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A Clınıcal Study of Herpes Zoster in Nineveh governorate patıents in Iraq

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ABSTRACT

Herpes zoster (HZ) is a reactivation of dormant virus of varicella zoster disease. The most common complication of herpes zoster is postherpetic neuralgia(PHN), in this study which was made on fifty patients attended to dermatological section of Ibn-Sina teaching hospital in Mosul city, complaining of H.Z eruption , between Dec, 2017-May,2018, as a descriptive study of cross-sectional design.

Methods: complete history was taken from each patient including the following: age, sex, occupation, chief complaint, duration of the complaint, prodromal symptoms, history of the beginning of the disease , severity of pain , character of pain and any associated itching..

Results: Fifty patients were studied with their different clinical presentations, their mean age was (39.8 ±18.4) ranged from 8 - 75 years. The number of males and females were 32 and 18 respectively giving male to female ratio of 1.7:1.

The type (morphology) of the lesions at the time of presentation were 45 erythematous, 41 vesicular eruption,13 papular and 7 crusted lesions.(Table 1).

The predominate symptom in 34 patients was severe pain of different characters ranging from burning to stabbing sensation, twelve over all patients gave history of pain with mild itching (Table2).Table 3 is showing the distribution of HZ.

Regarding the dermatomal distribution, 44 were in the thoracic region , being the commonest thoracic dermatomes affected were T10 and T4 while the number of dermatomes affected in cervical, lumber, trigeminal and sacral were 15,5,4 and 2 respectively as shown in (Fig.4) the right dermatomes were seen in 26 patients compared to 24 patients with left dermatomal affections.

Regarding the complications of HZ, 4 patients complaining of PHN, 10 with post inflammatory hypo or hyper pigmentation.

Conclusions:

1- HZ infection can be presented with different presentations.
2- Immunodeficient patients are more liable for getting this infection.
3- HZ in old age groups with chronic diseases will possibly end with more complication like PHN .

Key words: Herpez zoster, PHN(post herpetic neuralgia).

INTRODUCTION

Definition: Herpez zoster(HZ)is an acute localized viral infection caused by varicella zoster virus (VZV), characterized by unilateral pain and vesicular or bullous eruption limited the dermatome innervated by corresponding single spinal or cranial sensory ganglion.[1,3]

Cause: The causative agent is Varicella Zoster virus (VZV) which is from the herpes virus group consists of relatively large DNA.[4]Virus probably persists in the cell for which the strain is specific for the rest of the individual.[4,15]

Epidemiology: HZ occurs sporadically in individual without seasonal prevalence. It affects both sexes and all races with equal frequency. Patients are infectious both from active lesion and in some instances from the nasopharynx .Insusceptible contacts of zoster, severe chickenpox sometimes can occur.[4,6]

The average annual incidence was estimated at3.4/1000 of population.[4]It is uncommon in childhood except among those with immunosuppressant status. It is highest among individuals in the sixth though the eighth decade of life[3,2,4,6,7,11,1].HZ can developed in a virulent form and fulminating picture in those who are immune-compromised

patients like those with lymphoma, bone marrow transplant and in humman immune diffiency virus (HIV)patients which may be the first sign .[2,4,6,10,12,13].

Clinical presentation: The first manifestation of HZ is usually a localized unilateral pain which may be severe and may be accompanied by fever, headache and malaise. The incubation period (IP) is unknown [2,4,6]. pre-eruptive neuralgia , itching or burning sensation generally localized to the dermatome precedes the eruption by up to 72 hours. The pain may be more diffuse.

Occasionally nerve involvement without eruption (zoster sine eruption) can occur [4,6,15,26]. The eruption starts as closely grouped red papules rapidly becoming vesicular on erythematous and oedematous base situated unilaterally within distribution of cranial or spinal nerve coming from the posterior ganglion and develops in continuous or interrupted band in the area of one, occasionally two and rarely more contiguous dermatomeses , sometime inflammation in ganglion extends into dorsal root , spinal cord or ventral root and weakness in the corresponding myotome seen in up to 30% of patients. Lymph nodes draining the affected area are frequently enlarged and tender [4,6,18,26] .Post herpetic neuralgia(PHN) pain occurs after resolution of the lesions more seen in old ,immune compromised patients in many pictures :postherpetic neuralgia can be presented with a range of neurologic pain symptoms: intermittent or continuous, deep or superficial, throbbing or stabbing or spontaneous aching or burning(Paroxysmal Alodynia Hyperalgesia Intense itching).[42]

Dermatomal distribution: The eruption is almost invariably unilateral which is of diagnostic importance . The dermatomes most frequently affected are thoracic 55% , cranial 20% (trigeminal nerve being the most common single nerve involved) , the lumber 15% and sacral 15%[4,15,16].

Pathogenesis: Varicella is the primary infection following whose viremicstage the virus persists innerve ganglion cells usually sensory and HZ is the Result of reactivation of residual latent virus usually for no apparent reason but in general depression in immunity may result in reactivation.Fig.1.

Pathology: The earliest Histopathology change are an increase in size and chromatin content of individual keratinocytes nuclei in the basal and mid zone of the epidermis, these enlarge so as to almost fill the cytoplasm beyond this the cytoplasm becomes edematous and the cell has a bloated appearance (balloon degeneration) .Multinucleated giant cells with up to 15 nuclei which are characteristic feature of infection with herpes varicella and herpes hominis are produced mainly by cells fusion. The intracellular oedema combined with intercellular oedema forms the vesicles.

Treatment of HZ: 1-Local treatment including soothing and drying agent.[2,4]
2-Symptomatic treatment like pain killers, antihistamines and antibiotics if there is any possibility of infection.[15,5]

Specific treatment: 1-Acyclovir is a safe antiviral drug given in a high dose s 800 mg five times daily for 7-10 days to promote more rapid healing, decrease Period of pain and it is hoped to decrease incidence of postherpetic neurologica (PHN).[4,5,35,38,41]
2- famicloviris a prodrug of penciclovir given in adose of 500 mg three times daily for 7 days.
3- valacyclovir is prodrug ester of acyclovir it is absorbed better than acyclovir in adoesof 1gm orally three times daily.
4- The HZ vaccine is approved by the United State Food and Drug Administration for the prevention of HZ in immunocompetent patients 60 years of age or older. Adverse reactions to the vaccine injection site tend to be mild. These include erythema, pain, swelling, and pruritus. A varicella-like rash in the injection site has been reported. ‘‘Zostavax is contraindicated in per- sons who are immunosuppresed as a result of disease (e.g., AIDS, lymph proliferative malignan-cies)[41].
5-Prevention:

The live attenuated zoster vaccine significantly boosts VZV-specific cellular immunity in older adults. Antiviral therapy does not prevent PHN and must be initiated within 72 hours of rash onset.[43].

Aim of the Study: HZ is not uncommon disease seen indifferent presentation and dermatomal affection. This study was to evaluate dermatomal distribution and clinical aspects including complications in Nineveh city in the North of Iraq.

PATIENTS AND METHODS:

The study was made on fifty patients attended to dermatological section of Ibn-Sinateaching hospital in Mosul city, complaining of H-Z eruption between Dec, 2017-May,2018.All patients was evaluated by senior specialist.
As a descriptive study of cross- sectional design.

Complete history was taken from each patient including the following: age, sex, occupation, chief complaint, duration of the complaint, prodromal symptoms, history of the beginning of the disease , severity of pain , character of pain and any associate ditching. Present and past medical history including history of D.M, T.B, cancer, HIV infection or history of drug taking especially steroid and chemotherapy. General examination of all patients; examination of the lesion regarding the site of dermatorne. the shape of the lesion, distribution and any lymph node enlargement. All these items were filled in a questionnaire paper with figure of the body dermatomes distribution. Follow up for the patients was performed for 1-2 month on average after the first visit.

RESULTS

Fifty patients were studied with their different clinical presentations, their mean age was (39.8 ±18.4) ranged from 8-75 years. The number of males and females were 32 and 18 respectively giving male to female ratio of 1.7:1.

The type (morphology) of the lesions at the time of presentation were 45 erythematous, 41 vesicular eruption 13 papular and 7crusted lesions. (Table 1).

The predominate symptom in 34 patients was severe pain of different characters ranging from burning to stabbing sensation, twelve over all patients gave history of pain with mild itching (Table(2). Table 3 is showing the distribution of HZ.

Regarding the dermatonal distribution, 44 were in the thoracic region , being the commonest thoracic dermatomes affected were T10 and T4 while the number of dermatomes affected in cervical, lumber, trigeminal and sacral were 15,5,4 and 2 respectively as shown in (Fig.4) the right dermatomes were seen in 26 patients compared to 24 patients with left dermatomal affections.

Regarding the complications of HZ, 4 patients complaining of PHN, 10 with post inflammatory hypo or hyper pigmentation, 1 with hair loss and 2 patients with secondary pyogenic infection (Table (5). Lymphadenopathy wasseen in fifty four percent of the patients. Table (6) shows presentation of Hz in children. Table (7) shows other presenting pictures of HZ in this study.

DISCUSSION

The prodromal period of H.Z disease is important for patient and doctor , i.e different presentations at this time make the diagnosis more or less away from the accurate diagnosis which if made earlier, then we can help the patients from two aspects, first by preventing severity of the evolution of the eruption and / or to decrease the possibility of PHN, second to save the patient from exposure to other modalities of treatment, like surgical interventions or harmful medical treatment ,for the patient or his family, in this study 5 cases were presented with non dermatological complaints like chest pain, acute retention of urine, abdominal colic and intractable headache or muscular pain accordingly surgeons . physicians and rheumatologist should keep this complaint in their minds (Table7).

In present study, thoracic dermatomes were most commonly affected by HZ 44 (62.8 %) while the cervical dermatomes came secondly 15(21.4 %), lumber dermatomes 5(7.1 %) trigeminal nerve 4(5.7%) and sacral dermatomes 2(2.8 %), these findings are in agreement with the results of Ala Al-Deen. [5] but only differs in the incidence of lumber which was too low 7.1 % in this study, Also it differs from what is reported by Kurtz J et.al [4] and Chang CM. et.al [16] in other countries in which the ophthalmic HZ incidence was about 15% of the affected dermatomes .

Patients more than fifty five years old were more commonly affected in this study than other age groups may be due to the low immunity in these patients which made them liable for infection and this is with proved relation between this viral infection and immunosuppressive statement. Six children (less than10 years old) were affected (12 %), two of them are on immunosuppressive drug (steroid) surprisingly in both of them the ophthalmic nerve was affected, this result also due to their low immunity and stressful life involving the two spectrum of age nowadays. PHN affected 8 % of cases only in old age groups this complication may be due to low immunity especially those with diabetes mellitus or on steroid therapy for any cause, or may be due to late uses of antiviral therapy or even steroid for patient with H.Z in those ages.

CONCLUSIONS

1-HZ infection can be presented with different presentations.
2-Immunodeficient patients are more liable for getting this infections like diabetes mellitus and patients on chemotherapy treatment with more severe picture, should prevent contact of those patients with others who have the disease.

3- HZ in old age groups with chronic diseases will possibly end with more complication like PHN and more severe course of the disease.
4- Early effective treatment prevent or decrease subsequent complication.

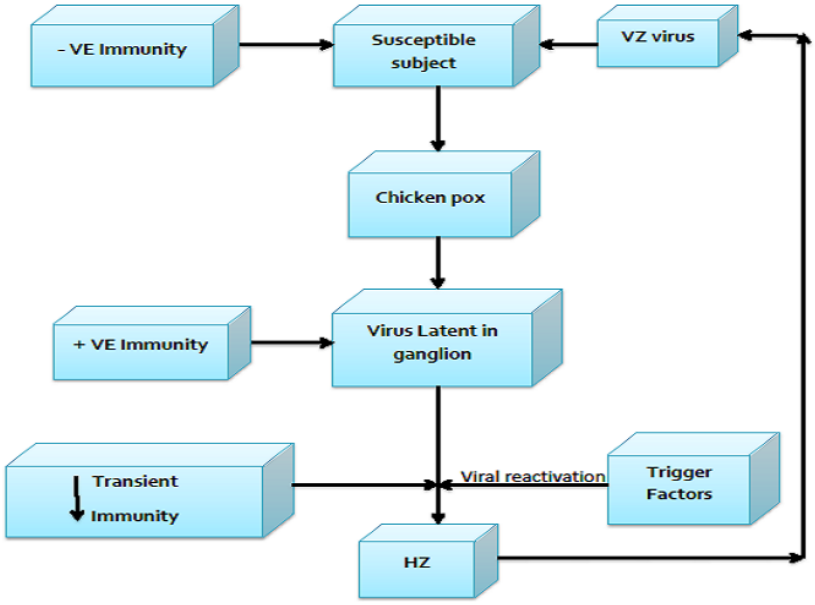

Fig. 1: Zoster/ Varicella relationships with statement of immunity

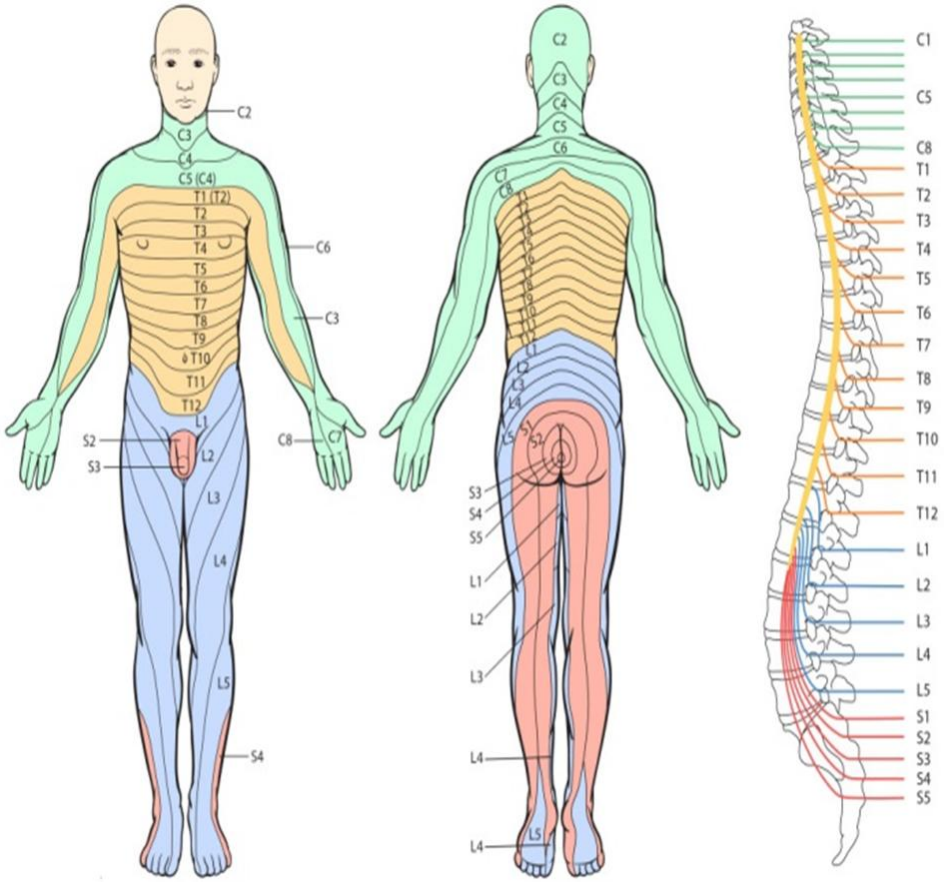

Fig.2 Dermatomes in ours body surface

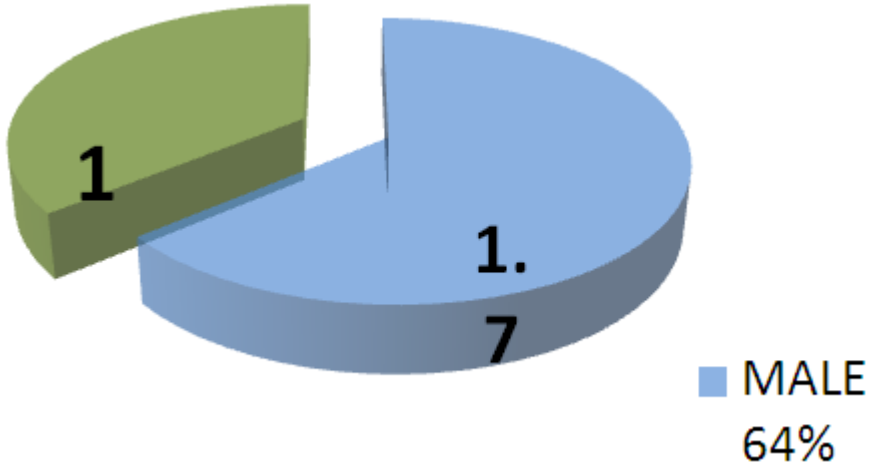

Fig. 3: The Sex Distribution of HZ in 50 Patients

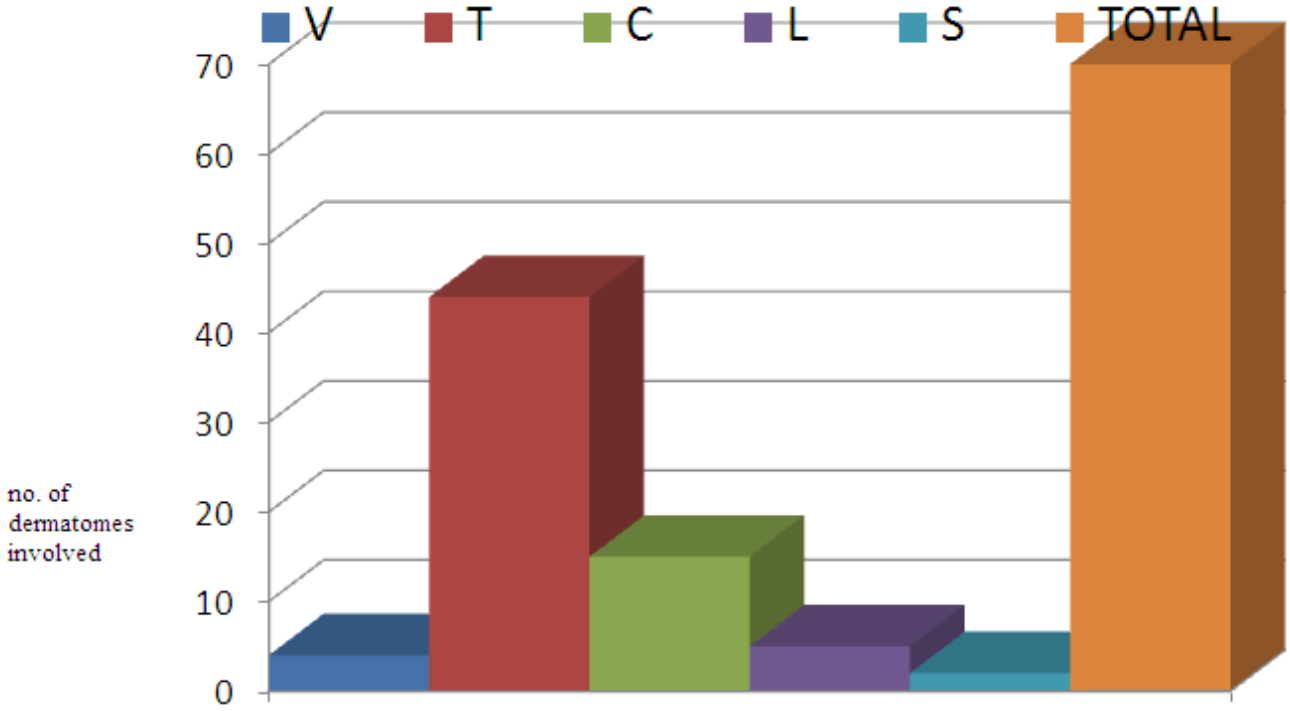

Fig.4: Dermatomal distribution of HZ in 50 patients

Table (1) : The type of the lesions at the time of presentation.

LESION	NO OF PATIENT			%
Erythematous	**45**			**90 %**
Vesicular including pustulur , haemorrhagic	**41**	**38** **2** **1**	Vesicular pustulur haemorrhagic	**82 %**
papular	**15**			**30 %**
crusted	**7**			**14 %**

(More than one lesion occurs in the same patient)

Table 2: distribution of symptoms in the patients.

symptom	severe	%	moderate	%	mild	%	absent	
pain	**34**	**68%**	**14**	**28%**	**2**	**4%**	**-**	**-**
itching	**0**	**0%**	**8**	**16%**	**12**	**24%**	**30**	**60%**

Table 3: HZ distribution according to the ages and dermatomal involvement.

AGE /YEAR	PATIENTS NO.	%	DERMATOME	TOTAL DERMATOMES
1-10	6	12	C2.T9.C6.V1.C4.V1	V=2 C=3 T=1
11-20	3	6	T3.T2.L1.L2.T8	T=3 L=2
21-30	12	24	T3.T4.T5.T6.C4.C5.T5.T6.T12.C4.C5.T8. T9.C6.C5.T4.T5.T2.T3.T6.T3.T4.	C=6 T=16
31-40	5	10	C5.T10.T6.T9.T10.T11. T4.	C=2 T=6
41-50	5	10	T2.T11.T10.T9.T10.T4. C4	T=6 C=1
51-60	13	26	T12.T9.T10.T3.C2.L5.S1V1.S3.C4.T6.C5. L3.T2.V2.V1	T=6 C=3 L=2 S=2 V=2
> 60	6	12	T4.T7.T8.T12.L4.T10. T11.C6	T=6 L=1 C=1

*some patients have more than one contiguous dermatome involvement

Tabla 4: HZ in patients > 55 years old.

AGE/ YEAR	SEX	DERMATOME	PAIN	ITCH	PHN	MEDICAL HISTORY
55	male	L5,S1	severe	Mild	-ve	hypertension
56	male	V1	severe	-	+ve	hypertension
56	female	L3	moderate	-	-ve	-
57	male	S3	severe	Mild	-ve	-
58	male	T9,T10	moderate	-	+ve	hypertension
58	male	T3	moderate	-	-ve	-
58	male	C2	severe	Mild	-ve	hypertension
58	female	T11,T10	severe	Mild	-ve	-
60	female	T6	moderate	Mild	+ve	D.M& hypertension
60	male	C2	moderate	Mild	-ve	-
60	male	V2	severe	-	+ve	phemphigus on steroid
61	female	C6	moderate	-	-	-
63	female	L4	severe	-	-	hypertension
64	male	T12	severe	-	-	D.M.
65	female	T4	moderate	-	-	radiation postmastectommy
75	male	T10,T11	moderate	-	moderate	-
65	female	T7,T8	severe	-	-	hypertension

*some patients have more than one contiguous dermatome involvement

Table 5: Dermatological complications of HZ

COMPLICATION	NO.OF PATIENTS	%
1.Post Herpetic Neuralgia (PHN)	**4**	**8%**
2. Secondary Bacterial infection	**8**	**16%**
3. Post inflammatory hyperpigmentation	**6**	**12%**
4. Post inflammatory hypopigmentation	**4**	**8%**
5. Localized hair loss **6. Hypertrophic scars and keliods**	**1**	**2%**

Table 6: HZ in patient < 10 years old

AGE	SEX	DERMATOME	PAIN	ITCHING	COMPLICATION	MEDICAL HISTORY
9	**male**	**V1**	**moderate**	**mild**	**secondary P.I**	**nephrotic syndrome on steroid**
8	**male**	**C4**	**severe**	**mild**	**-**	**-**
6	**female**	**T9**	**severe**	**-**	**-**	**-**
8	**male**	**C6**	**moderate**	**mild**	**secondary P.I**	**-**
5	**male**	**V1**	**severe**	**-**	**-**	**atopic dermatitis on steroid**
9	**male**	**C2**	**severe**	**mild**	**-**	**-**

*P.I. =pyogenic infection

Table 7: other presentations of HZ

PRESENTATIONS	NO.OF PATIENTS
Muscular pain	3
Chest pain	1
Acute Abdomen	1
Bilateral thoracic dermatome involvement	1
Intractable headache	1

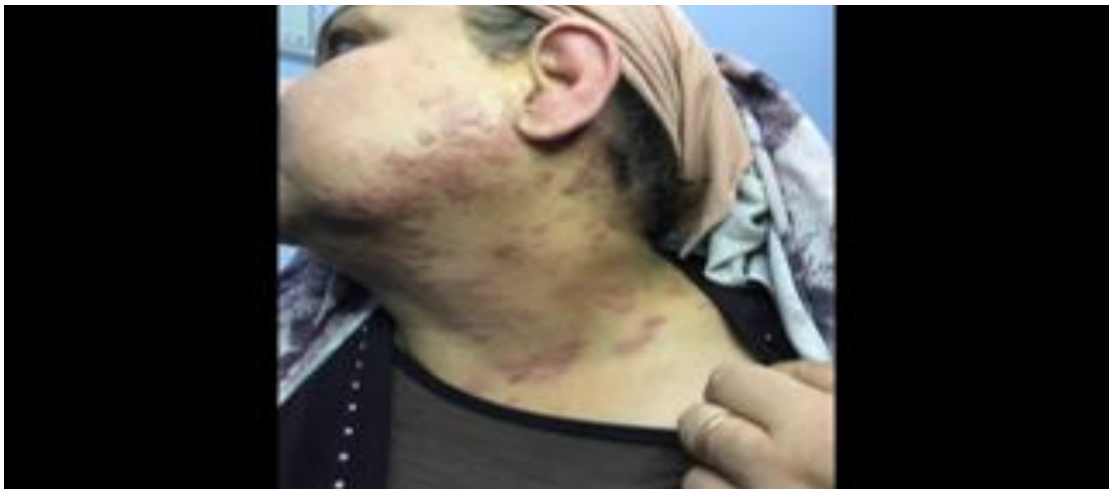

Fig. 5: Dermatome c2,c3,c4

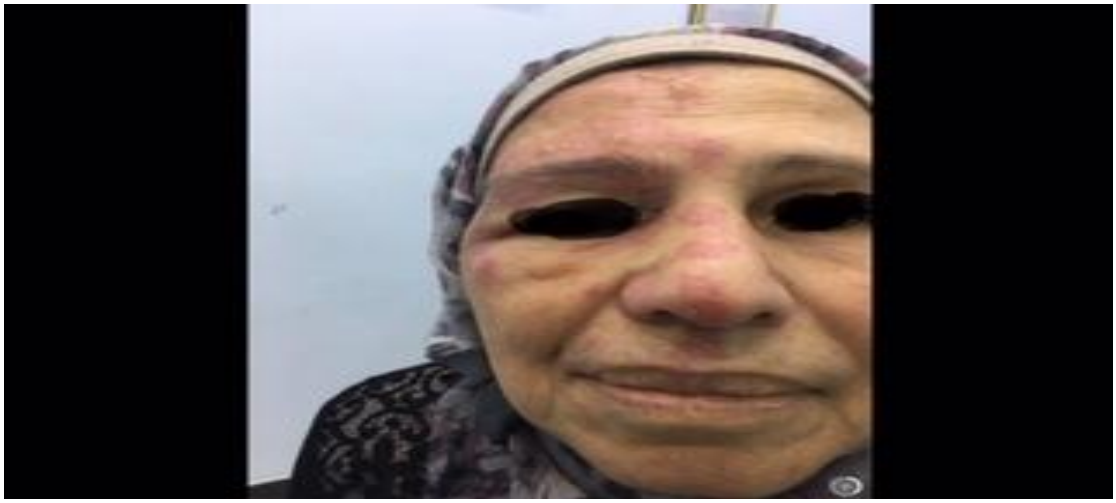

Fig. 6: Dermatomes V1,V2

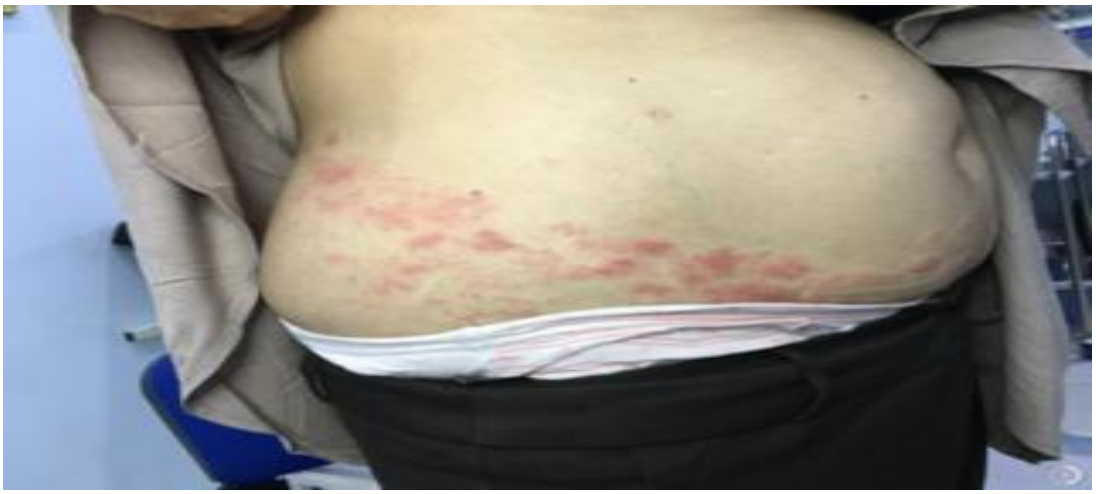

Fig. 7: T11,T12

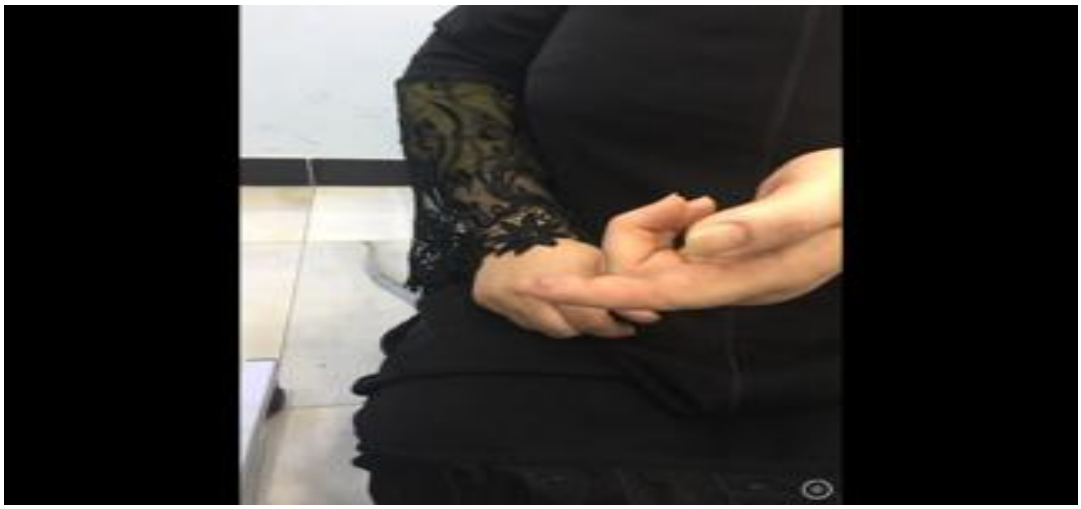

Fig. 8: Dermatomes C7,C8

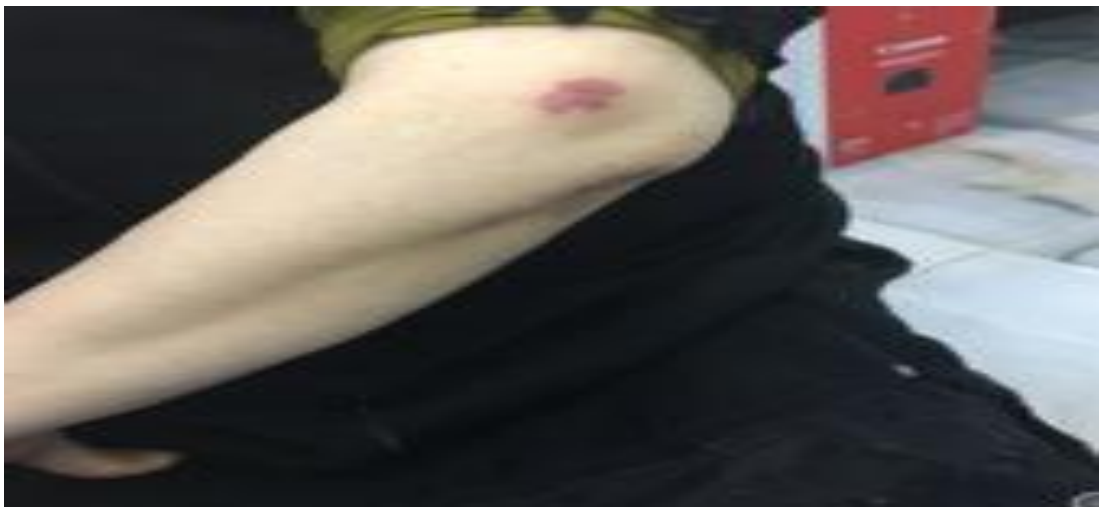

Fig. 9: The same above patient

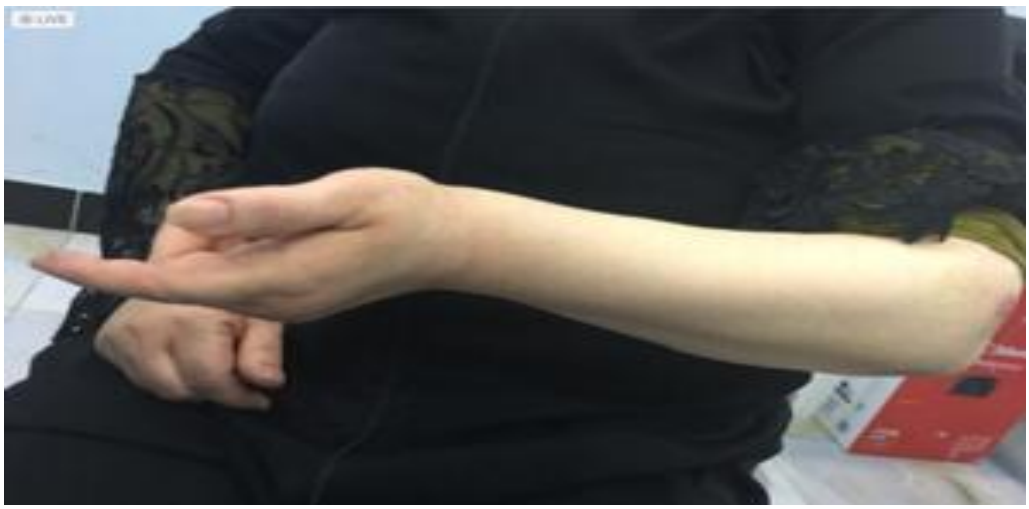

Fig. 10: The same patient above

Fig. 11: Dermatomes C6,C7,C8

Fig. 12: The same above patient

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