild pain, 6.08 for moderate pain, and 8.37 for patients with severe pain. With these score values, in the moderate and severe groups, which are the groups that receive analgesic treatment; it was observed that the averages decreased to 4.78 and 6.21 levels, respectively. Bailey et al[38] evaluated VAS, standardized CAS, Wong-Baker Face Pain Rating Scale, and verbal numerical scales in their study evaluating 87 children with abdominal pain, 58 of whom were diagnosed with acute appendicitis, aged 8-18 years. Patients were asked to rate their pain according to each pain scale and then re-rate 30 minutes after administration of morphine or placebo. The results of the study showed that only VAS and CAS were acceptable in children with moderate to severe acute abdominal pain. According to McConahay et al.[39], pain management is a priority in pediatric patients, and as such, a more urgent triage organization is required to respond to pain in a timely and sensitive manner in children with a pain score of six or greater. There was a positive correlation between pain severity and pain scale score in our study. In both genders, there was no correlation between the type of genital injury and the severity of pain. We believe that pain perception is more closely related to the severity of the trauma than to the lesion formed. Patients with moderate verbal pain severity and a numerical pain scale greater than six points received analgesia. Additionally, while imaging was not required in patients with mild pain severity, this requirement increased proportionately with pain severity. When all data are analyzed together, it becomes clear that as the pain scale score increases, analgesia, imaging, and consultation are indicated. The pain scale has a correlation with the severity of the trauma, imaging, analgesia, and consultation.

Our study had some limitations. These include the study's single-center design, retrospective nature, the dubious authenticity of the pain scale data due to individual dependency, and gaps in hospital data records.

Until today, the reliability of pain scales used in the emergency department has not received the attention it deserves. We believe that evaluating verbal and numerical pain scales in pediatric genital trauma or non-traumatic patients may be beneficial for pain management, analgesic administration decisions, radiographic imaging requirements, and consultation requirements in the emergency department.

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