ORIGINAL ARTICLE

To Evaluate the Incidence and Out Come in patients with Chronic Regional Pain Syndrome

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ABSTRACT

Background: Chronic regional pain syndrome is very problematic and difficult to solve problems. There is still no clear cut diagnosis and treatment options. In most cases a team of doctors is required to treat the patients.
Aim: To solve the problem of chronic regional pain syndrome
Methods: This prospective study conducted in department. There were 25(50%) male and 25(50%) female. All patients ranged from 20 to 70 with mean age of 46.29 years. Patients were regularly followed up 1 week, 6 weeks, 12 weeks & 16 week. Patients were screened for CRPS using Budapest screening criteria.
Results: A total of 50 patients with wrist injuries were evaluated. From these 4(8%) patients had one symptom of CRPS, 9(18%) patients met the criteria of diagnosing chronic regional pain syndrome. According to our observation, incidence is higher in female 7(28%) as compare to male. More common in elderly patients between 61-77 years of age is 5(10%). More common with liagmentus and bony injuries (40%).More common in patients with popcast 33(33%). More common in patients admitted throughout door 7(28%).
Conclusion: This problem can be minimized by proper patients counselling, early surgery and early rehabilitation. In our set up pop cast in still consider to be a bad option for patients
Keywords: Chronic Regional Pain Syndromes, Incidence, wrist injuries, Elderly Patients

INTRODUCTION

Out of many complex pain syndrome, Complex regional pain syndrome (CRPS) is one of them. Reflex sympathetic dystrophy is also known as complex regional pain syndrome. It is a chronic neurological disorder. Limbs are mostly involved. There features are not specific. Disabling pain and swelling are common features. Other symptoms may be vasomotor instability and sudomotor abnormality. In most of the patient motor function are usually impaired[12] It is known as most complex problem on limbs with chronic pain. Most of time its etiology, is not clear. Its symptoms are varying according to the patients to patients. Clinical presentation is not specific. All these problems lead to difficult diagnosis with many diversions about its treatment.

Usually fractures are the most common initiating event but increase age, female sex was also considered tobe a risk factor as shown in previous studies. Diagnosis of CPRS is difficult & based on history & physical examination. Different studies have been done to test different imaging modalities to diagnose CRPS & classifying it into different types & its indicators [32,].Many diagnostic criteria have been made for diagnosis. but most well-known are IASP and Budapest criteria [30]. Most of the time it is blame to be link with the upper limb surgeries. Recovery time is prolonged and not specific in patients with CRPS. Patients are not interested to go to their previous work. Usually their quality of life is disturbed. Most of these

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Patients are not satisfied with their surgeries. Most of the time Litigation problems are faced by the operating surgeon[30].

Ambroise Pare's report from the 16th century reporting the persistent pain and contractures experienced by King Charles IX after a blood-letting procedure[4]. Hunter in 1766 discussed the pain syndrome due to the joint trauma[5]. CRPS was described in detail by The father of American neurology, Silas Weir Mitchell in 1854 CRPS .[6] Mitchell together with Morehouse and Keen noted the frequent presence of severe pain in relation to the injury in veterans of the American civil war[7] Mitchell coined the term causalgia from the Greek Kausis (fire) + Algos (pain)[2,5]. Causalgia describe Sever burning pain that starts in the distribution of an injured peripheral nerve and then spreads beyond it[8]. Sudek used the term Sudeck atrophy in1900[9]. A link was discussed between sympathetic nervous system and causalgia Rene Leriche in 1915[10]. In 1946 reflex sympathetic dystrophy was discussed by Evans[11]. Local anaesthetic or pharmacologic sympathetic ganglion blockade were started by many patients for treatment of severe pain[12]. However, recent studies have failed to demonstrate a 'reflex arc[13]. In 1986 sympathetically mediated pain was discussed by Roberts (SMP) and Campbell and colleagues reported about sympathetically independent pain (SIP)[14] unclear pathogenesis led to confusion, misdiagnosis, and mistreatment of patients with this pathology[15]. In 1993, IASP designated a Task Force to review the In 1993 IASP develop the nomenclature and diagnostic criteria. In1994, CRPS was classified further in to into types I and II. In type

II there is a peripheral nerve injury. An IASP consensus workshop held in Budapest in 2003 proposed modified clinical diagnostic criteria (Budapest criteria) to address the lack of specificity in the original IASP diagnostic criteria[16].

The aim and objective of study is to find incidence of CPRS following wrist injuries by using Budapest criteria

METHODS

The study was conducted from 1-1-17 to15-8-2018 .Patients were followed up till June 2017. Patients were recruited from outpatient departments and emergency departments, after approval from ethical review board. Patients aged between 20 to 70 years. All patients were suffered from wrist injuries. The diagnoses was done by plain radiography, bone scan and MRI.

Operative patients were allowed range of motion and exercises according to institutional protocol while conservatively managed patient was kept in cast for average 6 weeks with physiotherapy started later. Patients were followed in clinic at 1 week, 6 weeks,12 weeks & 6 months. Enquiry about CRPS symptoms on the basis of screening criteria of Budapest was done. Patients were asked about pain & symptoms from each of 4 categories as mentioned in.

Inclusion criteria

Patients between 20 to 70 years of age
Either gender
Medically fit patients

Exclusion criteria

Mentally ill patients
Patients with systemic disease likE DM, BP, etc
Patients with addiction, alcohol etc.
Patients polyneuropathy or neuromuscular disorder
Patients with locally infection
Patients with prolonged use of medication
Patients with old injuries around same wrist

RESULTS

Total 50 patients were admitted ,25(50%) were male and 25(50%) were female. All patients were admitted out patients and accident and emergency departments. The age range was from 20 to 70 years of age .Mean age was 45.29 year. 25% patients was admitted from our patients department and 25(50%) from emergency department. 20(40%) patients suffered from fractures, 20(40%) from liagamentus injury alone and remaining 10(20%) were suffered from both fracture and liagmetentus injury. The mechanism injury was road traffic accident in 16(32%), history of fall 27(54%) and in remaining 7(14%) was fight . The right side was involved in 37(74%) and left side was in 13(26%) patients.

From total 50 patients,9(18%) suffered from CRPS and of these 7(28%) were female and 2(8%) were male .5(10%) patients suffered from CRPS were between 60 to 70 years of age ,3(6%) were between 50 to 60 years and 1(2%) were between 20 to30 years of age. Out of 20 patents with bony injury 01(1%), out of 20 patients with ligamentous injury 4(2%) and out of 10 patients with both bony and ligamentous injury 4(40%)were suffered CRPS. Out of 25 patients admitted through OPD 7(28%) and out of 25 patients admitted through accident and emergency department (2%) were suffered from CRPS.

Out of 18 patients where ORIF was done and no pop was applied only 1(5.55%),out of 14 patients in which ORIF and pop back slab was applied for 3 weeks o 2(14.28%) and out of 18 patients in which only pop was applied 6(33.33%) patients suffered from CRPS.

Clinical diagnostic criteria for CRPS t make the clinical diagnosis,

Criteria	**Categories**			
	Sensory	**Vasomotor**	**Sudomotor/odema**	**Motor/trophic**
Continuing pain that is disproportionate to any inciting event	-	-	-	-
SYMPTOMS;Must report at least one symptom inthree of the fourfollowing categories:	Reports of hyperesthesia and/or allodynia	Reports of temperature asymmetry and/or skin color changes and/or skin color asymmetry	Edema: Reports of edema and/or sweating changes and/or sweating asymmetry	Reports of decreased range of motion and/or motor dysfunction (weakness, tremor, dystonia) and/or trophic changes (hair, nail, skin
SIGN Must display at least one sign at time of evaluation intwo or moreof the following categories	: Evidence of hyperalgesia (to pinprick) and/or allodynia (to light touch and/or temperature sensation and/or deep somatic pressure and/or joint movement)	Reports of temperature asymmetry and/or skin color changes and/or skin color asymmetry	Edema: Evidence of edema and/or sweating changes and/or sweating asymmetry Motor/Trophic	Evidence of decreased range of motion and/or motor dysfunction (weakness, tremor, dystonia) and/or trophic changes (hair, nail, skin
No other diagnosis can better explainthe patient's sign and symptoms				

DISCUSSION

CRPS is not a common problem. In most studies its prevalence is very low and mostly found to be even <2%[19]. Its incidence was about 26.2 cases per 100,000 person years was reported in one study conducted in Netherlands , while another study which was reported from United States it was reported that its incidence was about 5.5 cases per 100,000 person years[20,21].

The most effected patients were found to be from 40 years to 49 years of age and also it was most common in female (76%) as compare to male[22], It was reported that the upper limb was most commonly involved, and in some studies it was double as compare to the lower limb Although the exact etiology is not confirmed but it was more common in case of fractures fracture (46%). In 10-26% of patients affected there was no clear cut responsible factors was found[22]. Some author's reported a link between diabetes, alcohol and smoking with the CRPS but now it was found that these factors are not responsible for it[23]. Type I CRPS has a incidence of 1.8% per year and about half of the patients recovered spontaneous[24].

In one study it was reported after fasciotomy for Dupuytren contracture, Rates of the occurrence was range from 4.5% to 40%. At the same time its occurrence was from, 2% to 5% when patients were operated for after carpal tunnel. Its rate of occurrence was reported for about 22% to 39% after were treated distal radius fractures[17].

Some authors reported a much higher incidence in case of comminuted, intra-articular distal radius fractures. And its incidence rate is much increased when there are fractures with associated ulnar styloid injuries. When a comparative study was done it was much common in cases treated with closed reduction and casting as compare to those who treated with percutaneous pinning)[23]. Some authors reported that raised intra-cast pressure may be the risk factor but some reported that extreme positions was the common risk factor for development of CRPS[25].

The incidence of chronic regional pain syndrome in our study is higher as compared to previous studies[30]. The higher incidence in our study could be due to the elderly patients. In this study we used BUDAPEST criteria for screening & diagnosing patient of chronic regional pain syndrome. The updated criteria have been shown to improve both specificity & sensitivity of CRPS diagnosis & the only standardized, internationally recognized &validated criteria for diagnosis of CRPS[30,1]. While most of previous studies had used IASP for diagnosing CRPS[31] which might affect their results & showed higher incidence.

The higher incidence in our study is due to elderly population & previous studies have shown linked to increasing age as a risk factor for CRPS[31]. Most of incidence in our study was reported in female as compared to male [6:2] as previous studies had also shown female predication for female sex[31]. Delay in rehabilitation & prolonged casting were also prone patient to CRPS[29]. A longer follow up visits of 6 months also increase strength of study[29]. Potential weakness of our study could be that both operative & non-operative patient was included, which might affect result. Presence of different co morbidities can also effect study result in elderly population. Cast application by different personnel in emergency &clinic might affect study result.

CONCLUSION

The observed higher incidence of CRPS in wrist injures due to elderly population. Presence of diagnostic criteria helps in &treatment of this debilitating disease. Larger studies should be done to evaluate risk factor & treatment of CRPS. Gold standard diagnostic criteria for chronic regional pain syndrome has yet to be devised

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