Investigation of a retrospective study of clavicle fractures in children.

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ABSTRACT

This paper aims to Investigation of a retrospective study of clavicle fractures in children. A retrospective study was conducted in different hospitals in Iraq. Investigation of a retrospective study of clavicle fractures in children, where 100 children were collected and distributed into 66 boys and 34 girls.

An X-ray of the clavicle is one of the most common diagnostic techniques based on the use of X-rays. It allows to obtain data on the state of bone tissue, determine its fractures, visualize neoplasms, as well as congenital defects and skeletal anomalies.

The statistical analysis program IBM SPSS SOFT 22 was relied upon for the purpose of analyzing the data and demographic information that were pulled from the hospital's electronic record, and the mean value SD to the patients' ages was 8.5 ± 1.8

And through the distribution of patient radiological follow-up follow-up fractures according to age, we note that the number of days increases with age, and this indicates a direct relationship with age

We conclude from this study that it is possible for children to develop clavicle fractures and turn into complications. Despite the lack of experimental and scientific studies on this subject, some complications were found.

Keywords: Clavicle, complications, X-ray, children.

Introduction

It is a common injury that ranks third in frequency after shoulder and forearm fractures. Usually, the cause is a fall into the arm or chest compressions. Often, the fracture occurs when a blow to the collar bone [1,2]. In children, subperiosteal fractures are observed in patients of older and middle age groups - complete fractures. A complete fracture is accompanied by severe pain, deformation, and swelling of the shoulder girdle. With subperiosteal fractures, there is no deformation of the shoulder girdle; the pain is minimal. Diagnosis is made on the basis of

examination data and X-ray results. Treatment is usually conservative; various fixing bandages are used and, if necessary, reposition is performed. The operation is indicated for the displacement of irreparable fragments and the risk of complications [3,4,5].

This injury is one of the most common traumatic injuries to the musculoskeletal system in childhood of all fractures of the bones of the upper extremities, a violation of the integrity of the clavicle accounts for about 13% of cases. About 30% of all clavicle fractures are detected in the 2-to-4-year age group [6,7,8].

The fracture can either be independent (isolated) or combined with other injuries and be part of multiple traumata. [9,10,11]

Among the mechanisms of fracture of the clavicle, it is customary to distinguish direct and indirect. Most often, clavicle damage in children is caused by an indirect mechanism. When falling on an outstretched arm, elbow, or shoulder joint, the direct mechanism is performed less frequently and occurs with a strong blow in the clavicle area. [12,13]

Symptoms of an incomplete fracture of the clavicle in children are often mild; therefore, as a rule, it is diagnosed late, already during the formation of the callus - 10-14 days after bone damage. During this period, a pronounced thickening of the clavicle is observed both visually and tactilely [14].

With a complete fracture, the clinical picture is more pronounced. Under the influence of muscle contraction, bone fragments are displaced, which affects the functional ability of the limb [15].

Material and method

Patient sample

A retrospective study was conducted in different hospitals in Iraq, Investigation of a retrospective study of clavicle fractures in children, where 100 children were collected and distributed into 66 boys and 34 girls

Study design

The study was carried out retrospectively on children suffering from a clavicle fracture. The average age of the children ranged from 5 to 12 years. The children were distributed according to gender to 66 boys and 34 girls. Radiological images were reviewed for the purpose of knowing the clavicle fracture. Reliance on medical records in the hospital in order to classify the type of fracture in addition to the duration of clinical follow-up

Incomplete fractures (under the bone) may not be recognized or diagnosed late due to poor symptoms. Clavicle fractures, both incomplete and complete, grow together well and do not leave behind functional disorders.

To confirm the diagnosis, an x-ray of the clavicle is prescribed in a standard direct position. Diagnosis is usually not difficult. In cases that are difficult to differentiate, computed tomography or magnetic resonance imaging of the clavicle may be prescribed.

Study period

After cooperating with the relevant committees to obtain official approvals, and the study period was ten months

Aim of study

This study aims to Investigation of a retrospective study of clavicle fractures in children

Results

Table 1- Distribution of patients according to age

Age					
		f	%	vp	Cp
Valid	5.00	3	3.0	3.0	3.0
	6.00	8	7.9	8.0	11.0
	7.00	22	21.8	22.0	33.0

	8.00	21	20.8	21.0	54.0
	9.00	22	21.8	22.0	76.0
	10.00	5	5.0	5.0	81.0
	11.00	10	9.9	10.0	91.0
	12.00	9	8.9	9.0	100.0
	Total	100	99.0	100.0	
Missing	System	1	1.0		
Total		101	100.0		

Fig 1- Distribution of patients according to gender

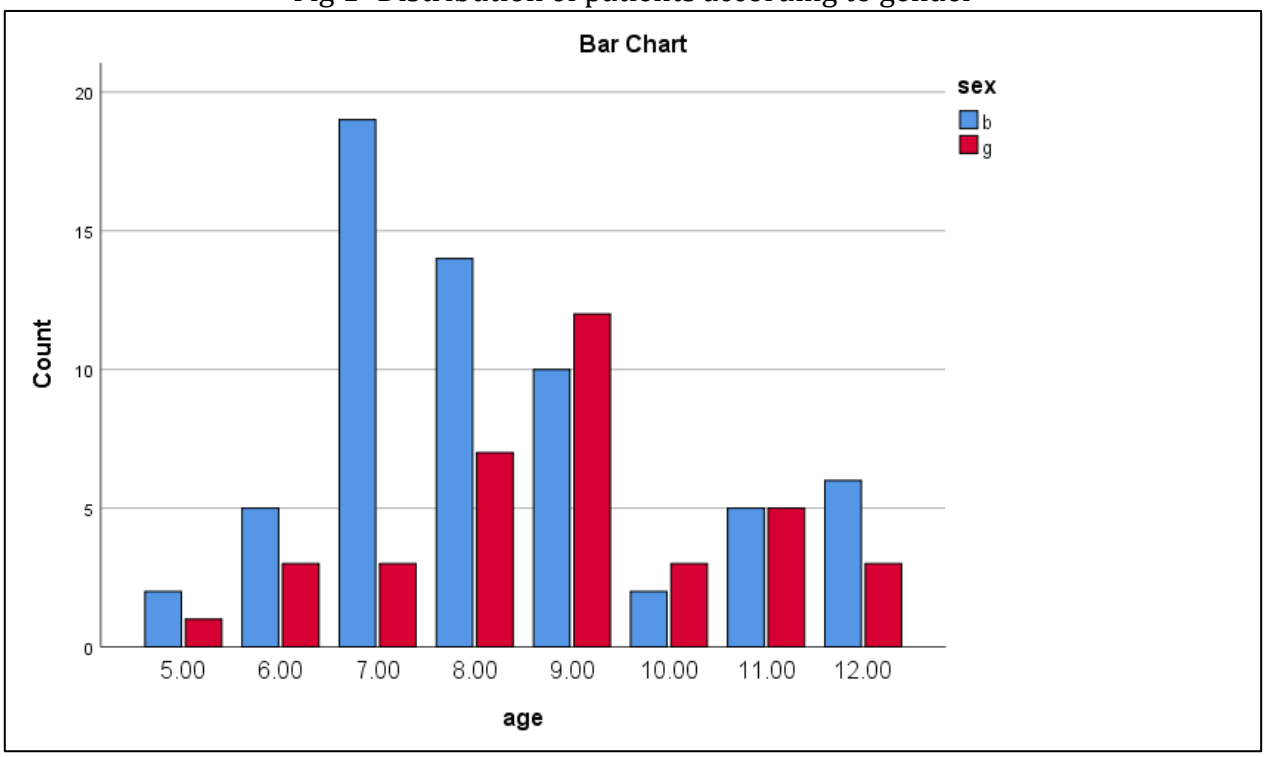

Fig 2- Distribution of patient radiological follow-up follow-up fractures according to age

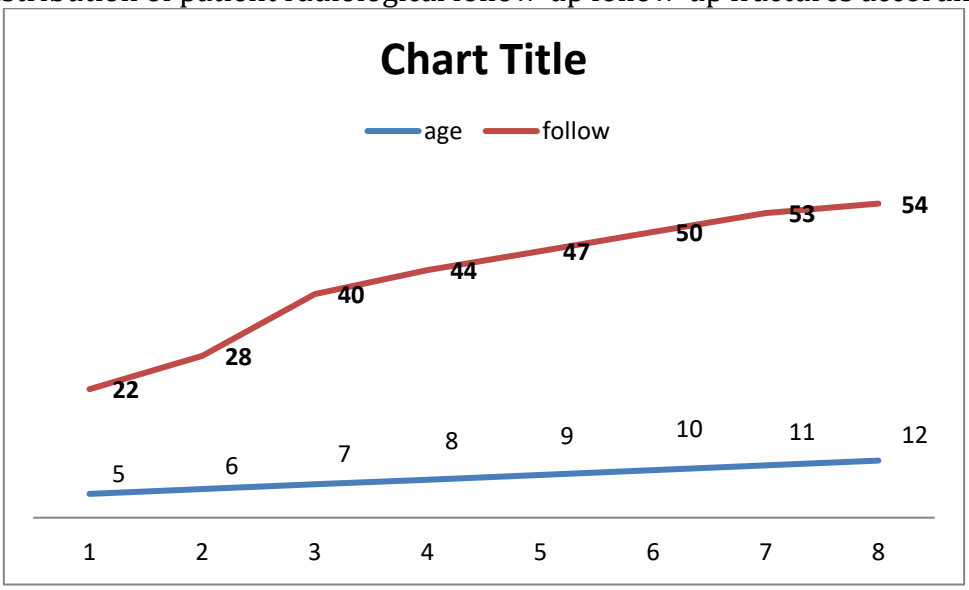

Fig 3- classification of clavicle fractures according to gender

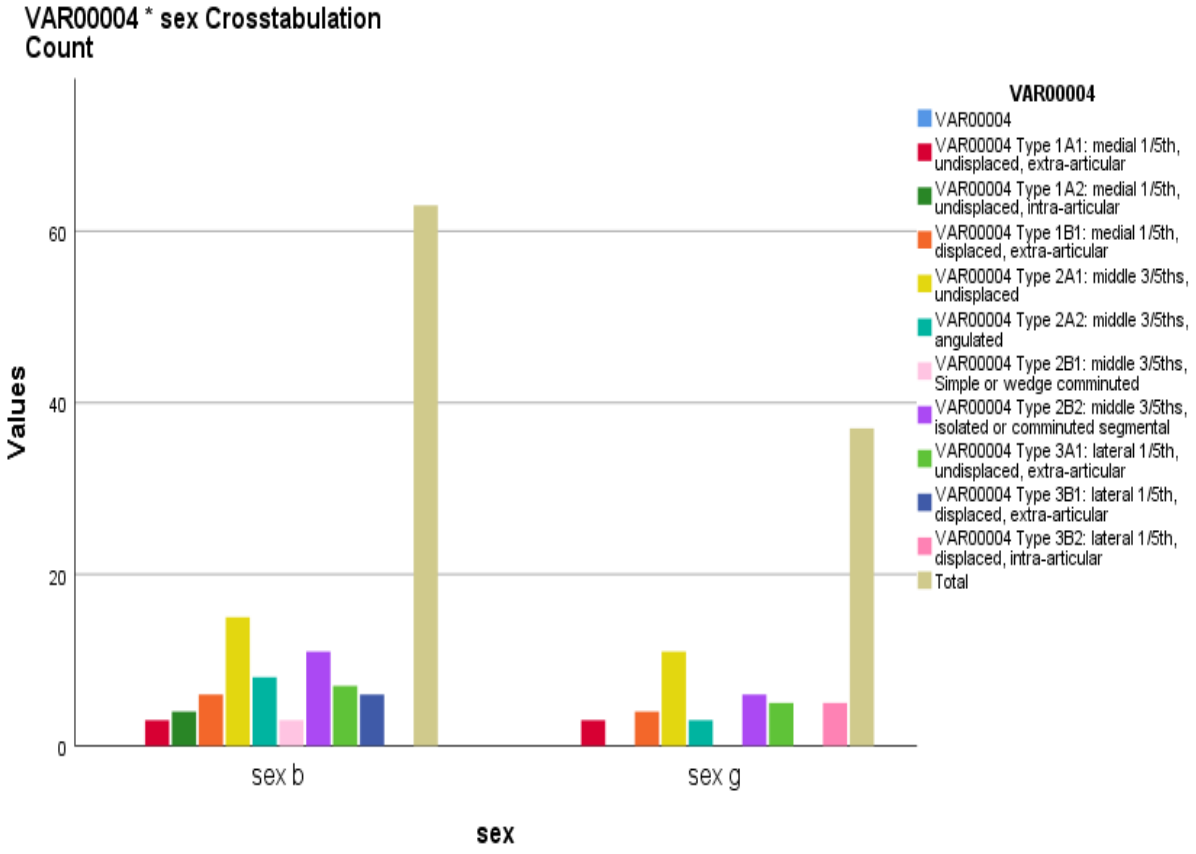

Table 2-

Classification * sex Crosstabulation				
Count				
		sex		Total
		b	g	
VAR00004 Total	Type 1A1: medial 1/5th, undisplaced, extra-articular	3	3	6
	Type 1A2: medial 1/5th, undisplaced, intra-articular	4	0	4
	Type 1B1: medial 1/5th, displaced, extra-articular	6	4	10
	Type 2A1: middle 3/5ths, undisplaced	15	11	26
	Type 2A2: middle 3/5ths, angulated	8	3	11
	Type 2B1: middle 3/5ths, Simple or wedge comminuted	3	0	3
	Type 2B2: middle 3/5ths, isolated or comminuted segmental	11	6	17
	Type 3A1: lateral 1/5th, undisplaced, extra-articular	7	5	12

	Type 3B1: lateral 1/5th, displaced, extra-articular	6	0	6
	Type 3B2: lateral 1/5th, displaced, intra-articular	0	5	5
	T	63	37	100

Discussion

The study was conducted retrospectively from Baghdad Hospital to children with a clavicle fracture, and the average ages ranged between 5 to 12 years, and the most frequent age rates were between 7 to 9 years, as shown in Table 1.

The statistical analysis program IBM SPSS SOFT 22 was relied upon for the purpose of analyzing the data and demographic information that were pulled from the hospital's electronic record, and the mean value sd to the patients' ages was 8.5 ± 1.8, as shown in the table below

Table 3- mean value of the age of patients

Statistics		
age		
N	Valid	100
	Missing	1
Mean		8.5100
Std. Deviation		1.82848
Range		7.00
Minimum		5.00
Maximum		12.00

Patients were distributed according to gender, and patient of boys was greater than girls, with 63 boys children and 37 girls patients.

The cause of severe complications in * fractures of the clavicle is due to some difficulties in diagnosis and selection of the optimal method of treatment. Despite the progress in the diagnosis and treatment of clavicle fractures, the frequency of complications in these injuries remains large. This is due to not always pathological repositioning and fixing of fractures, which leads to unfavorable results of treatment - deformities, pseudoarthrosis, Shortening, contractures of the shoulder joint. As a result of severe complications, many patients undergo frequent reconstructive operations, and their treatment is delayed for years

Severe pain occurs immediately if there is a complete fracture of the clavicle in a child in older children; the most common causes of injury are a sudden sprain of the shoulder, a blow to the forearm

Produces a physiological reaction of the body to a fracture of the clavicle (hyperemia (redness of the damaged area and an increase in temperature in the area of damage). This is a typical inflammatory reaction to trauma to the base of bones and soft tissues. Then there is an increase in pain syndrome and exacerbation of dysfunction.

Conclusion

Clavicle fractures are the most common skeletal injury, currently accounting for 5 to 15% of all injuries. The variety of forms of fractures, the complexity of their fixation, which provides the possibility of simultaneous development in adjacent joints, and the high percentage of unsatisfactory treatment results

(up to 15%) are important factors that prompted us to study the nature of these fractures in more depth and develop methods that improve treatment results.

Recommendation

1. The treatment methods that the doctor chooses depend on many criteria. For example, the degree of the clavicle fracture is important, whether the clavicle fracture occurred in a child or an adult, whether there was a displacement of the bone fragment
2. If there is a high risk of complications or worsening the clinical condition, treatment of the clavicle should be carried out in the trauma department. According to statistics, in a large number of cases, patients do not need surgical intervention; only ordinary therapeutic treatment is enough.

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